



TRWC Board of Director's Meeting

September 6, 2018 - 9:00 a.m.

Phoenix-Mesa Gateway Airport (PMGA)

Administration Building, Board Room

5835 S. Sossaman Road

Mesa, AZ 85212

Video Conference: <https://global.gotomeeting.com/join/668758453>

Audio Bridge: 1-571-317-3122, Access Code 668-758-453

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 or designee prior to the beginning of the meeting. 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 and video recording
- d. TRWC 10-year Anniversary

2) 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 promptly turn it in to the Executive Director or designee prior to the beginning of the meeting. There is a time limit of three minutes for comments.

3) Discussion and Action on Board Meeting Minutes

March 15, 2018 Board Meeting Minutes

4) Discussion and Possible Action on FY 19/20 Preliminary Budget - Dale Shaw & Jared Hansen

5) Discussion and Action on New IGA and Governance Adoption - Dale Shaw & Bill Anger

6) Discussion and Possible Action on SRPMIC Membership - Dale Shaw & Bill Anger

7) FirstNet Update – Amos Chalmers – AT&T/FirstNet

8) Discussion and Possible Action on Committee and Working Group Updates

- a. CSAA Coordinating Council – John Pombier & Dale Crogan
- b. Executive Committee Update – Bob Badgett (Co-chair)
- c. User Group Update – Dale Crogan

9) Discussion and Possible Action on Network Administrator Updates

- a. Finance Update – Jared Hansen
- b. Network Updates and Performance Overview – Randy Thompson

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.

11) Next TRWC Board Meetings:

All meetings are currently scheduled from 9:00 a.m. to 11:00 a.m. at PMGA.

2018 Schedule

Date	Upcoming Agenda Items
12/13/18	- FY19/20 Budget Adoption - SRPMIC Membership Approval

2019 Schedule

Date	Upcoming Agenda Items
03/14/19	
05/09/19	
09/12/19	- Chairman & Vice-Chairman Elections - FY20/21 Preliminary Budget Review
12/12/19	- FY20/21 Budget Adoption

12) Adjournment



TRWC Board of Director's Meeting Minutes

March 15, 2018 - 9:00 a.m.

Phoenix-Mesa Gateway Airport (PMGA)

Administration Building, Board Room

5835 S. Sossaman Road

Mesa, AZ 85212

Video Conference: <https://global.gotomeeting.com/join/951281397>

Audio Bridge: 1-872-240-3412, Access Code 951-281-397

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 or designee prior to the beginning of the meeting. There is a time limit of three minutes for comments.

Board Members and Official Staff Present: Chairman John Kross, Vice-Chair Mike Farber, Board Members: Jay Ducote, John Pombier, Jerry Ward (via phone) Mark Openshaw, Bob Badgett; Executive Director Dale Shaw, Attorney Bill Anger, Accountant Sherry McGlade, Accountant Jared Hansen, Administration Melanie Humphries, Administration Cheryl Noll.

Agenda

- 1) Call to Order and Opening Comments
 - a. [Materials](#) and sign-in sheet
 - b. Speaker cards
 - c. Audio and video recording

Chairman Kross called the meeting to order and welcomed the attendees. He also provided instruction on the process for public comment and reminded the participants that the meeting is audio recorded.

- 2) 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 promptly turn it in to the Executive Director or designee prior to the beginning of the meeting. There is a time limit of three minutes for comments.

No public comment requests were received.

- 3) Staffing Changes

Welcome Jared Hansen, our new senior accountant. Thank you, Sherry McGlade, for your past contributions.

Welcome Cheryl Noll, our new administrative support assistant. We also thank Melanie Humphries for her support in this role.

Chairman Kross thanked both Sherry McGlade and Melanie Humphries for their past contributions and support and assistance and welcomed Cheryl Noll and Jared Hansen.

- 4) Discussion and Action on Board Meeting Minutes

December 7, 2017 Board Meeting Minutes

John Pombier motioned to approve the 12/7/17 TRWC Board Meeting Minutes and Mike Farber seconded. All Board Members who were in favor signaled by saying aye; there was no opposition, the motion passed unanimously.

5) Discussion and Possible Action on Pinal County Sheriff's Office (PCSO) Interoperability Request

Dale Shaw introduced Jay Vargo, Public Safety Systems Manager of Pinal County Information Technology, who reviewed the PowerPoint Presentation previously submitted to the Board.

Mark Openshaw motioned to approve the PCSO Interoperability request and Mike Farber seconded. All Board Members who were in favor signaled by saying aye; there was no opposition, the motion passed unanimously.

6) Discussion and Possible Action on Communications Strategic Alliance Master IGA - Dale Shaw

a. Official Appointment of the Coordinating Council Governing Representative and User Representative.

Dale Shaw stated City of Mesa has approved the IGA as part of their capacity as Administrative Manager of the TRWC and it has been executed. The exchange of the document with TRWC is being coordinated and we will be standing up the committees to move the effort forward.

At the last board meeting, John Pombier and Dale Crogan were appointed as Interim Coordinating Council. Now that we are standing the organization, it is appropriate for the Board to take official action on the appointments in those roles.

Mark Openshaw motioned to approve the appointment of John Pombier and Dale Crogan as Coordinating Council for the Communications Strategic Alliance Master IGA. Jay Ducote seconded. All Board Members who were in favor signaled by saying aye; there was no opposition, the motion passed unanimously.

7) FirstNet Update - Karen Ziegler (AZDOA)

Karen Ziegler of AZDOA, a member of the State Planning Team for the FirstNet Project introduced a new member to the FirstNet Authority who was in the audience, Harry Markley. He is the Law Enforcement Senior Advisor for FirstNet. Karen stated regional outreach meetings in February were very successful and they are moving into a new phase of implementation with FirstNet. The state is still going to plan activities of the next couple of years and they will be the liaison between Federal FirstNet, AT&T and the State. Mission Critical Partners is under contract with the State of Arizona and they have a team of engineers that will help look at the integration that is going to need to happen with FirstNet and the LMR community as well as the PSAP. More information will follow after a planning meeting in a couple of weeks. The other focus is to re-establish the State Interoperability Executive Committee.

Amos Chalmers, the Representative from AT&T, gave an update stating that every state has opted in and so did all the territories. AT&T has also delivered the first set of operational capabilities, opening the commercial network giving us preemption and priority across the entire commercial network. This provides cell service that does not die down in larger crowds. The second set is an entire separate core that will be done by the end of this month. It is a core built with the same capacity as commercial with more security for public safety. Delivery of an additional 72 trucks to restore cell service has begun.

Chairman Kross asked how the first set of operational capabilities is delivered. Mr. Chalmers stated the towers see you as a FirstNet customer and if there is traffic in that zone in the tower it kicks that traffic out of the way.

8) Discussion and Possible Action on Committee and Working Group Updates

a. Executive Committee Update

Bill Peters stated last year the Executive Board finished the Governance and that document refers to policy that Dale Shaw and Randy Thompson are currently working on. As soon as that is

done they will marry the two documents and bring it before the Board of Directors.

b. User Group Update

Dale Crogan indicated they are still good with the go with the VHF Project live date of April 2.

9) Discussion and Possible Action on Network Administrator Updates

a. Finance Update

Sherry McGlade presented a financial update as provided in the Board Packet.

b. Network Updates and Performance Overview

Dale Shaw referred the committee the summary review provided in the Board Packet produced by Randy Thompson.

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.

None were made.

11) Next TRWC Board Meetings:

All meetings are currently scheduled from 9:00 a.m. to 11:00 a.m. at PMGA.

2018 Schedule

Date	Upcoming Agenda Items
05/03/18	
09/06/18	-FY19/20 Preliminary Budget Review
12/13/18	-FY19/20 Budget Adoption

2019 Schedule

Date	Upcoming Agenda Items
03/14/19	
05/09/19	
09/12/19	-Chairman and Vice-Chairman Elections -FY20/21 Preliminary Budget Review
12/12/19	-FY20/21 Budget Adoption

12) Adjournment

**TRWC Operating & Maintenance Budget
Summary of Labor and Non-labor**

FY 18/19 ENDORSED BUDGET CORRECTED	FY 19/20 PROPOSED BUDGET	CHANGE FY18/19 to FY19/20
		1.90%
\$ 390,840	\$ 398,266	\$ 7,426
\$ 390,840	\$ 398,266	\$ 7,426

ESCALATION FACTOR

Salaries and Wages
Total Labor

ESCALATION FACTOR

GENERAL & ADMINISTRATIVE - OTHER SERVICES

			1.90%
Temp Services	\$ 6,000	\$ 6,114	\$ 114
Prof Services - TRWC Executive Director	88,500	90,182	1,681
Prof Services - Legal	37,000	37,703	703
Prof Services - Consulting & Other	15,000	15,285	285
Ins. Premiums - Agencies	8,500	8,662	162
Utilities	60,000	70,000	10,000
Telephone	3,400	3,465	65
Repairs & Maint	31,000	31,589	589
Equipment Usage (Vehicles)	20,000	20,380	380
Shaw Butte & Florence Gardens	25,300	25,781	481
Training	-	10,000	10,000
All Other Services	-	-	-
TOTAL OTHER SERVICES	\$ 294,700	\$ 319,159	\$24,459

GENERAL & ADMINISTRATIVE - COMMODITIES

Non Cap Assets	\$ 25,000	25,475	\$ 475
Contract - Motorola (Preventative & Security Monitoring)	957,200	1,012,200	55,000
Software Maint-Mainsaver, Juniper	22,500	22,928	427
Materials & Repair Parts	20,460	20,849	389
All Other Commodities	-	-	-
TOTAL COMMODITIES	\$ 1,025,160	\$ 1,081,451	\$56,291

OTHER BUDGET ITEMS

PROPOSED CONTINGENCY - 3%	\$ 51,321	\$ 53,966	\$ 2,645
VHF OPERATIONS (special assessment)	120,138	123,813	3,675
VHF Equipment Staff Time (special assessment)	27,500	28,023	522
TOTAL OTHER BUDGET ITEMS	\$ 198,959	\$ 205,802	\$ 6,843

Total Operating & Maintenance

\$ 1,909,659	\$ 2,004,678	\$95,019
---------------------	---------------------	-----------------

O&M - AIRTIME PERCENTAGE (1)

Mesa	71.33%	68.54%	-2.79%
Gilbert	16.48%	17.79%	1.31%
Apache Junction	8.20%	9.00%	0.80%
Ft McDowell	1.88%	2.11%	0.23%
Superstition Fire & Medical	0.75%	1.06%	0.31%
Queen Creek	0.46%	0.41%	-0.05%
Rio Verde	0.03%	0.03%	0.00%
Southwest Ambulance	0.71%	0.87%	0.16%
American Medical Response	0.16%	0.19%	0.03%
Total	100.00%	100.00%	0.00%

VHF SPECIAL ASSESSMENT (2,3)

Mesa Fire & Medical	66.85%	68.68%	1.83%
Gilbert Fire	18.81%	17.16%	-1.65%
Superstition Fire & Medical	8.11%	10.01%	1.90%
Queen Creek Fire	5.73%	3.22%	-2.51%
Rio Verde Fire	0.50%	0.93%	0.43%
Total	100.00%	100.00%	0.00%

ANNUAL ESTIMATED REVENUE: OPERATING & MAINTENANCE

Mesa	1,355,546	1,374,219	18,673
Gilbert	318,152	355,676	37,524
Apache Junction	144,486	166,756	22,270
Ft McDowell	33,126	39,095	5,969
Superstition Fire & Medical	25,189	34,839	9,650
Queen Creek	16,565	12,486	(4,079)
Rio Verde	1,267	1,968	701
Southwest Ambulance	12,510	16,120	3,609
American Medical Response	2,819	3,520	701
Total	\$ 1,909,659	\$ 2,004,678	\$95,019

(1) Normal partner assessments are allocated based on July, 2018 6-month rolling average airtime and will change based on actual monthly data.

(2) For FY 18/19 Endorsed Budget, agency cost distribution for the Fire Hazard Zone Communication (VHF) Special Assessment is based on 12 months average Airtime as of March 31, 2015.

(3) For FY 19/20 Proposed Budget, agency cost distribution for the Fire Hazard Zone Communication (VHF) Special Assessment is based on Call Volume July 1, 2017 - June 30, 2018.

**TRWC Operating & Maintenance Budget
Summary of Labor and Non-labor**

	FY 18/19	FY 19/20 PROPOSED BUDGET	FORECAST				
	ENDORSED BUDGET CORRECTED		FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25
ESCALATION FACTOR		1.90%	1.90%	2.30%	3.00%	3.00%	3.00%
Salaries and Wages	\$ 390,840	\$ 398,266	\$ 405,833	\$ 415,167	\$ 427,622	\$ 440,451	\$ 453,664
Total Labor	\$ 390,840	\$ 398,266	\$ 405,833	\$ 415,167	\$ 427,622	\$ 440,451	\$ 453,664
ESCALATION FACTOR		1.90%	1.90%	1.90%	1.90%	1.90%	1.90%
GENERAL & ADMINISTRATIVE - OTHER SERVICES							
Temp Services	\$ 6,000	\$ 6,114	\$ 6,230	\$ 6,349	\$ 6,469	\$ 6,592	\$ 6,717
Prof Services - TRWC Executive Director	88,500	90,182	91,895	93,641	95,420	97,233	99,081
Prof Services - Legal	37,000	37,703	38,419	39,149	39,893	40,651	41,424
Prof Services - Consulting & Other	15,000	15,285	15,575	15,871	16,173	16,480	16,793
Ins. Premiums - Agencies	8,500	8,662	8,826	8,994	9,165	9,339	9,516
Utilities	60,000	70,000	71,330	72,685	74,066	75,474	76,908
Telephone	3,400	3,465	3,530	3,598	3,666	3,736	3,806
Repairs & Maint	31,000	31,589	32,189	32,801	33,424	34,059	34,706
Equipment Usage (Vehicles)	20,000	20,380	20,767	21,162	21,564	21,974	22,391
Shaw Butte & Florence Gardens	25,300	25,781	26,271	26,770	27,278	27,797	28,325
Training	-	10,000	10,190	10,384	10,581	10,782	10,987
All Other Services	-	-	-	-	-	-	-
TOTAL OTHER SERVICES	\$ 294,700	\$ 319,159	\$ 315,033	\$ 321,019	\$ 327,118	\$ 333,334	\$ 339,667
GENERAL & ADMINISTRATIVE - COMMODITIES							
Non Cap Assets	\$ 25,000	25,475	\$ 25,959	\$ 26,452	\$ 26,955	\$ 27,467	\$ 27,989
Contract - Motorola (Preventative & Security Monitoring)	957,200	1,012,200	1,136,531	1,156,761	1,177,351	1,189,125	1,201,016
Software Maint-Mainsaver,Juniper	22,500	22,928	23,363	23,807	24,259	24,720	25,190
Materials & Repair Parts	20,460	20,849	21,245	21,649	22,060	22,479	22,906
All Other Commodities	-	-	-	-	-	-	-
TOTAL COMMODITIES	\$ 1,025,160	\$ 1,081,451	\$ 1,207,098	\$ 1,228,669	\$ 1,250,625	\$ 1,263,791	\$ 1,277,101
OTHER BUDGET ITEMS							
PROPOSED CONTINGENCY - 3%	\$ 51,321	\$ 53,966	\$ 57,839	\$ 58,946	\$ 60,161	\$ 61,127	\$ 62,113
VHF OPERATIONS (special assessment)	120,138	123,813	127,567	131,404	135,326	139,386	143,567
VHF Equipment Staff Time (special assessment)	27,500	28,023	28,555	29,097	29,650	30,214	30,788
TOTAL OTHER BUDGET ITEMS	\$ 198,959	\$ 205,802	\$ 213,961	\$ 219,447	\$ 225,137	\$ 230,727	\$ 236,468
Total Operating & Maintenance	\$ 1,909,659	\$ 2,004,678	\$ 2,141,925	\$ 2,184,302	\$ 2,230,503	\$ 2,268,302	\$ 2,306,900
O&M - AIRTIME PERCENTAGE (1)							
Mesa	71.33%	68.54%	68.54%	68.54%	68.54%	68.54%	68.54%
Gilbert	16.48%	17.79%	17.79%	17.79%	17.79%	17.79%	17.79%
Apache Junction	8.20%	9.00%	9.00%	9.00%	9.00%	9.00%	9.00%
Ft McDowell	1.88%	2.11%	2.11%	2.11%	2.11%	2.11%	2.11%
Superstition Fire & Medical	0.75%	1.06%	1.06%	1.06%	1.06%	1.06%	1.06%
Queen Creek	0.46%	0.41%	0.41%	0.41%	0.41%	0.41%	0.41%
Rio Verde	0.03%	0.03%	0.03%	0.03%	0.03%	0.03%	0.03%
Southwest Ambulance	0.71%	0.87%	0.87%	0.87%	0.87%	0.87%	0.87%
American Medical Response	0.16%	0.19%	0.19%	0.19%	0.19%	0.19%	0.19%
Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
VHF SPECIAL ASSESSMENT (2)							
Mesa Fire & Medical	66.85%	68.68%	68.68%	68.68%	68.68%	68.68%	68.68%
Gilbert Fire	18.81%	17.16%	17.16%	17.16%	17.16%	17.16%	17.16%
Superstition Fire & Medical	8.11%	10.01%	10.01%	10.01%	10.01%	10.01%	10.01%
Queen Creek Fire	5.73%	3.22%	3.22%	3.22%	3.22%	3.22%	3.22%
Rio Verde Fire	0.50%	0.93%	0.93%	0.93%	0.93%	0.93%	0.93%
Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
ANNUAL ESTIMATED REVENUE: OPERATING & MAINTENANCE							
Mesa	\$ 1,355,546	\$ 1,374,219	\$ 1,468,294	\$ 1,497,345	\$ 1,529,018	\$ 1,554,932	\$ 1,581,393
Gilbert	318,152	355,676	380,065	387,576	395,767	402,462	409,299
Apache Junction	144,486	166,756	178,722	182,142	185,897	188,883	191,929
Ft McDowell	33,126	39,095	41,900	42,702	43,583	44,283	44,997
Superstition Fire & Medical	25,189	34,839	36,677	37,518	38,409	39,223	40,058
Queen Creek	16,565	12,486	13,169	13,466	13,781	14,066	14,358
Rio Verde	1,267	1,968	2,048	2,100	2,154	2,207	2,261
Southwest Ambulance	12,510	16,120	17,276	17,607	17,970	18,259	18,553
American Medical Response	2,819	3,520	3,773	3,845	3,925	3,988	4,052
TOTAL	\$ 1,909,659	\$ 2,004,678	\$ 2,141,925	\$ 2,184,302	\$ 2,230,503	\$ 2,268,302	\$ 2,306,900

(1) Normal partner assessments are allocated based on the July 2018 6-month rolling average airtime and will change based on actual monthly data.

(2) For the FY18/19 Endorsed Budget, agency cost distribution for the Fire Hazard Zone Communication (VHF) Special Assessment is based on 12 months average Airtime as of March 31, 2015.

(3) For the FY19/20 Proposed Budget, agency cost distribution for the Fire Hazard Zone Communication (VHF) Special Assessment is based on Call Volume from July 1, 2017 - June 30, 2018.

TRWC Capital Budget Plan

	PROJECT ID	ENDORSED FY 18/19	PROPOSED FY 19/20	FORECASTED							TOTAL 9 Years	
				FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27		
TOPAZ Voice Radio Network Upgrade - LEASE-PURCHASE PAYMENTS ONLY	CP0090	\$ 433,828	\$ 433,828	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 867,656
Wireless Backhaul (Microwave) Network Upgrade - COMPLETE	CP0093											-
Radio Sites Emergency Power Upgrade	CP0094	106,200	106,200	106,200	106,200	106,200						531,000
Florence Gardens ISR Site Lifecycle upgrade	LF0224	354,000										354,000
Antenna & Transmission Lines Lifecycle Upgrade	LF0282	236,000	236,000									472,000
Internet Protocol Network Routers & Switches Lifecycle	CN0050		-	-								-
System-of-Systems Networking	CP0438	619,500	200,000	100,000	100,000	100,000						1,119,500
Internet Protocol Network Routers & Switches Expansion	CP0755	464,625										464,625
Communications Building UPS Battery Replacement	LF0228	17,700					17,700					35,400
Southeast Queen Creek Expansion Site	CP0091			560,992	939,008							1,500,000
Southeast Apache Junction Expansion Site	CP0754				560,992	939,008						1,500,000
Northeast Mesa Expansion Site	CP0779			-	-	560,992	939,008					1,500,000
Interface for non-Motorola Dispatch Console										309,750		309,750
Automated Billing & Upgrade Management Tools									309,750	309,750		619,500
Consulting Services for VHF & 7/800 MHz Coverage Expansion			200,000									200,000
Upgrade Shaw Butte and Florence Gardens to P25 Phase II (TDMA)			231,966	231,966								463,932
Radio & Core Sites Battery Backup Lifecycle Upgrade	NEW							80,000	80,000	80,000		240,000
Radio & Core Sites DC Power Plant Lifecycle Upgrade	NEW									320,000		320,000
Sub-total		2,231,853	1,407,994	999,158	1,706,200	1,706,200	956,708	80,000	389,750	1,019,500		10,497,363
Fire Hazard Zone Communications (VHF) System Coverage Improvement & Channel Expansion	NEW	-	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000		2,400,000
SRPMIC Fire Hazard Zone Communications (VHF) Coverage Expansion	NEW	-	-	-	-	-	-	-	-	-		-
FMYN Fire Hazard Zone Communications (VHF) Coverage Expansion	NEW	-	-	-	-	-	-	-	-	-		-
Sub-total VHF Special Assessment Projects		-	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000		2,400,000
Total Capital & Fire Special Assessment Projects		\$ 2,231,853	\$ 1,707,994	\$ 1,299,158	\$ 2,006,200	\$ 2,006,200	\$ 1,256,708	\$ 380,000	\$ 689,750	\$ 1,319,500		\$ 12,897,363
Capital Assessment to Members												
Mesa	69.28%	1,605,952	975,458	692,217	1,182,055	1,182,055	662,807	55,424	270,019	706,309		7,332,296
Gilbert	17.98%	371,038	253,157	179,649	306,775	306,775	172,016	14,384	70,077	183,306		1,857,177
Apache Junction	9.09%	184,618	127,987	90,823	155,094	155,094	86,965	7,272	35,428	92,673		935,954
Ft McDowell	2.13%	42,327	29,990	21,282	36,342	36,342	20,378	1,704	8,302	21,715		218,382
Superstition Fire & Medical	1.07%	16,886	15,066	10,691	18,256	18,256	10,237	856	4,170	10,909		105,327
Queen Creek	0.42%	10,357	5,914	4,196	7,166	7,166	4,018	336	1,637	4,282		45,072
Rio Verde	0.03%	675	422	300	512	512	287	24	117	306		3,155
Sub-total	100.00%	2,231,853	1,407,994	999,158	1,706,200	1,706,200	956,708	80,000	389,750	1,019,500		10,497,363
VHF Special Assessment												
Mesa Fire & Medical	66.85%	-	200,550	200,550	200,550	200,550	200,550	200,550	200,550	200,550		1,604,400
Gilbert Fire	18.81%	-	56,430	56,430	56,430	56,430	56,430	56,430	56,430	56,430		451,440
Superstition Fire & Medical	8.11%	-	24,330	24,330	24,330	24,330	24,330	24,330	24,330	24,330		194,640
Queen Creek Fire	5.73%	-	17,190	17,190	17,190	17,190	17,190	17,190	17,190	17,190		137,520
Rio Verde Fire	0.50%	-	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500		12,000
Sub-total	100.00%	-	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000		2,400,000
Total Capital + Fire Special Assessment												
Mesa		1,605,952	1,176,008	892,767	1,382,605	1,382,605	863,357	255,974	470,569	906,859		8,936,696
Gilbert		371,038	309,587	236,079	363,205	363,205	228,446	70,814	126,507	239,736		2,308,617
Apache Junction		184,618	127,987	90,823	155,094	155,094	86,965	7,272	35,428	92,673		935,954
Ft McDowell		42,327	29,990	21,282	36,342	36,342	20,378	1,704	8,302	21,715		218,382
Superstition Fire & Medical		16,886	39,396	35,021	42,586	42,586	34,567	25,186	28,500	35,239		299,967
Queen Creek		10,357	23,104	21,386	24,356	24,356	21,208	17,526	18,827	21,472		182,592
Rio Verde		675	1,922	1,800	2,012	2,012	1,787	1,524	1,617	1,806		15,155
Total		2,231,853	1,707,994	1,299,158	2,006,200	2,006,200	1,256,708	380,000	689,750	1,319,500		12,897,363



Capital Plan for FY19/20 to FY26/27

This plan provides a narrative of the projects forecast for the TOPAZ Regional Wireless Cooperative for the fiscal years of 2019/2020 through 2026/2027. Projects beyond fiscal year 2026/2027 are included for planning and visibility.

Projects Funded for FY18/19

TOPAZ Voice Radio Network Lifecycle Upgrade **Project No. CP0090** **\$7,169,138**

Timeframe: Project Complete – ongoing lease payments only

This project provided a lifecycle upgrade to the TOPAZ 800 MHz voice radio network infrastructure, re-banded the radio frequencies utilized by the TRWC to comply with Federal Communications Commission rules, and added the backup capability for the Master Site (Dynamic Site Resiliency, DSR) and the geo-redundant Prime Site for the simulcast cell. This project is complete, but appears on the TRWC Capital Plan because it was funded through a lease-purchase arrangement. The remaining lease payments (\$433,828 each) are due in July, 2018 (paid), and July, 2019.

Wireless Backhaul (Microwave) Network Lifecycle Upgrade **Project No. CP0093** **\$306,350**

Timeframe: Project Complete except for punchlist items and final payment

The wireless backhaul or point-to-point microwave radio network connects the radio sites used by the TRWC into a network. The radio signals received from the radio sites are transported to a central location for processing and then transported back to each radio site for transmission to field units. The former equipment in this network was obsolete and on best-effort support by the manufacturer and utilized technology that was obsolete and inefficient in transporting the data to and from the radio sites. The new wireless backhaul equipment will transport the signals with technology that matches the other network components, improving efficiency. The total project cost was \$612,700, with the cost shared equally between the TRWC members (including the City of Mesa) and the City of Mesa (Mesa pays about 87.5% of the total project cost). [This purchase was approved for the TRWC Administrative Manager by the Mesa City Council at their May 8, 2017, meeting.](#) The completion of the punchlist items and final payment are forecast for September and October, 2018, respectively.

Radio Sites Emergency Power Lifecycle Upgrade **Project No. CP0094** **\$585,000**

Timeframe: two sites annually, July 1, 2018 to June 30, 2023

Each TOPAZ radio site is equipped with an emergency generator to supply electrical power in the event of a commercial alternating current (AC) power failure. Except for a few sites, the generators are at least 15 years old, and several are much older. Because these generators sit outdoors in our desert environment, they need to be replaced periodically to ensure they start and run when there is loss of power. The plan is to replace the emergency generators at two radio sites each fiscal year, beginning in FY18/19, and finishing in FY24/25. This item is budgeted at \$106,200 per year for each of the 5 fiscal years of the replacement plan.

Florence Gardens TOPAZ ISR Site Lifecycle Upgrade **Project No. LF0224** **\$354,000**

Timeframe: July 1, 2018 to December 31, 2018

The Florence Gardens Intelligent Site Repeater (ISR) provides TOPAZ wide-area service to the area around Florence for the City of Mesa Gas Utility Magma Gas Service Area, and the Apache Junction Police Department for communications when transporting prisoners to the Pinal County Jail. The



Capital Plan for FY19/20 to FY26/27

Florence Gardens ISR was put in service in October, 2016, with equipment that was removed from the Thompson Peak site that is over 15 years old. This equipment is obsolete, and will require upgrading to maintain compatibility with the TOPAZ network infrastructure software. [This purchase was approved for the TRWC Administrative Manager by the Mesa City Council at their June 18, 2018, meeting.](#)

TOPAZ Antenna & Transmission Lines Lifecycle Upgrade **Project No. LF0282** **\$472,000**
Timeframe: July 1, 2018 to June 30, 2020

The antennas and transmission lines that carry radio signals between the TOPAZ radio infrastructure and the antennas at each site are over 15 years old and need to be replaced due to their age. This will ensure the TOPAZ network will continue to provide reliable radio coverage for the users of the TRWC. This project is planned for FY18/19 and FY19/20 to spread the cost over two fiscal years.

Internet Protocol Network Routers & Switches Lifecycle Upgrade **Project No. CN0050** **\$415,000**
Timeframe: April 1, 2018 to December 31, 2018

Internet Protocol (IP) network routers and switches direct the communications between the radio sites and the TOPAZ infrastructure. They also redirect those communications if there is a failure in the network that connects the TOPAZ radio sites and infrastructure together. This equipment is eight years old at this time, and is on best-effort support status with the manufacturer. To ensure continued reliable operation of this network, this equipment requires upgrading. The TRWC pays one-half of the \$830,000 total cost of this upgrade. [The acceleration of this lifecycle upgrade project was approved by the TRWC Board of Directors at their September 14, 2017, meeting.](#) [This purchase was approved for the TRWC Administrative Manager by the Mesa City Council at their October 2, 2017, meeting.](#)

Internet Protocol Routers & Switches Expansion **Project No. CP0755** **\$464,525**
Timeframe: October 1, 2018 to June 30, 2019

Internet Protocol (IP) network routers and switches direct the communications between the TOPAZ radio sites and the TOPAZ infrastructure. They also redirect those communications if there is a failure in the network that connects the TOPAZ radio sites and infrastructure together. When the TOPAZ Lifecycle Upgrade was implemented, there were some sites that did not have routers to direct/redirect the radio traffic. In those cases, other network components were configured to provide some of the direction/redirection of the radio traffic, but this is not the best way to implement these capabilities, and it has resulted in some unexpected network behavior and unscheduled impairments to the TOPAZ network. To mitigate these unscheduled impairments to the TOPAZ network, the proper equipment will be installed at all TOPAZ sites to provide full network direction/redirection capabilities for the TOPAZ radio sites.

System-of-Systems Networking **Project No. CP0438** **\$619,500**
Timeframe: July 1, 2018 to June 30, 2019

System-of-systems networking is a method for radio networks such as the TRWC to connect with other similar radio networks to allow handheld and vehicle-mounted radios to “roam” from system to system and utilize the resources in the other system to communicate with users in both the home and visited systems. Possible applications of this type of networking would be for the TRWC to network with the (Phoenix) Regional Wireless Cooperative, Maricopa or Pinal Counties, or the Arizona Department of Public Safety, for example. This would allow TRWC users to roam into those systems and talk back to units in the TRWC service area and the other system’s service area, and units from the other system to



Capital Plan for FY19/20 to FY26/27

roam into the TRWC service area to utilize resources on the TRWC network to talk back to their system as well as users in radio coverage of the TRWC network. In addition, the system-of-systems networking will enable direct connection to push-to-talk services offered by cellular carriers such as Verizon Wireless and the First Responder Network Authority (FirstNet) through AT&T. The connection to the cellular network(s) will enable nationwide roaming capabilities. Not all system talkgroups (channels) would have this capability. The current technology for system-of-systems networking (Motorola Solutions Inter Sub-Site Interface (ISSI) 8000) allows users to move from one system to the other automatically, without user action. [This purchase was approved for the TRWC Administrative Manager by the Mesa City Council at their June 18, 2018, meeting.](#)

In addition to the initial purchase of the software and licensing already approved, there will be ongoing licensing costs as we connect to other Public Safety voice networks. These costs are forecast in future years.

**Communications Building UPS Battery Lifecycle Replacement Project No. CP0698 \$35,400
Timeframe: April 1, 2019 to June 30, 2019**

The City of Mesa Communications Building includes an Uninterruptible Power Supply (UPS) that keeps critical equipment operational during a power failure while the building emergency generators are starting. This UPS relies on batteries to store the energy required to keep the critical electronic systems functioning without interruption. These batteries require replacement every four years, with the cost shared equally between the TRWC members (including the City of Mesa) and the City of Mesa (Mesa pays about 87.5% of the total project cost).

Unfunded Lifecycle Upgrade Projects

**Communications Building UPS Battery Lifecycle Replacement Project No. CP0698 \$35,400
Timeframe: July 1, 2023 to June 30, 2024, depending on the availability of funds**

The City of Mesa Communications Building includes an Uninterruptible Power Supply (UPS) that keeps critical equipment operational during a power failure while the building emergency generators are starting. This UPS relies on batteries to store the energy required to keep the critical electronic systems functioning without interruption. These batteries require replacement every four years, at a cost of about \$30,000, of which the TRWC pays one-half.

**Radio & Core Sites Battery Backup Next Lifecycle Upgrade Project No. NEW \$240,000
Timeframe: July 1, 2024 to June 30, 2028, depending on the availability of funds**

The batteries that back up the TOPAZ voice radio network and other equipment at the radio sites, the core site at City of Mesa Communications Building, and the TOPAZ backup core site at Mesa Fire Station 219 are just completing their upgrade cycle, but it is prudent to plan for the next upgrade. These batteries have a service life of ten years. Normally, these batteries only power the equipment at a site for less than a minute while the emergency generator starts and picks up the load to power the site equipment. However, these batteries are sized to power the site for a minimum of 4 hours in the event the emergency generator does not start, so there is time to take a portable generator to the site to provide emergency power.



Capital Plan for FY19/20 to FY26/27

Radio & Core Sites DC Power Plant Lifecycle Upgrade **Project No. NEW** **\$320,000**

Timeframe: July 1, 2026 to June 30, 2027, depending on the availability of funds

The equipment at the radio sites is powered by a Direct Current (DC) power plant that allows backup of the site equipment with battery banks as described above. This arrangement also isolates the equipment from disturbances on the incoming Alternating Current (AC) power lines, which keeps the equipment operating during reductions or disruptions (outages) in the AC power supply. This equipment has a typical service life of 15 years. The equipment was last replaced in August, 2011.

Fire Hazard Zone (VHF) Lifecycle Upgrade **Project No. NEW** **\$2,500,000**

Timeframe: July 1, 2031 to June 20, 2032, depending on the availability of funds

The Fire Hazard Zone (VHF) Communications System provides radio infrastructure to communicate with firefighters when working in areas deemed hazard or hot zones. The communications in the hazard or hot zones will be on the Very High Frequency (VHF) radio band (150-174 MHz). Firefighters and on-scene command personnel will communicate direct from radio-to-radio without any infrastructure. The infrastructure implemented by this project will enable the tele-communicators and command personnel in the fire alarm room (dispatch) to monitor the fire ground communications and communicate with on-scene personnel. This infrastructure will also receive and allow response to transmissions initiated when the “emergency” button on the handheld or vehicle-mounted radio is activated. This system provides operational consistency with the fire departments dispatched by the Phoenix Fire Department. While this equipment is not planned to be in service until the middle of calendar year 2017, it is prudent to plan for the upgrade of the equipment in the future. The typical service life for this equipment is fifteen years.

TOPAZ Voice Radio Network Next Lifecycle Upgrade **Project No. NEW** **\$7,500,000**

Timeframe: July 1, 2030 to June 30, 2031, depending on the availability of funds

The TOPAZ voice radio network infrastructure was upgraded in August-September, 2015, with new equipment at the nine simulcast cell radio sites, and the addition of the backup Master Site (DSR) and geo-redundant Prime Site. The typical service life for this equipment is 15 years, so it is prudent to plan for the next lifecycle upgrade.

Unfunded Capital Improvement Projects

TDMA Channel Conversion for Shaw Butte & Florence Gardens **Project No. NEW** **\$463,932**

Timeframe: July 1, 2019 to June 30, 2021, depending on the availability of funds

Two of the three TOPAZ wide-area sites, Shaw Butte and Florence Gardens, have 6 physical radio channels, which limits their voice channels to 5 simultaneous transmissions. The third TOPAZ wide-area site, Thompson Peak, has 11 physical radio channels, which allows a maximum of 10 simultaneous voice transmissions. There have been occasions when users have received busies due to a lack of voice channel capacity on Shaw Butte or Florence Gardens. To remedy this situation, 5 of the 6 physical voice channels at Shaw Butte and Florence Gardens will be upgraded to Time Division Multiple Access (TDMA, also known as P25 Phase II; currently the sites all use Frequency Division Multiple Access (FDMA, also known as P25 Phase I) to enable two simultaneous voice transmissions on each physical radio channel. This will enable 10 simultaneous voice transmissions on all three wide-area sites.



Capital Plan for FY19/20 to FY26/27

Fire Hazard Zone Communications (VHF) Coverage Improvement and Channel Expansion

Project No. NEW

\$2,400,000

Timeframe: July 1, 2019 to June 30, 2027, depending on the availability of funds

This project adds VHF coverage for the existing TRWC fire partner coverage area in Mesa, Gilbert, Apache Junction, and Queen Creek. This coverage expansion will be in response to user identification of areas that deficient in coverage, or if channel capacity is deemed insufficient by the users.

SRPMIC Fire Hazard Zone Communications (VHF) Coverage Expansion

Project No. NEW

\$0

Timeframe: July 1, 2019 to June 30, 2020, depending on the availability of funds

This project adds VHF coverage for the Salt River Pima-Maricopa Indian Community (SRPMIC) *assuming* SRPMIC joins the TRWC. SRPMIC would bear the cost (approximately \$770,000) of this project as part of joining the TRWC and extending VHF coverage into their Community. Two new transmit-receive sites would be added to the existing TRWC VHF network.

FMYN Fire Hazard Zone Communications (VHF) Coverage Expansion

Project No. NEW

\$0

Timeframe: July 1, 2019 to June 30, 2020, depending on the availability of funds

This project adds VHF coverage for the Fort McDowell Yavapai Nation (FMYN). FMYN has a \$130,000 grant to fund the VHF coverage expansion. One new transmit-receive site would be added to the existing TRWC VHF network.

Southeast Queen Creek TOPAZ Expansion Site

Project No. CP0091

\$1,500,000

Timeframe: July 1, 2019 to June 30, 2021, depending on the availability of funds

As population growth in the far southeast valley continues, demand for Public Safety services will grow as well. This will require an additional TOPAZ radio site in the southeast area of Queen Creek to ensure reliable in-building TOPAZ radio coverage (both 800 MHz and VHF). This will require the development of a radio site, including a radio tower, equipment shelter, emergency generator, radio and network equipment, and services, including land. Note: we will look at colocation at an existing radio site or on an existing radio tower, or sharing existing facilities or systems if possible to avoid duplication (“overbuilding”) and constructing facilities if they are not necessary. The need for this site will be validated by a consultant study prior to commencement of the project.

Southeast Apache Junction TOPAZ Expansion Site

Project No. CP0754

\$1,500,000

Timeframe: July 1, 2020 to June 30, 2022, depending on the availability of funds

As population growth in the far east valley continues, demand for Public Safety services will grow as well. This will require an additional TOPAZ radio site in the southeast area of Apache Junction (southeast of Fire Station 264) to ensure reliable in-building TOPAZ radio coverage (both 800 MHz and VHF). This will require the development of a radio site, including a radio tower, equipment shelter, emergency generator, radio and network equipment, and services, including land. Note: we will look at colocation at an existing radio site or on an existing radio tower, or sharing existing facilities or systems if possible to avoid duplication (“overbuilding”) and constructing facilities if they are not necessary. The need for this site will be validated by a consultant study prior to commencement of the project.



Capital Plan for FY19/20 to FY26/27

Appendix – Project Details

Wireless Backhaul (Microwave) Network Lifecycle Upgrade **Project No. CP0093**

	Path	In Service	Notes
Communications Building	Mesa Community College	✓	
Communications Building	Fire Station 219	✓	
Communications Building	Twin Knolls	✓	
Central Radio Site	Falcon Field Airport	✓	
Falcon Field Airport	South Water Plant (Greenfield)	✓	New path. Replaced Mesa Community College to South Water Plant path.
Falcon Field Airport	East Mesa Service Center	✓	
East Mesa Service Center	Twin Knolls	✓	
Twin Knolls	Fire Station 205	✓	
Twin Knolls	Fire Station 219	✓	
Twin Knolls	Apache Junction Police Department	✓	
Twin Knolls	Fire Station 262	✓	
Fire Station 262	Apache Junction Police Department	✓	
Fire Station 219	TRW	✓	
TRW	Mesa Community College	✓	
TRW	South Water Plant (Greenfield)	✓	
Thompson Peak	Fire Station 441 (Rio Verde)	No	New path. Cox Communications cable link inadequate for VHF network.

Internet Protocol Network Routers & Switches Lifecycle Upgrade **Project No. CP0755**

Internet Protocol Routers & Switches Expansion

Location	MX104 Router	Number of EX3400 Switches	Notes
Twin Knolls (TKN-01)	✓	Pending Installation	Switch scheduled for installation July 10, 2018
Communications Building (COM-01)	✓	?	Installed ??
Thompson Peak (THO-01)	✓	1	Installed May 30, 2018
Range Rider (RAN-01)	✓	1	Installed May 30, 2018
Shaw Butte (SHA-01)	✓	Pending Installation	Installed May 30, 2018
Mesa Community College (MCC-01)	✓	1	Installed July 11, 2018
TRW (TRW-01)	✓	1	Installed August 15, 2018
South (Greenfield) Water Plant (SWP-01)	Pending Installation	Pending Installation	Scheduled for installation October 17, 2018
Fire Station 219 (FS219-01)	Pending Installation	Pending Installation	Scheduled for installation October 3, 2018
Communications Building (COM-02)	Pending Installation	Pending Installation	Scheduled for installation October 10, 2018
Central Radio Site (CRS-01)	Pending Installation	Pending Installation	Scheduled for installation September 12, 2018
Falcon Field Airport (FAL-01)	Pending Installation	Pending Installation	Scheduled for installation September 19, 2018
East Mesa Service Center (EMC-01)	Pending Installation	Pending Installation	Scheduled for installation September 26, 2018
Fire Station 205 (FS205-01)	Pending Procurement	Pending Installation	Procurement sched. for City Council 10/1/18
Fire Station 262 (FS262-01)	Pending Procurement	Pending Procurement	Procurement sched. for City Council 10/1/18
Fire Station 264 (FS264-01)	Pending Procurement	Pending Procurement	Procurement sched. for City Council 10/1/18
Florence Gardens	No router - no room	Pending Installation (2 switches)	Schedule for installation TBD
Spare	Available (DC)	Available (DC)	
Spare	Pending Procurement	Available (AC)	Procurement sched. for City Council 9/24/18



Capital Plan for FY19/20 to FY26/27

Fire Hazard Zone Communications System (VHF)

Project No. CP0305

Location	Site Capability		CH1	CH2	CH3	CH4	CH5
			156.2400 MHz	151.1675 MHz	154.8000 MHz	154.2800 MHz	155.6175 MHz
Central Radio Site	Transmit	Receive	X	X	X	X	X
Mesa Community College		Receive	X	X	X	X	X
Fire Station 205		Receive	X	X	X		X
Twin Knolls	Transmit	Receive	X	X	X		X
Range Rider	Transmit	Receive	X	X	X		X
TRW	Transmit	Receive	X	X	X	X	X
Fire Station 262	Transmit	Receive	X	X	X		X
Fire Station 264		Receive	X	X	X		X
South (Greenfield) Water Plant	Transmit	Receive	X	X	X		X
Fire Station 219		Receive	X	X	X	X	X
Shaw Butte	Transmit	Receive	X				
Fire Station 441 (Rio Verde)	Transmit	Receive	X	X			
Talking Stick Resort	Transmit	Receive	Note 1	Note 1	Note 1		Note 1
Shea Blvd & Beeline Highway	Transmit	Receive	Note 1	Note 1	Note 1		Note 1
FMYN Site	Transmit	Receive	Note 2	Note 2	Note 2		Note 2

Note 1: If VHF coverage is expanded for Salt River Pima-Maricopa Indian Community (SRPMIC), it would include 2 additional transmit-receive sites (Talking Stick Resort and Shea Blvd & Beeline Highway).

Note 2: Fort McDowell Yavapai Nation (FMYN) would include an additional site with 2-4 existing channels.



Date: September 6th, 2018
To: Topaz Regional Wireless Cooperative (TRWC) Board of Directors
From: Dale Shaw, TRWC Executive Director
Bob Badgett, TRWC Executive Committee Co-chairman
William Peters, TRWC Executive Committee Co-chairman
Subject: New IGA and Governance Adoption

As previously shared with the TRWC Board of Directors, the TRWC Executive Committee has conducted the review of the draft governance material that was produced by the Governance Working Group. Led by Executive Committee Co-chair William Peters, the Executive Committee formed a working group for the purpose of conducting the review. Many member representatives and staff participated in the process and ultimately forwarded the adapted governance material to each TRWC member agency for legal review.

The final governance material, which is comprised of the attached Second Amended Intergovernmental Agreement (IGA) and associated Governance Agreement, has been fully endorsed by the TRWC Executive Committee and is now recommended for final TRWC Board approval.

The major improvements associated with the new governance material are as follows:

1. Simplified and streamlined governance language and document organization.
2. Allows for adoption of policies & procedures for improved adaptability over time.
3. Updated voting provisions to include super-majority voting on high-impact items.
4. Improved member admission provisions & streamlining of the admission process.

Upon TRWC Board approval, each TRWC member agency will then carry the new governance material forward for their respective governing body approval and official execution by the suggested December 1st 2018 effective date. This will allow for the expected consideration of the member admission of Salt River Pima Indian Community (SRPMIC), which is planned for the December 13th, 2018 TRWC Board Meeting.

When Recorded Return To:

William H. Anger
Engelman Berger, P.C.
3636 N. Central Ave., Suite 700
Phoenix, AZ 85012

**SECOND AMENDMENT TO THE AMENDED AND RESTATED
INTERGOVERNMENTAL AGREEMENT TO PLAN, DESIGN
CONSTRUCT, OPERATE, MAINTAIN AND FINANCE THE
TOPAZ REGIONAL WIRELESS COOPERATIVE NETWORK**

1. Parties. This Second Amendment to the Amended and Restated Intergovernmental Agreement (“Second Amendment”) is entered into by the signatories below. The Amended and Restated Agreement (defined in Section 2.2. below) as amended by the First Amendment (defined in Section 2.3 below) and this Second Amendment shall be collectively referred to as the “Agreement.” The Parties (individually, a “Party”) to the Agreement consist of all of the signatories to the Agreement. Parties to the Agreement shall automatically become Members of the TOPAZ Regional Wireless Cooperative Network (“TRWC”), as detailed in the attached Exhibit A.

2. Recitals.

2.1 The City of Mesa, the City of Apache Junction, the Apache Junction Fire District, the Town of Gilbert and the Town of Queen Creek entered into an Intergovernmental Agreement to Plan, Construct, Operate, Maintain and Finance the TRWC Network, Contract Number 2008-3002-0359 and dated August 7, 2008 (“August 7, 2008 Agreement”).

2.2 The City of Mesa, the City of Apache Junction, the Apache Junction Fire District, the Town of Gilbert, the Town of Queen Creek and the Rio Verde Fire District entered into an Amended and Restated Intergovernmental Agreement to Plan, Construct, Operate, Maintain and Finance the TRWC Network, Contract Number 2008-3002-0359 with an Effective Date of May 1, 2012 (“Amended and Restated Agreement”) that superseded and replaced in its entirety the August 7, 2008 Agreement.

2.3 The City of Mesa, the City of Apache Junction, the Superstition Fire and Medical District (formerly known as Apache Junction Fire District), the Town of Gilbert, the Town of Queen Creek, the Rio Verde Fire District and the Fort McDowell Yavapai Nation entered into a First Amendment to the Amended and Restated Intergovernmental Agreement to Plan, Construct, Operate, Maintain and Finance the TRWC Network, with an Effective Date of February 1, 2016 (“First Amendment”).

2.4 The Amended and Restated Agreement as amended by the First Amendment is valid and enforceable in all respects.

**SECOND AMENDMENT TO THE AMENDED AND RESTATED
INTERGOVERNMENTAL AGREEMENT TO PLAN, DESIGN
CONSTRUCT, OPERATE, MAINTAIN AND FINANCE THE
TOPAZ REGIONAL WIRELESS COOPERATIVE NETWORK**

2.5 The Parties enter into this Second Amendment to replace Exhibit A to the Amended and Restated Agreement with Exhibit A attached to this Second Amendment, among other revisions to the Amended and Restated Agreement as amended by the First Amendment.

2.6 The Parties are authorized to enter into this Second Amendment by the joint exercise of powers provisions of Title 11, Chapter 7, Article 3 (§§ 11-951 et seq.), Arizona Revised Statutes and the authorization of their legislative or other governing bodies.

2.7 The rules and policies governing the TRWC's regulation and management are set forth in a governance document ("Governance Agreement"), which is attached to this Second Amendment as Exhibit A and incorporated herein and made a part of this Second Amendment by this reference. The attached Governance Agreement replaces in its entirety the governance agreement attached to the Amended and Restated Agreement as Exhibit A. Certain terms that are defined in the Governance Agreement are used in the Amended and Restated Agreement, the First Amendment and this Second Amendment. Those terms shall have the same meaning in the Amended and Restated Agreement as amended by the First Amendment and this Second Amendment as such terms are defined in the attached Governance Agreement.

2.8 It is the Parties' intention that the Governance Agreement be enforceable to the same extent as the Agreement. The Governance Agreement shall be subject to amendment as provided herein and shall be valid for the duration of the Agreement. The Governance Agreement is approved by all Parties and shall be binding upon any parties that are admitted hereafter. No additional parties shall be admitted to the TRWC without first agreeing to be bound by the Governance Agreement and the Agreement as are the Parties hereto.

3. Incorporation of Recitals; Date and Duration of Second Amendment.

3.1 The accuracy of the Recitals set forth in Subsections 2.1 through 2.8 above is hereby acknowledged and such Recitals are incorporated into this Second Amendment by this reference.

3.2 The "Effective Date" of this Second Amendment is December 1, 2018. All Parties shall execute this Second Amendment and comply with the requirements of A.R.S. § 11-952, which includes appropriate action by the legislative or other governing body of the Party for the approval of this Second Amendment, determination by the Party's attorney that the Second Amendment is within the powers and authority of the Party, and the proper filing of the Second Amendment.

3.3 The Parties agree to modify and amend the Amended and Restated Agreement as amended by the First Amendment under the same terms and conditions as originally agreed subject to the additional terms and modifications set forth in this Second Amendment. The Parties reaffirm their respective rights and obligations under

**SECOND AMENDMENT TO THE AMENDED AND RESTATED
INTERGOVERNMENTAL AGREEMENT TO PLAN, DESIGN
CONSTRUCT, OPERATE, MAINTAIN AND FINANCE THE
TOPAZ REGIONAL WIRELESS COOPERATIVE NETWORK**

the Amended and Restated Agreement and the First Amendment except as modified by this Second Amendment.

4. TRWC Network Definition.

4.1 When used in the Amended and Restated Agreement as amended by the First Amendment and this Second Amendment the “TRWC Network” shall mean the public safety and general government communications system(s) that is planned, designed, constructed, operated, maintained, and financed by the TRWC and its Members, including all real estate, real property and personal property that is purchased, leased or licensed by the TRWC or owned or licensed by a Member and allowed to be used by TRWC in connection with the TRWC Network. The definition of “TRWC Network” set forth in this Section 4.1 of this Second Amendment replaces the definition of “TRWC Network” set forth in the Amended and Restated Agreement. Unless the context clearly requires otherwise, capitalized terms used herein shall have the same meaning as in the Amended and Restated Agreement.

5. Section 25 of the Amended and Restated Agreement as amended by the First Amendment is deleted in its entirety and replaced with the following new Section 25 that states as follows:

“25. **Waiver of Sovereign Immunity.**

25.1 The Fort McDowell Yavapai Nation agrees to waive its sovereign immunity under this Second Amendment as amended solely and exclusively for the strictly limited purpose of resolving a claim or dispute that may arise with respect to the interpretation or enforcement of the Amended and Restated Agreement as amended by the First Amendment, the Second Amendment or in any other amendments in the future or the Fort McDowell Yavapai Nation’s use of or participation in the TRWC Network. In addition, this Second Amendment shall not become effective until and unless the Fort McDowell Yavapai Nation 1) waives its sovereign immunity solely and exclusively for the strictly limited purpose of resolving a claim or dispute that may arise with respect to the interpretation or enforcement of the Agreement and 2) consents to the jurisdiction of the federal or state courts authorized in Section 22 of the Amended and Restated Agreement solely and exclusively for the strictly limited purpose of resolving a claim or dispute that may arise with respect to the interpretation or enforcement of the Agreement or the Fort McDowell Yavapai Nation’s use of or participation in the TRWC Network.”

6. Conflict of Interest. The Parties understand and acknowledge that this Second Amendment and the Amended and Restated Agreement as amended by the First Amendment may be subject to cancellation under A.R.S. § 38-511 (Arizona’s public employee conflict of interest law) in the event there is a conflict of interest of the type specified in A.R.S. § 38-511 by persons significantly involved in initiating, negotiating, securing, drafting or creating this Second Amendment.

**SECOND AMENDMENT TO THE AMENDED AND RESTATED
INTERGOVERNMENTAL AGREEMENT TO PLAN, DESIGN
CONSTRUCT, OPERATE, MAINTAIN AND FINANCE THE
TOPAZ REGIONAL WIRELESS COOPERATIVE NETWORK**

7. Entire Agreement. The Agreement, including the Governance Agreement attached to this Second Amendment, which replaces in its entirety the Exhibit A that is attached the Amended and Restated Agreement, contains the entire agreement and understanding among the Parties regarding the formation, governance and operations of the TRWC, and supersedes and replaces all related prior negotiations, agreements and proposed agreements, written or oral. Each Party acknowledges that no other Party, nor any agent or attorney of any Party, has made any promise, representation, or warranty whatsoever, expressed or implied, not contained in the Agreement and acknowledges that the Agreement has not been executed in reliance on any promise, representation or warranty not contained in the Agreement. The Agreement shall not be amended, modified or supplemented at any time unless in writing.

8. Governing Law. The Agreement shall be governed by and construed in accordance with the laws of the State of Arizona applicable to contracts executed and intended to be performed entirely within the State of Arizona by residents of the State of Arizona. Any action at law, suit in equity or judicial proceeding for the enforcement of the Agreement or any provision therefore shall be instituted only in the federal or state courts of Maricopa County, Arizona.

9. Amended and Restated Agreement Still Effective. All provisions of the Amended and Restated Agreement as amended by the First Amendment shall remain in full force and effect except as amended by this Second Amendment.

10. Authorized Representatives; Counterparts. Authorized representatives shall sign this Second Amendment on behalf of their respective Parties. This Second Amendment may be signed in counterparts and the original signatures of all authorized representatives and of their attorneys may appear on separate signature pages.

11. Counterparts. This Second Amendment which includes Exhibit A, "TOPAZ Regional Wireless Cooperative Governance Agreement," may be signed in counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

12. Acknowledgment. Each Party acknowledges that it has been provided copies of the Amended and Restated Agreement and the First Amendment, and that by executing this Second Amendment, it agrees to be bound by the Amended and Restated Agreement, as amended by the First Amendment, as amended by this Second Amendment, and to be bound by the Governance Agreement attached hereto.

[Signatures on following pages]

**SECOND AMENDMENT TO THE AMENDED AND RESTATED
INTERGOVERNMENTAL AGREEMENT TO PLAN, DESIGN
CONSTRUCT, OPERATE, MAINTAIN AND FINANCE THE
TOPAZ REGIONAL WIRELESS COOPERATIVE NETWORK**

IN WITNESS WHEREOF, the Parties have caused this Second Amendment to be executed by their duly authorized officers.

TOWN OF GILBERT

Date: _____

By _____
Town Manager

Printed Name

ATTEST:

Town Clerk

Printed Name

APPROVED AS TO FORM and within the powers and authority granted under the laws of Arizona to the Town of Gilbert

Town Attorney

Printed Name

**SECOND AMENDMENT TO THE AMENDED AND RESTATED
INTERGOVERNMENTAL AGREEMENT TO PLAN, DESIGN
CONSTRUCT, OPERATE, MAINTAIN AND FINANCE THE
TOPAZ REGIONAL WIRELESS COOPERATIVE NETWORK**

IN WITNESS WHEREOF, the Parties have caused this Second Amendment to be executed by their duly authorized officers.

CITYOF MESA

Date: _____

By _____
City Manager

Printed Name

ATTEST:

City Clerk

Printed Name

APPROVED AS TO FORM and within the powers and authority granted under the laws of Arizona to the City of Mesa

City Attorney

Printed Name

**SECOND AMENDMENT TO THE AMENDED AND RESTATED
INTERGOVERNMENTAL AGREEMENT TO PLAN, DESIGN
CONSTRUCT, OPERATE, MAINTAIN AND FINANCE THE
TOPAZ REGIONAL WIRELESS COOPERATIVE NETWORK**

IN WITNESS WHEREOF, the Parties have caused this Second Amendment to be executed by their duly authorized officers.

TOWN OF QUEEN CREEK

Date: _____

By _____
Town Manager

Printed Name

ATTEST:

Town Clerk

Printed Name

APPROVED AS TO FORM and within the powers and authority granted under the laws of Arizona to the Town of Queen Creek

Town Attorney

Printed Name

**SECOND AMENDMENT TO THE AMENDED AND RESTATED
INTERGOVERNMENTAL AGREEMENT TO PLAN, DESIGN
CONSTRUCT, OPERATE, MAINTAIN AND FINANCE THE
TOPAZ REGIONAL WIRELESS COOPERATIVE NETWORK**

IN WITNESS WHEREOF, the Parties have caused this Second Amendment to be executed by their duly authorized officers.

SUPERSTITION FIRE & MEDICAL
DISTRICT (FORMERLY KNOWN AS
THE APACHE JUNCTION FIRE
DISTRICT

Date: _____

By _____
Board Chair

Printed Name

ATTEST:

Board Clerk

Printed Name

APPROVED AS TO FORM and within the powers and authority granted under the laws of Arizona to the County of _____

Attorney for the Board

Printed Name

**SECOND AMENDMENT TO THE AMENDED AND RESTATED
INTERGOVERNMENTAL AGREEMENT TO PLAN, DESIGN
CONSTRUCT, OPERATE, MAINTAIN AND FINANCE THE
TOPAZ REGIONAL WIRELESS COOPERATIVE NETWORK**

IN WITNESS WHEREOF, the Parties have caused this Second Amendment to be executed by their duly authorized officers.

CITY OF APACHE JUNCTION

Date: _____

By _____
City Manager

Printed Name

ATTEST:

City Clerk

Printed Name

APPROVED AS TO FORM and within the powers and authority granted under the laws of Arizona to the City of Apache Junction

City Attorney

Printed Name

**SECOND AMENDMENT TO THE AMENDED AND RESTATED
INTERGOVERNMENTAL AGREEMENT TO PLAN, DESIGN
CONSTRUCT, OPERATE, MAINTAIN AND FINANCE THE
TOPAZ REGIONAL WIRELESS COOPERATIVE NETWORK**

IN WITNESS WHEREOF, the Parties have caused this Second Amendment to be executed by their duly authorized officers.

RIO VERDE FIRE DISTRICT

Date: _____

By _____

Its: _____

Printed Name

ATTEST:

Fire Board Clerk

Printed Name

APPROVED AS TO FORM and within the powers and authority granted under the laws of Arizona to the County of Maricopa

Attorney for the Fire Board

Printed Name

**SECOND AMENDMENT TO THE AMENDED AND RESTATED
INTERGOVERNMENTAL AGREEMENT TO PLAN, DESIGN
CONSTRUCT, OPERATE, MAINTAIN AND FINANCE THE
TOPAZ REGIONAL WIRELESS COOPERATIVE NETWORK**

FORT MCDOWELL YAVAPAI NATION

Date: _____

By _____

Printed Name

Printed Name

APPROVED AS TO FORM and within the
powers and authority granted under the laws
of Arizona to the Fort McDowell Yavapai Nation

Fort McDowell Yavapai Nation Attorney

Printed Name

EXHIBIT A
TOPAZ REGIONAL
WIRELESS
Governance
Agreement

**TOPAZ REGIONAL WIRELESS COOPERATIVE
("TRWC") GOVERNANCE AGREEMENT**

TABLE OF CONTENTS

RECITALS

DEFINITIONS

TRWC STRUCTURE

FINANCIAL MANAGEMENT

TRWC ASSETS AND OWNERSHIP

INSURANCE

OPERATIONAL CONTROL AND DUTIES (PROGRAMMING AND CAPABILITIES)

SERVICES

WARRANTY DISCLAIMER

MAINTENANCE

GENERAL PROVISIONS

RECITALS

A. The TRWC is formed for the purpose of improving communications and operations among participating Public Safety and General Government Service Entities.

B. This Governance Agreement establishes (1) an organizational and management structure for ongoing Network administration, planning, operation, and maintenance; and (2) a budgeting and accounting process to allocate costs among Members, Participants and Associates for the Network's operation and maintenance.

C. The Members further desire to provide a process for admitting other Public Safety and General Government Service Entities to join and participate in the TRWC pursuant to the terms and conditions of this Governance Agreement.

D. The TRWC's primary focus will be meeting the operable and interoperable communication needs of Public Safety and General Government Service Entities.

E. The Board of Directors shall govern the TRWC's continued development and operations by adhering to the following principles:

- Connect participating regional systems to support operational and inter-operational roaming to a TRWC adopted performance standard.
- Seek funding where appropriate to grow Network capacity and improve connectivity for shared Network use.
- Conduct multi-regional system strategic planning taking into consideration federal, state, tribal community, county and local plans.
- Adopt a Network cost recovery model(s) that encourages shared infrastructure, costs, and resources.
- Proactively work on regional and national initiatives in areas of mutual concern, benefit, or interest within the scope of this Governance Agreement.
- Develop a Network system to coordinate technology and operational plans with other participating regional systems.

1. DEFINITIONS

The following capitalized words and terms shall have the following meanings when used in this TRWC Governance Agreement (this “Governance Agreement”). Words and terms used in the singular shall include the plural, and the plural shall include the singular, as the context may require. Unless the context otherwise requires, the following terms mean:

<u>TERM</u>	<u>DEFINITION</u>
Administrative Manager	The entity selected by the Board pursuant to Subsection 2.3 of this Governance Agreement that is responsible for TRWC administration, day-to-day operations and financial management whose powers and duties are more specifically set forth in Subsection 2.3.1 of this Governance Agreement.
Alternate Representative	One or more persons who have been designated by a Member to serve as their substitute representative and have the authority to act on the Member’s behalf for TRWC matters. The procedures and rules governing the appointment and service of a Member’s Representative and Alternate Representative shall be established by the TRWC Policies and Procedures.
Applicant	Any entity seeking TRWC membership.
Associate	A non-Member entity authorized by the Board to use the Network in situations and circumstances as specifically set forth in Subsection 2.1.1.
Amended and Restated IGA	The Amended and Restated Intergovernmental Agreement to Plan, Design, Construct, Operate, Maintain, and Finance the Topaz Regional Wireless Cooperative Network, recorded with the Maricopa County, Arizona Recorder on December 26, 2012 at Instrument Number 20121173433, as amended.
Board of Directors (“Board”)	The governing body of the TRWC whose duties are more specifically set forth in Subsection 2.2.
Claims	Claims and lawsuits, including claims, demands, losses, liability, damages, payments, judgments, costs, expenses (including but not limited to reasonable attorney’s fees) incurred through all appeals.
Conditional Participants	A non-Member entity authorized by the Board or the Executive Director to use the Network for special events, tactical situations, emergency circumstances, or for other purposes subject to the terms and conditions more specifically set forth in Subsection 2.1.3.
Encryption Services Manager	As authorized by the Board, an entity responsible for the management of encryption keys and process whose powers and duties are more specifically set forth in Subsection 2.3.4.

Encryption Services Operator	As authorized by the Encryption Services Manager or the Board, an entity responsible for executing the activities of the encryption management services over a specific area.
Executive Committee	The committee established by the Executive Director responsible for producing and/or evaluating TRWC proposals and recommendations as necessary, prior to submission to the Executive Director and Board.
Executive Director	The chief executive officer responsible for oversight of TRWC and Network activities at the direction of the Board as more specifically set forth in Subsection 2.3.6.
Final Budget	The Final Budget adopted by the Board for each fiscal year as more specifically set forth in Subsection 3.2.
Fiscal Year	The twelve (12) month accounting period for budgeting and expenditure reporting that commences on the first day of July and ends on the thirtieth day of June, unless otherwise agreed to by the Board.
General Government Service Entities	All public sector entities or departments whose primary responsibility is providing residents with services other than Public Safety services.
General Government Personnel	All employees, contractors or other individuals that provide work for General Government Service Entities.
Good Standing	A Member who is in full compliance with the terms and conditions of this Governance Agreement.
Impact Study	Evaluation of impacts to the Network and Members resulting from additional or expanded use of the Network.
Interoperability	The ability of emergency responders to communicate among jurisdictions, disciplines, and levels of government, as needed and as authorized.
Interoperability Participant	A non-Member entity authorized by the Board to use the Network for the purpose of participating in intermittent interoperable situations or circumstances as more specifically set forth in Subsection 2.1.2.
Member	Any entity that executes the Second Amendment and becomes a Party to the Agreement as defined in the Second Amendment.
Member's Equity	The Member's proportionate share of TRWC Capital Equity as more specifically set forth in Subsection 3.4.

Member's Personal Property	A Member's personal property including, without limitation, all frequency licenses, equipment, hardware and software that the Member owns, and may lease or license to the TRWC as more specifically set forth in Subsection 4.1.2.
Member's Real Property	A Member's real estate, real property and fixtures thereto, including without limitation real estate, buildings, structures, towers, and generators that the Member owns, and may lease or license to the TRWC as more specifically set forth in Subsection 4.1.1.
Member Retained Property	The Member's Real Property and Member's Personal Property that will continue to be owned by individual Members and not be included as part of the Member's Equity.
Network	The Public Safety and general government communications system(s) that is planned, designed, constructed, operated, maintained, and financed by the TRWC and its Members, including all real estate, real property and personal property that is purchased, leased or licensed by the TRWC or owned or licensed by a Member and allowed to be used by TRWC in connection with the TRWC Network.
Network Administrator	As authorized by the Board, the entity that is responsible for the technical operations of the Network and whose powers and duties are more specifically set forth in Subsection 2.3.2.
Network Equity	The total amount of all the Member Equity in the Network as of the most recent quarterly equity statement produced by the Administrative Manager.
Network Manager	As authorized by the Board, an entity responsible for providing operations and maintenance for a defined portion of the Network whose powers and duties are more specifically set forth in Subsection 2.3.3.
Network Partner	Other governmental or other regional communication systems that have entered into a written agreement with the TRWC.
Network Resource Plan	A plan document that describes available Network resources that users can access to carry out their communications. This document will be used to allocate and manage resources on the Network, and in the development of radio programming templates.
Network Resource Priorities	The priorities assigned to Network resources pursuant to Subsection 7.4.4.1., (see Network Resource Plan) such as Talkgroups or physical radio frequency channels to ensure the most urgent communications receive the highest priority in the Network.

Network Services	All Network Services provided by the TRWC including: services related to Talkgroups, feature sets, encryption usage, priorities, roaming and any other services related to the Network System.
Network System	The collection of devices, software, hardware, technologies, facilities, towers or other devices or structures that provide TRWC voice and data communications capability for the Network.
New Member Special Assessment	The special assessment a new Member may be required to pay upon joining the TRWC pursuant to Subsection 3.3.4.1.
Numerical Vote	Each Member has one vote for every item brought to the Board for a vote.
Parties	All parties to the Agreement as defined in the Second Amendment.
Party	Any individual signatory that executes the Second Amendment and becomes a Party to the Agreement as defined in the Second Amendment.
Public Safety	The welfare and protection of the general public typically performed by Public Safety Agencies.
Public Safety Agencies	All local, county, state, tribal community and federal law enforcement, fire and medical services, emergency management and disaster preparedness agencies whose purpose and function, at least in part, is to enhance or maintain Public Safety.
Representative	The person designated by a Member to act on behalf of the Member on all matters concerning the TRWC as more specifically set forth in Subsection 2.2.1.
Special Assessment	Fee assessed by the Board to pay the cost of projects, or unforeseen expenses as more specifically set forth in Subsection 3.3.3. Each Special Assessment may use a unique cost distribution method.
Subscriber Unit	Any device authorized for use on the Network.
Super-Majority	A super-majority Vote only passes if both of the following occur: 1) the affirmative vote of a majority of those Board members present; and 2) the affirmative votes must represent at least eighty percent (80%) of Network Equity as more specifically set forth in Subsection 2.2.11.
Talkgroup	A defined organizational grouping of radio users who need to communicate with one another.

TOPAZ Regional Wireless Cooperative (“TRWC”)	The consortium that was formed by the Parties to jointly and cooperatively plan, design, construct, operate, maintain, and finance the Network.
TRWC Assets	The real and personal property that the TRWC owns, leases or licenses except for Member Retained Property.
TRWC Capital Equity	TRWC Capital Equity is based on the following: <ul style="list-style-type: none"> (1) The amount paid for TRWC capital additions, upgrades or replacements including real estate, real property and other property purchased by the TRWC; and (2) Capital contributed by Members to the TRWC. It does not include Member Retained Property or fees paid by Members that are a Member’s share of operation and maintenance costs.
TRWC Net Position	The total TRWC Assets, minus TRWC liabilities as reported in the TRWC financial statements.
TRWC Policies and Procedures	The policies and procedures that have been adopted by the Board.
User Working Group	As established by the Board pursuant to Subsection 2.2.12., a group (such as fire fighters, police officers or General Government Personnel) that meets to: (1) discuss or provide operational or field input regarding Network use and performance; (2) share knowledge and experience; (3) receive input from Member agencies, industry providers or TRWC management (or TRWC management designee); and (4) conduct other related activities.
Working Day	A calendar day other than Saturday, Sunday or a legal holiday in the State of Arizona.

2. TRWC STRUCTURE

2.1. Members

The TRWC membership shall be composed of the Members and any other Entity (defined below) that is admitted in accordance with Subsection 2.1.5. “Entity” as used in this Subsection 2.1. means any city, town, county, state, tribal community, fire district or other governmental entity approved by the Board. A municipal county or state agency department or division does not constitute a separate Entity for Membership purposes. A municipal, county or state agency, department or division shall be represented by its corresponding city, town, county, state, tribal community, or separate entity. Each city, town, county, state, tribal community, fire district or separate Entity shall constitute one voting Member of the TRWC.

2.1.1. Associates

An Entity may become an Associate if the Entity: (1) is under contract to a Member that uses the Network to provide Public Safety or general government services and is authorized by the Board to use the Network to support the contracted activities, or supports an existing Member; and (2) is compliant with the conditions as set forth by the Board, this Governance Agreement, and any other applicable agreements. Associates have no TRWC voting rights or representation on the Board or the Executive Committee, but may have a delegate on other TRWC committees as authorized by the Board. Subject to the Board’s approval, the Administrative Manager may assess fees and costs, including “in kind” non-monetary compensation, to an Associate in an amount determined by the Board.

2.1.2. Interoperability Participants

An Interoperability Participant may use the Network for intermittent interoperable situations, if authorized by the Board, and subject to: (1) the conditions imposed by the Board; (2) this Governance Agreement; and (3) any other applicable agreements. Interoperability Participants shall have no TRWC voting rights or representation on the Board or any Board committees. The Administrative Manager, subject to the Board’s approval, may assess fees and costs including “in kind” compensation against an Interoperability Participant in an amount determined by the Board.

2.1.3. Conditional Participants

As a Conditional Participant, a non-Member Entity may use the Network for (1) special events; (2) tactical situations; (3) emergency circumstances; or (4) any other circumstances as authorized by the Board. Conditional Participants have no TRWC voting rights or representation on the Board, or any Board committees. The Conditional Participant’s use of the Network is subject to any conditions imposed by the Executive Director or the Board, and such conditions may include, without limitation, assessment of fees and costs including “in kind” non-monetary compensation to a Conditional Participant in an amount determined by the Board. Notwithstanding anything to the contrary in this Subsection 2.1.3., the Executive Director may authorize the addition of a Conditional Participant without first obtaining Board approval, but continuation of the Conditional Participant’s Network use and any conditions imposed by the Executive Director must be approved or disapproved by the Board at their next meeting.

2.1.4. Network Partner

Subject to Board approval, the TRWC may enter into individualized agreements with Network Partners to share infrastructure, expand coverage, manage costs, or for other purposes which advance the interests of or enhance Public Safety.

2.1.5. Member Admission and Approval

Any governmental entity may apply for TRWC membership. The Board, at its sole and absolute discretion, may admit an Applicant as a Member upon completion of all the following:

- The Applicant's written request for TRWC membership that is approved by the Board.
- The Applicant's executing an agreement with the TRWC that specifies the fees and costs the Applicant shall pay the TRWC pursuant to Subsection 2.1.5.1.
- The Applicant meeting all conditions imposed by the Board and this Governance Agreement.
- The Applicant executing a Counterpart of the Second Amendment to the Amended and Restated Intergovernmental Agreement to Plan, Design, Construct, Operate, Maintain and Finance the Topaz Regional Wireless Cooperative Network ("Second Amendment") as may be amended and becoming a Party to this Governance Agreement as may be amended.
- The Applicant must qualify under the criteria set forth under Subsections 2.1. or 2.1.5.1.
- If the Applicant is a federally recognized Indian Community, Indian Nation, Indian Tribe or other Indian entity (collectively, "Indian Community"), such Applicant must (1) execute a counterpart to the Second Amendment that consents to a limited waiver of its sovereign immunity as follows: "[name of Indian Community] agrees to waive its sovereign immunity under this Second Amendment as amended solely and exclusively for the strict limited purpose of resolving a claim or dispute that may arise with respect to the interpretation or enforcement of the Amended and Restated Agreement as amended by the First Amendment, the Second Amendment or in any other amendments in the future or [name of Indian Community's] use of or participation in the TRWC Network" or in another form required by the Board and that consents to the jurisdiction of the federal or state courts authorized in the Second Amendment and (2) provide the Board a resolution executed by the tribal council or other governing body of such Applicant in a form approved by the Board that provides the limited waiver, as stated above, of such Indian Community's sovereign immunity as required by the Board and consenting to the jurisdiction of the federal or state courts authorized in the Second Amendment.

2.1.5.1. Evaluation Factors

The Board has the sole and absolute discretion to either summarily deny or consider Applicants for Membership status. If the Board elects to consider an application, an Impact Study shall be

completed as directed by the TRWC. The Applicant shall be responsible for any costs associated with the Impact Study unless the TRWC directs otherwise.

After completion of the Impact Study, the Executive Director shall forward to the Board for approval a written recommendation that includes financial and Network operational impact statements.

The TRWC will evaluate all requests giving the highest priority to Public Safety. The TRWC will evaluate requests for new Membership using the Impact Study factors as referenced in the TRWC Policies and Procedures.

2.2. Board of Directors

The Board governs the TRWC. The Board establishes TRWC policy, develops and maintains a long-range capital budget, develops and adopts an annual budget, establishes funding, assesses fees, approves Membership, and exercises any other authorized powers and duties. The Board may exercise such other powers and duties as authorized under this Governance Agreement. The Board must act only in accordance with this Governance Agreement and all applicable laws.

2.2.1. Representatives

The Board must consist of only Members. The Board Representatives must be police chiefs, fire chiefs, chief information officers (CIO), chief financial officers (CFO), city managers, county managers, State of Arizona department directors, regional agency directors or other positions with executive level authority. A Member must be in Good Standing before that Member's Representative is authorized to vote on any matter at a Board Meeting.

The procedures and rules governing the appointment and service of a Member's Representative and Alternate Representatives shall be established by the TRWC Policies and Procedures.

2.2.1.1. Removal or Replacement

A Member may replace or remove its Representative or Alternate Representative at any time by giving written notice to the Executive Director. The removal or replacement of a Representative or Alternative Representative is effective when the Executive Director receives the written notice of such removal or replacement.

2.2.2. Chair and Vice Chair

The Board shall elect one of its voting Member's Representatives as Chair. The Chair shall be the presiding officer of the Board, shall serve a two-year term, and remain a full voting Member Representative.

The Board shall elect one of its voting Member's Representatives as Vice-Chair. The Vice-Chair shall execute the duties of the Chair during the absence or disability of the Chair.

During the absence or disability of the Chair and Vice-Chair, the Board shall elect a temporary presiding officer from the attending Board Members' Representatives.

2.2.3. Meetings

The Board shall meet quarterly except to the extent that the Board determines to meet more or less frequently.

2.2.4. Special Meetings

A Board Member, with approval of the Chair, may call a special meeting of the Board upon a minimum of five (5) Working Days' notice to the other Board Members. In the event of an emergency, a meeting may be scheduled and noticed with less than five (5) Working Days' notice, provided notice is given to the Board Members in compliance with Arizona Open Meetings Law and a quorum is present.

2.2.5. Notice and Agenda

The Executive Director shall prepare the notice, agenda and minutes of Board meetings. Notwithstanding anything to the contrary in this Governance Agreement, a Member may add an item to be considered by the Board to the agenda by providing written notice to the Chair and the Executive Director one-hundred twenty (120) hours before the meeting. In emergency situations, items may be added no later than twenty-four (24) hours before the meeting to ensure compliance with the Arizona Open Meetings law. The Executive Director must provide a Board meeting notice and agenda to each Member with at least as much notice as is required to the public under Arizona law. For any agenda item requiring Super-Majority approval, the Executive Director shall specifically reference that such agenda item requires Super-Majority approval.

2.2.6. Quorum

A quorum is required to conduct business. To constitute a quorum, a majority of the total number of the Board of Directors from Members in Good Standing must be present.

2.2.7. Attendance

Unless the Board Chair otherwise directs upon prior notice, a Member may attend and participate in a meeting in person, by teleconference or video-conference.

2.2.8. Rules

The Board shall establish rules for its proceedings. An item not specifically covered by the rules established by the Board or by law shall be decided by the presiding officer using the latest standard edition of Robert's Rules of Order.

2.2.9. Voting Methodology

Except as otherwise provided in this Subsection, each Member's Representative or Alternative Representative attending a meeting of the Board is required to vote on all matters to be decided by the Board at that meeting. A vote excused by applicable federal or state conflict of interest laws or any other laws shall not be counted as a vote, neither affirmative nor negative. If a Member's Representative or Alternative Representative that is attending the meeting refuses to vote on an issue without excuse as set forth in the previous sentence of this Subsection 2.2.9., such Member's Representative or Alternative Representative will be deemed to have voted no on

the matter. A Member's voting right is suspended anytime the Member is not in Good Standing.

2.2.10. Numerical Voting

All matters shall be decided by a Numerical Vote. The Board Chair and Vice Chair are voting members on all items. A Numerical Vote shall pass by the affirmative vote of a majority of the Board present and voting, except those matters requiring Super-Majority approval. In case of a tie in votes on any motion, the motion then fails.

2.2.11. Super-Majority Voting

The following items will require Super-Majority voting:

- Adding a new Member;
- Removing a Member;
- Amending this Governance Agreement;
- Annual Budget Adoption;
- Cost distribution methodology;
- Approving capital projects;
- Awarding a contract in excess of 10% of the TRWC's overall budget;
- Selecting or removing the Administrative Manager;
- Selecting or removing the Network Administrator;
- Selecting or removing the Executive Director; and
- Dissolving the TRWC.

Any Super-Majority items added, changed or removed from the foregoing list must be approved with a Super-Majority vote of the Board. A Super-Majority vote shall pass only when both of the following occur: (1) an affirmative vote by a majority of the Board of Directors present; and (2) an affirmative vote by the Board of Directors present who represent at least 80% of the Network Equity.

2.2.12. Advisory Committees

The Executive Director will establish the following: the Executive Committee, the User Working Group, and any additional advisory or ad hoc groups or sub-committees as needed. Unless otherwise determined by the Executive Director, each advisory committee shall choose its officers comprised of co-chairpersons, one of which must be a fire representative and the other a law enforcement representative, and shall establish key performance indicators and rules for conducting meetings and representation. The Executive Director or designee shall be a participant on each committee. The committees will coordinate all activities through the Executive Director and will report to the Board as determined by the Executive Director.

2.3. Administrative Management

2.3.1. Administrative Manager

The Board must select an Administrative Manager, which shall have powers and duties as listed under this Subsection 2.3.1. provided that the Administrative Manager existing immediately prior to the Effective Date of this Governance Agreement shall continue as Administrative Manager for a four-year term commencing on the Effective Date of this Governance Agreement. Except as otherwise determined by the Board, the Administrative Manager shall serve a four-year term unless the Administrative Manager resigns or is removed by the Board pursuant to a Super-Majority vote prior to expiration of such term. If the Board fails to take a vote to elect an Administrative Manager during the six-month period immediately prior to the expiration of the Administrative Manager's four-year term, the Administrative Manager shall then automatically be deemed elected by the Board for an additional four-year term. Upon resignation, termination or no later than six months prior to expiration of the Administrative Manager's term, an ad hoc group of three to five Board Members appointed by the Board Chair shall review and recommend one or more Administrative Manager candidates for consideration by the Board. Unless otherwise determined by the Board, the Administrative Manager shall give at least twelve months' prior written notice to the Board before resigning as Administrative Manager. The Administrative Manager may serve any number of successive terms and must be elected by a Super-Majority vote. Except as limited by this Governance Agreement, the Board may delegate additional powers and duties to the Administrative Manager as necessary to assure cost effective and efficient delivery of services.

The Administrative Manager is responsible for day-to-day TRWC administrative responsibilities that include, but are not limited to: (1) procuring resources, materials, and services; (2) establishing functions such as accounting, budgeting, contracting, purchasing, and inventory; (3) providing reports; and (4) performing other duties as assigned and identified in the TRWC Policies and Procedures.

2.3.2. Network Administrator

The initial Network Administrator shall be as identified in a Board resolution in conjunction with this Governance Agreement. The Board must select a Network Administrator, which shall have powers and duties as listed under this Subsection 2.3.2. The same entity may serve as Administrative Manager and Network Administrator. Except as otherwise determined by the Board, the Network Administrator shall serve a four-year term unless the Network Administrator resigns or is removed by the Board pursuant to a Super-Majority vote prior to expiration of such term. If the Board fails to take a vote to elect a Network Administrator during the six-month period immediately prior to the expiration of the Network Administrator's four-year term, the Network Administrator shall then automatically be deemed elected by the Board for an additional four-year term. Upon resignation, termination, or no later than six months prior to expiration of the Network Administrator's term, an ad-hoc group of three to five Board Members appointed by the Board Chair shall review and recommend one or more Network Administrator candidates for consideration by the Board. Unless otherwise determined by the Board, the Network Administrator shall give at least twelve months' prior written notice to the Board before resigning as Network Administrator. The Network Administrator may serve any number of successive terms and must be elected by a Super-Majority vote.

The Network Administrator is responsible for network operations, planning, monitoring, optimization, management, coordination, technical implementation and other duties as assigned and identified in the TRWC Policies and Procedures.

2.3.3. Network Manager(s)

A Network Manager is responsible for: (1) the day-to-day operations and maintenance of an assigned portion of the Network to comply with policies, procedures, and performance standards; and (2) performing other duties as assigned and identified in the TRWC Policies and Procedures.

2.3.4. Encryption Services Manager

The Encryption Services Manager is responsible for managing encryption keys and processes, and performing other duties as assigned by the Board or as identified in the TRWC Policies and Procedures.

2.3.5. Encryption Services Operator(s)

The Encryption Services Operator is responsible for performing encryption management services as delegated by the Encryption Services Manager and performing other duties as assigned by the Board, or as identified in the TRWC Policies and Procedures.

2.3.6. Executive Director

2.3.6.1. Responsibilities

The Executive Director will report to the Board. The Executive Director has day-to-day TRWC administrative responsibilities that include, but are not limited to: (1) coordinating efforts of the Board, Executive Committee and advisory group members; (2) preparing and maintaining meeting notices, agendas and minutes; (3) managing the overall TRWC administrative organizational structure and staffing; (4) maintaining the TRWC Policies and Procedures in coordination with the Board; (5) providing reports; and (6) performing other duties as assigned and identified in the TRWC Policies and Procedures.

2.3.6.2. Executive Director Selection

The Board Chair shall appoint a committee of at least three Members with the assistance of the Administrative Manager, to recommend an Executive Director to perform TRWC administrative duties. The Board shall vote to either approve or not approve such Executive Director recommendation. The Executive Director shall serve until he or she resigns or is removed by the Board in the Board's sole and absolute discretion. Notwithstanding the foregoing, the Executive Director existing immediately prior to the Effective Date of this Governance Agreement shall continue as Executive Director commencing on the Effective Date of this Governance Agreement until he or she resigns or is removed by the Board in the Board's sole and absolute discretion.

3. FINANCIAL MANAGEMENT

3.1. General

The Administrative Manager, under the direction of the Executive Director, is responsible for all TRWC financial management responsibilities including, but not limited to, budget development, rates and fees, Member billing, vendor invoicing, procurement, financial reporting, grant management, and financial audits.

The Administrative Manager is responsible for the preparation and fair presentation of the financial statements in accordance with generally accepted accounting principles (“GAAP”) in the United States of America as applied to governmental units; this includes the design, implementation, and maintenance of budgets, accounting records, and internal controls.

Each year, the Board must approve an annual budget. The budget shall consist of the following accounts; (1) operations and maintenance; (2) capital; and (3) any other accounts determined by the Board.

3.2. Budget and Financial Planning and Reporting

No later than October 31st of each year, unless the Board directs a different date, the Executive Director, in cooperation with the Administrative Manager, shall prepare and present to the Executive Committee, a (1) preliminary budget for the subsequent Fiscal Year and (2) a five-year financial forecast (“FYFF”). Unless the Board otherwise directs a different approval date by Super-Majority Vote, no later than March 1st of each year, the Board must approve (A) the Final Budget for the subsequent Fiscal Year; and (B) a FYFF. The Final Budget must include all operational and maintenance costs, planned capital costs, and cost distribution methodologies for the upcoming year. The FYFF must include operational and maintenance costs and capital costs for the five (5) years following the Final Budget period. The FYFF is provided for informational purposes only, will assist in preparing the annual budgets for future years, and is subject to change. After presentation to the Executive Committee, the proposed Final Budget, FYFF, and presentation of significant issues and financial assumptions shall be forwarded to the Board for approval. A copy of the adopted budget must be in writing and available to the Members.

After the end of each Fiscal Year, the Administrative Manager, under the direction of the Executive Director, must submit to the Executive Committee and Board a summary of financial activity, including a comparison of budgeted expenditures to actual expenditures.

3.3. Funding

3.3.1. General

The Members shall fund the TRWC through fees, Special Assessments, grants, or any other mechanism as determined by the Board. It will be each Member’s responsibility to take the appropriate steps in conformity with state and local laws to ensure that it appropriates sufficient funds to cover its obligations under this Governance Agreement. Members will remit funds to the Administrative Manager on a monthly basis upon receipt of an invoice. Payment of all invoices is due thirty (30) days from the invoice date. Any Member with invoices that are

unpaid for 60 days from the invoice date will be considered not in Good Standing if the delinquent Member fails to become current on its payment of the unpaid invoice within 10 days after notice from the Administrative Manager. The Administrative Manager must also notify the Executive Director in writing of any Member's payment delinquency.

In the event a Member disputes an amount billed, it shall do so in writing to the Executive Director and shall specify the reason upon which the dispute is based within thirty (30) days after service of an invoice. The Member shall pay the disputed amount, but may do so under protest. After the dispute has been filed pursuant to the conflict resolution provisions of Subsections 10.3.1. through 10.3.3. of this Governance Agreement and Sections 17.1. through 17.6. of the Amended and Restated IGA, and the disputed amount has been paid, the dispute shall be handled in accordance with the conflict resolution terms and conditions outlined in Subsection 10.3. of this Governance Agreement and Sections 17.1. through 17.6. of the Amended and Restated IGA.

If a Member withdraws from the Network, that Member shall be responsible for all unpaid fees and entitled to any fee refunds applicable for time of the Member's membership.

It shall be the responsibility of each Member to bill and collect from its individual users such user charges and cost recovery charges as are required in the payment of the amounts due under this Governance Agreement.

Each Party recognizes that the performance by the Parties under this Governance Agreement may be dependent upon the appropriation of funds to or by that Party. Should any Party fail to appropriate the necessary funds, or default on payments or any other obligations to the TRWC beyond the 30-day cure period set forth in Section 17.1. of the Amended and Restated IGA, the Board may remove and terminate that Party as a Member of the TRWC or require that Member to satisfy any other Board required conditions to continue as a Member. In the event that such Party is terminated or removed as a Member such Member shall forfeit all or a portion of the Member's Real Property and the Member's Personal Property that is used in the Network as determined by the Board in the Board's sole and absolute discretion. Each Party agrees to give notice to the other Parties as soon as reasonably possible after the unavailability of funds comes to the Party's attention. Except as otherwise provided in this Subsection 3.3.1., the ownership of personal property and real property that is used in the Network shall be governed by Section 4 of this Governance Agreement.

3.3.2. Member Fees, Payments, Allocations

Each Member agrees to pay fees assessed upon receipt of an invoice as described in Subsection 3.3.1. unless otherwise directed by the Board.

The Portion of the Member Fee for capital projects shall increase TRWC Capital Equity, as established under Subsection 3.4.

3.3.3. Special Assessments

The Board may assess other fees on an as needed basis to: (1) pay the costs of unplanned projects such as disaster recovery or certain extraordinary Claims; (2) pay the costs for uninsured casualty losses, regulatory fines or insurance deductibles; (3) pay for the use of the Network by an Interoperability Participant, Conditional Participant, Network Partner or

Associate; or (4) pay the costs of special projects or system changes, replacements, expansions, or other items not previously included in the Final Budget. Such changes may not benefit all Members in a proportionate manner. The Board may assess fees proportionately or individually and such fees need not be equal among Members.

3.3.4. Applicant Impact Study Fee

The TRWC may require an Applicant to pay an Impact Study fee to cover the cost of developing an Impact Study that addresses the Applicant's request for TRWC membership and the Applicant's potential effect on the existing infrastructure and Members.

3.3.4.1. New Member Special Assessment

The TRWC may require a new Member to pay their portion of a Special Assessment up to the full cost associated with providing services to the new Member. The new Member Special Assessment may include the cost to provide service to the new Member's Subscriber Units, Network infrastructure investment necessary to increase Network capacity, and other costs deemed necessary to ensure existing Members receive the same services and benefits they received before the new Member joined the Network. The New Member Special Assessment shall be paid in accordance with the terms and conditions established by the Board as part of the membership agreement to join the TRWC.

3.3.4.2 Existing Member Capacity and Coverage Upgrade

If any existing Member(s) make a request for a capacity, coverage and/or performance change or upgrade that is expected to impact the Network coverage or capacity and/or performance of other Members, the Administrative Manager may require such existing Member(s) to pay a Special Assessment to cover the cost of an Impact Study. The Administrative Manager shall provide an analysis and recommendation regarding the existing Member's request for a capacity, coverage and/or performance upgrade and forward the information to the Executive Committee for review and recommendation to the Board for final approval.

3.3.5. Grants

Member(s) may apply individually to obtain grant funding for assessed Network projects. The Board, at its sole and absolute discretion, may accept or deny the use of these grant funds if the Member's grant request is associated with a Network project. The application for or the award of a grant shall not relieve a Member of its obligation to pay, within thirty (30) days of the invoice date, costs billed in accordance with this Governance Agreement. Grant funds will be credited to each Member in proportion to the amount of funding each Member contributed towards the grant project, as grant funds are received. Grant funds credited to a Member will increase the Member's Equity and the TRWC Capital Equity. The Member that is awarded the grant remains responsible for meeting all of the terms, conditions and obligations of the grant.

The Administrative Manager may proceed to obtain grant funding on behalf of the TRWC with approval of the Board. Any matching funds required by a grant towards a Network wide project will be assessed to the Members based on an appropriate allocation method determined by the Board.

3.4. TRWC Capital Equity

TRWC Capital Equity and each Member's Equity will be recalculated when: (1) a new Member joins the TRWC; or (2) an enhancement, expansion or replacement is completed by the TRWC.

If a Member brings assets to the TRWC and the Board accepts the assets on behalf of the TRWC, the Member's Equity will increase based on the value of the assets at the time of transfer to the TRWC.

Assets which are individually owned, as permitted in Section 4, shall not be counted as part of the TRWC Net Position, and the Member(s) owning those assets shall not receive credit towards equity in the Network until those assets become part of the TRWC as described in Subsection 4.3.

3.5. Annual Audit

TRWC financial records may be independently audited as directed by the Board. The Board shall determine the scope of work, budget, and cost allocation for any independent financial audit.

4. TRWC ASSETS AND OWNERSHIP

4.1. Member's Retention of Assets

4.1.1. Real Property

Each Member shall retain any and all right, title, and interest in the Member's Real Property that the Member authorizes or allows the TRWC to use as part of the Network.

Notwithstanding the foregoing, Members shall be permitted to maintain individual ownership over a Member's Real Property, where desired by such Member. Such Member's Real Property may be retained or disposed of by the Member so long as any retention or disposal does not adversely affect the Network. Should the TRWC replace real property that was solely owned by a Member, such Member must be given a reasonable opportunity to pay for such replacement or make other Board approved arrangement so it does not lose ownership over the Member's Real Property.

4.1.2. Personal Property

Each Member shall retain any and all right, title, and interest in the Member's Personal Property that is used by the TRWC in connection with the Network.

Notwithstanding the foregoing, Members shall be permitted to maintain individual ownership over a Member's Personal Property, where desired by such Member. Such Member's Personal Property may be retained or disposed of by the Member so long as any retention or disposal does not adversely affect the Network. If the TRWC replaces a Member's personal property that was solely owned by a Member, the Member must be given a reasonable opportunity to pay for such replacement or make other Board approved arrangement so it does not lose ownership over the Member's Personal Property.

4.2. TRWC's Maintenance of Member Real Property and Member Personal Property

On behalf of the TRWC, the Member and the Administrative Manager must enter into an agreement regarding the conditions concerning the Network's use and maintenance of the Member's Real Property and Member's Personal Property. Otherwise, each Member is responsible for the cost of maintaining its Real Property, including fixtures thereto, and Personal Property that are made part of the Network, to the extent necessary to maintain the operational integrity and capacity necessary to operate the Network. Each Member agrees that it will make all arrangements necessary to allow the Administrative Manager, Network Administrator or Network Manager reasonable access to that Member's Real Property and Member's Personal Property that are part of the Network for the purposes of inspecting, operating, and maintaining the Network. Unless otherwise provided by agreement, prior to exercising the right of inspection provided by this paragraph, the Administrative Manager, Network Administrator or Network Manager shall give the Member, whose property is to be inspected, reasonable notice under the circumstances then existing.

4.3. TRWC Acquired Real and Personal Property

Any and all real and personal property that is purchased by and on behalf of the TRWC shall be included in the TRWC Capital Equity. The Board must approve any transfer of real or personal property by a Member to the TRWC. Any real or personal property that is purchased by or on behalf of the TRWC shall be held jointly and owned in common by the Members. Each Member's ownership interest in the TRWC personal property will be proportionate to the amount of its Member's Equity. The Members agree that any real or personal property jointly purchased for the TRWC's benefit shall be titled and held in the name of the Administrative Manager, even though all financially contributing Members to the purchase shall actually own a percentage share in such real or personal property.

4.4. Sale or Removal of Real and Personal Property Owned by or Used by the TRWC in Connection with the Network

The sale or removal of real and personal property owned by or used by the TRWC in connection with the Network will be addressed and governed by the TRWC Policies and Procedures.

4.5. Liens on Real or Personal Property Used in connection with the Network

If any obligations of a Member issued to finance any real or personal property made a part of the Network are secured by any right, title, interest or lien in or upon such property (a "Finance Lien"), the rights of the TRWC and the Members in and to such property, including the rights to use such property as part of the Network, shall at all times be subordinate and subject to such Finance Lien and the rights of the holder or holders of such Finance Lien. If such financing was obtained after the TRWC was given the right to use the Member's Real Property or Member's Personal Property, then such financing shall provide TRWC the reasonable opportunity to cure any default or non-appropriation to allow the TRWC and its Members continued Network use of such Member's Real Property or Member's Personal Property.

4.6. Actions Must Preserve Tax Exempt Status of Obligations

Neither the TRWC nor any Member will take or fail to take any action with respect to the use and operation of the Network that would adversely affect the tax-exempt status of any obligations issued by any Member to finance any real or personal property that is part of the Network. Without limiting the foregoing, neither the TRWC nor any Member will permit any private business use of the Network where such private business use would cause any Member's obligations to be treated as Private Activity Bonds under the Internal Revenue Code, as amended.

5. INSURANCE

5.1. Real Property

Each Member is responsible to insure, at appropriate and sufficient coverage levels, its Member's Real Property, including fixtures thereto, titled in its own name. Each Member who has leased real property, including fixtures thereto, to be used in connection with the Network is responsible to insure the leased property according to the terms of the lease and at appropriate and sufficient coverage levels.

The Administrative Manager is responsible to insure real property cooperatively purchased or leased for the benefit of the TRWC as directed and at coverage levels approved by the Board. The Administrative Manager also is responsible for insuring, as directed and at coverage levels approved by the Board, all real property used in connection with the Network and that a Member has transferred ownership to the TRWC under this Governance Agreement. Neither the Board nor the Administrative Manager shall be responsible for a loss involving a Member's Real Property.

5.2. Personal Property

Each Member is responsible to insure, at appropriate and sufficient coverage levels, its Member's Personal Property titled in its own name. Each Member who has leased or licensed personal property to be used in connection with the Network is responsible to insure the leased or licensed personal property according to the terms of the lease or license and at appropriate and sufficient coverage levels.

The Administrative Manager is responsible to insure personal property cooperatively purchased or leased for the benefit of the TRWC as directed and at coverage levels approved by the Board. The Administrative Manager is responsible for insuring, as directed and at coverage levels approved by the Board, all personal property used in connection with the Network and that a Member has transferred ownership to the TRWC under this Governance Agreement. Notwithstanding the foregoing, however, any and all personal property that is purchased or owned exclusively by a Member and brought into the Network by that Member shall be insured by such Member at appropriate and sufficient coverage levels. Neither the Board nor the Administrative Manager shall be responsible for a loss involving a Member's Personal Property.

5.3. Claims

Each Party understands and acknowledges that any Claim may be filed for damages resulting from acts or omissions in connection with planning, designing, constructing, operating,

maintaining and financing the Network or that other unforeseen costs and expenses may be incurred in connection with the planning, designing, constructing, operating, maintaining and financing the Network. The Parties agree that any Claim not specifically provided for in this Governance Agreement shall be shared by the Parties in accordance with the cost allocation process set forth in Subsection 3.3.2. at the time the Claim is first served on the TRWC or any Party or the unforeseen Claim was incurred. Each Party shall promptly notify the TRWC and the Administrative Manager upon receipt of any Claim relating to the Network. The Administrative Manager shall take the lead role on behalf of the TRWC in coordinating the investigation and defense of any Claim made in connection with planning, designing, constructing, operating, maintaining or financing the Network. Nothing in this section shall preclude any Party, at its expense, from providing its own legal counsel in connection with any Claim made in connection with planning, designing, constructing, operating, maintaining or financing the Network. Each Member is responsible to insure its liability relating to its TRWC membership or liability which is not assumed by the TRWC under this Governance Agreement. With regard to any Claim arising out of or relating to the ownership or maintenance of a Member's Retained Property, such Member (as "Indemnitor") agrees to indemnify, defend, and hold harmless the other Members (as "Indemnitees") from and against any Claim, but only to the extent that such Claim results in vicarious/derivative liability to the Indemnitees and are caused by the act, omission, negligence, misconduct, or other fault of the Indemnitor, its officers, officials, agents, employees, or volunteers. The TRWC, Board, Executive Director, Administrative Manager, Network Administrator, Network Manager, and Encryption Services Manager shall not be liable for any Claim arising out of, based upon or attributable to any other Member's failure or omission in effecting or maintaining adequate insurance on such Member's Retained Property.

5.4. Insurance Programs

The Board shall authorize appropriate TRWC insurance coverage to protect the TRWC from risks and potential liability under this Governance Agreement and in connection with planning, designing, constructing, operating, maintaining or financing the Network. The Board shall direct the Administrative Manager to obtain such insurance on behalf of the TRWC. In deciding what insurance coverage and indemnities are appropriate, the Board may elect to self-insure for all or a portion of the risks.

The TRWC, Board, individual Members and the Administrative Manager may use any combination of insurance, excess insurance or self-insurance to satisfy the terms of this Section 5.

6. OPERATIONAL CONTROL AND DUTIES (PROGRAMMING AND CAPABILITIES)

6.1. Network Systems

The Network Administrator shall program, maintain, and manage all Network Systems in a manner consistent with maximizing the operational performance and minimizing the loss or corruption of data. The Network Administrator is responsible for the Network Systems' programming, maintenance, backup and archiving.

6.2. Policies and Procedures

Unless otherwise specified by the Board, the Executive Director shall develop and maintain the TRWC Policies and Procedures in coordination with the Executive Committee. At a minimum, the Executive Director shall review all TRWC Policies and Procedures every two years. Revisions to the TRWC Policies and Procedures must be approved by the Board. The Executive Director may consider specific revisions at any time upon request by any Member Representative or Alternate Representative. Notwithstanding anything to the contrary in this Subsection 6.2., the TRWC Policies and Procedures existing immediately prior to the Effective Date of this Governance Agreement shall continue as the TRWC Policies and Procedures until the Board approves new or amended TRWC Policies and Procedures.

7. SERVICES

7.1. Network Use, Programming and Reprogramming, Encryption

When using the Network each Member, Associate, Interoperability Participant, and Conditional Participant shall abide by all policies, procedures and guidelines established by the TRWC and the terms and conditions of all applicable agreements including, without limitation, this Governance Agreement.

7.2. Interoperability

The TRWC shall support Interoperability among all Members, Associates, Conditional Participants and Interoperability Participants. The TRWC shall follow the National Incident Management System (NIMS) protocols for interoperable communications or such other protocols as may be determined by the Board subsequent to the Effective Date of this Governance Agreement.

7.3. Training

Each Member, Associate, Conditional Participant and Interoperability Participant must ensure that its users are properly trained on the Network capabilities, policies and procedures.

7.4. Requests for Service

7.4.1. Routine Service

The Network Manager or appropriate working group, in coordination with the Executive Director, will establish policies and procedures relating to Network Services that will be provided to the Board for consideration and possible inclusion in the TRWC Policies and Procedures.

7.4.2. Expanded Service

Members requiring or desiring expanded Network Services that may impact the Network must submit these requests in writing to the Network Manager, in coordination with the Executive Director. Examples of such expanded services include, without limitation, requests to: (1) add sites to the Network; (2) increase system performance or coverage; or (3) implement a Network upgrade in order to receive a new feature. Criteria for expanded services will be evaluated by the Impact Study factors as referenced in the TRWC Policies and Procedures.

7.4.3. Emergency Service

The TRWC Policies and Procedures for Network Services must address emergency situations, tactical response to such emergencies, and the decision-making authority for such emergencies. The TRWC Policies and Procedures must include, as part of such policies and procedures, notification requirements. Notwithstanding anything to the contrary in this Subsection 7.4.3., the Executive Director at all times has the authority to provide access to the Network in emergency situations.

7.4.4. Network Resources

Unless otherwise directed by the Board, the Network Administrator, in coordination with the appropriate working group, establishes and approves all Network Resource Plans. These plans are used to develop the radio programming files.

7.4.4.1. Network Resource Priorities

Unless otherwise directed by the Board, the User Working Groups shall establish priority levels for the individual Network Resource Priorities. In general, Network Resource Priorities are assigned highest to lowest as follows: (1) emergency calls; (2) Public Safety; and (3) General Government Service Entities.

8. WARRANTY DISCLAIMER

8.1. Warranty Disclaimer

ALL MEMBERS DISCLAIM ALL WARRANTIES WHETHER WRITTEN, ORAL, IMPLIED OR STATUTORY, APPLICABLE OR RELATING TO THE SERVICES, EQUIPMENT, SUPPLIES, MAINTENANCE OF THE EQUIPMENT, OR OTHER ITEMS PROVIDED UNDER THIS GOVERNANCE AGREEMENT BY ANY MEMBER(S), INCLUDING BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE MEMBERS ALSO HEREBY WAIVE ANY RIGHTS AND REMEDIES TO MAKE A CLAIM INCLUDING, WITHOUT LIMITATION, ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES, FOR ANY REASON WHATSOEVER, BASED ON THE OPERATION AND MAINTENANCE OF THE NETWORK BY THE ADMINISTRATIVE MANAGER, NETWORK ADMINISTRATOR, NETWORK MANAGER(S), ENCRYPTION SERVICES MANAGER, MEMBER OR ANY INDIVIDUAL OR ENTITY.

9. MAINTENANCE

9.1. Subscriber Unit Maintenance and Repair Responsibility

Each Member, Associate, Interoperability Participant, and Conditional Participant is solely responsible for the maintenance and repair of their Subscriber Units.

10. GENERAL PROVISIONS

10.1. Limitations

Subject to applicable law, no Board member shall be liable to the TRWC for monetary damages for any action taken or any failure to take action as a Board Member. To the extent permitted by law, the TRWC shall indemnify any director, officer, Executive Director, Administrative Manager, Network Administrator, Network Manager, Encryption Manager, Encryption Service Operator, Member, Representative, or Alternate Representative (each "Indemnified Party", collectively "Indemnified Parties") from any liability or expense sought or imposed because such person is made party to a proceeding because he/she is a director, officer, Executive Director, Administrative Manager, Member, Representative, or Alternate Representative of the TRWC. No Indemnified Party shall be personally liable to the TRWC or its Members for monetary damages for breach of fiduciary duty as a director, officer, Executive Director, Administrative Manager, Representative, or Alternate Representative; provided, however, that this Subsection 10.1. shall not eliminate or limit the liability of an Indemnified Party to the extent provided by applicable law for (i) the amount of financial benefit received by an Indemnified Party to which the Indemnified Party is not entitled; (ii) an intentional infliction of harm on the TRWC or its membership; (iii) a violation of Section 10-833 of the Arizona Revised Statutes; or (iv) an intentional violation of Arizona law. The limitation of liability provided herein shall continue after the Indemnified Party has ceased to occupy such position as to acts or omissions occurring during such director's term or terms of office, and no amendment or repeal of this Subsection 10.1. shall apply to or have any effect on the liability or alleged liability of any Indemnified Party for or with respect to any acts or omissions of such Indemnified Party occurring prior to such amendment or repeal.

10.2. Dissolution

If the Board determines that it is not feasible or desirable to continue the TRWC activities, then, after complying with applicable federal or state dissolution procedures, assets of the TRWC shall be returned to the Members in proportion to their TRWC Capital Equity.

10.3. Conflict Resolution

10.3.1. Mediation

If a complaint, dispute or controversy (hereinafter complaint) arises between any of the Parties to this Governance Agreement, it is hereby agreed that the complaint shall be brought to the Board for non-binding conflict resolution. The Board shall have the authority to establish appropriate and reasonably prompt procedures to govern the processing of all complaints and an internal conflict resolution process.

The Parties agree that, at any point in the conflict resolution process, the Board may adopt and impose an interim emergency remedy to ensure the continuation of essential communication services until the matter is resolved.

10.3.2. Injunctive Relief

Nothing in this Governance Agreement shall prohibit any Party from seeking injunctive relief for

the preservation of property. In the event any of the conflict resolution procedures are ruled unlawful or made unlawful by statute, the other terms of this Governance Agreement are declared separate and severable and shall remain in full force and effect.

10.3.3. Arbitration

In the event a dispute is not resolved pursuant to Subsection 10.3.1., the Parties agree to use arbitration to the extent required under A.R.S. § 12-133 and A.R.S. § 12-1518.

10.3.4. Cooperation

10.3.4.1. Generally

The Parties agree to make, sign and deliver all documents and to perform all acts that are necessary to fully carry out the terms of this Governance Agreement. Each of the Parties shall fully cooperate with and assist one another in obtaining all licenses, permits, authorizations, approvals and consents required in the performance of this Governance Agreement. Nothing in this Governance Agreement shall be construed or interpreted to require the TRWC to be responsible for dispatching or otherwise causing its Members to respond to an event within another Member's jurisdiction.

10.3.4.2. Obligation to Defend Governance Agreement

In the event any legal proceeding is instituted challenging the authority and power of any of the Parties to execute this Governance Agreement or to perform its terms and conditions, the Parties shall jointly and cooperatively defend the validity of this Governance Agreement.

10.3.4.3. Specific Performance

The TRWC may elect and shall have the right to seek specific performance by any Party of any or all of the obligations set forth in this Governance Agreement. The Parties agree that specific performance may be sought by way of special action filed in superior court seeking an injunction ordering the Party to perform its obligations under this Governance Agreement. The Parties agree not to raise as a defense the position that there is an "adequate remedy at law." The Parties hereby stipulate and consent to the jurisdiction of the Arizona superior court located in Maricopa County, Arizona in any such special action.

10.4. Termination or Withdrawal

Any Member may voluntarily terminate its participation in the TRWC by providing twenty-four (24) months' written notice to the Board of Directors; provided that the terminating Member: (a) relinquishes all Network equipment purchased or partially purchased by the TRWC; (b) transfers or relinquishes any unexpended TRWC accounts which have been collected for the replacement or expansion of equipment or infrastructure; (c) pays all fees and charges owed to the TRWC up to and through the effective date of termination; (d) agrees to pay for all costs to effect the withdrawal of the Member including costs to reconfigure the Network for the remaining Members and (e) agrees to such additional or alternative terms and conditions as may be unanimously established by all Parties, including the terminating Party.

10.5. Amendments to This Governance Agreement

Any Member may propose an amendment or an addendum to this Governance Agreement to the Executive Director. The Executive Director will make a recommendation to the Board. The Board shall vote on any amendments or addendums brought to it by the Executive Director. This Governance Agreement may be amended only by a written document executed after a Super-Majority vote of the Members. Upon a Super-Majority vote of the Members, each Member shall take appropriate steps in conformity with state and local law to authorize and approve the proposed amendment or addendum. Each Member shall file a copy of the appropriate resolution, ordinance or other recorded action by which its legislative or governing body approved the amendment or addendum with the Executive Director of the TRWC.

10.6. Entire Agreement

This Governance Agreement contains the entire agreement and understanding among the Parties concerning the subject hereof and supersedes and replaces all prior negotiations, agreements and proposed agreements, written or oral, relating thereto. Each of the Parties hereto acknowledges that no other Party, nor any agent or attorney of any Party, has made any promise, representation, or warranty whatsoever, expressed or implied, not contained herein concerning the subject matter hereof, to induce it to execute the Second Amendment and acknowledges that the Second Amendment has not been executed in reliance on any promise, representation or warranty not contained herein.

10.7. Existing and Future Agreements

10.7.1. Incorporation in Future Agreements

The Parties agree that the provisions of this Governance Agreement shall be incorporated in any future subcontracts between the TRWC, the Parties and any other person, political subdivision or public agency that contracts with the TRWC or any Party to make use of the Network.

10.7.2. No Subcontracts for Network Use without Board Approval

The Parties agree that they will not enter into subcontracts for the use of the Network without the prior approval of the Board, which shall have the authority to review the subcontracts for conformity with the rights and obligations set forth in this Governance Agreement.

10.7.3. Modification of Existing Network Contracts between any of the Parties

The Parties agree that this Governance Agreement is a modification of all existing agreements between the Parties in regard to the Network. In the event of any conflict, inconsistency, or incongruity between the provisions of this Governance Agreement and any of the provisions of any previous agreement between the Parties, the provisions of this Governance Agreement shall in all respects govern and control.

10.7.4. Interpretation

Nothing in this Governance Agreement shall be construed or interpreted:

10.7.4.1. to supersede prior existing mutual aid agreements or radio support agreements between or among the Parties.

10.7.4.2. to prohibit a Party from entering into separate agreements after the Effective Date of this Governance Agreement concerning a Member's Real Property and a Member's Personal Property that such Member authorizes and allows the TRWC to use as part of the Network, provided the separate agreements are consistent with this Governance Agreement and compatible with the TRWC's use of the property for the Network.

10.7.4.3. to supersede prior existing agreements concerning a Member's Real Property or Member's Personal Property that the Party authorizes and allows the TRWC to use as part of the Network.

10.7.5. No Third Party Beneficiary

This Governance Agreement is entered into for the sole and exclusive benefit of the Parties, and no other person shall claim any implied right, benefit or interest in this Governance Agreement. The Parties do not intend to create rights in or remedies to any third party as a beneficiary of this Governance Agreement or of any duty, obligation, or undertaking established under this Governance Agreement.

10.8. Records; Confidentiality

10.8.1. TRWC Records

The TRWC shall make its financial records regarding the planning, designing, constructing, operating, maintaining and financing the Network available to any Party to this Governance Agreement. The Party requesting such records may be, at the sole and absolute discretion of the Administrative Manager, responsible for all costs incurred by the Administrative Manager associated with responding to such request. Such request for inspection shall not be made more frequently than once a month.

10.8.2. Party's Network Records

Each Party to this Governance Agreement agrees to make available to the TRWC its financial records related to planning, designing, constructing, operating, maintaining and financing the Network. Such request for inspection shall not be made more frequently than once a month.

10.8.3. Confidentiality of Network Information

To the extent permitted by law, the Parties shall treat Network information as proprietary and confidential. Network information includes, but is not limited to, technical data, engineering details, construction documents, equipment lists, programming configurations, and operational procedures. Any Party who receives a request for information or a public records request concerning the Network shall promptly forward the request to the Executive Director for consideration and response.

10.9. Notices

10.9.1. Notice Form and Service

Any notice, consent or other communications (“Notice”) required or permitted under this Governance Agreement shall be in writing and either delivered in person, deposited in the United States mail, postage prepaid, registered or certified mail, return receipt requested, or deposited with any commercial air courier or express service addressed with confirmed receipt to the addresses of each Member that are on file with the Executive Director.

10.9.2. Effective Service Date

If mailed as provided in Subsection 10.9.1. of this Governance Agreement, Notice shall be deemed received five (5) days after the Notice is deposited in the U.S. mail as provided above. If delivered as provided in Section 10.9.1. of this Governance Agreement, Notices shall be deemed received at the time it is personally served, or on the day received as confirmed by any commercial air courier or express services. Any time period stated in a Notice shall be computed from the time the Notice is deemed received.

10.9.3. Change in Address

A Party may change its mailing address or the person to receive Notice by notifying the Executive Director and the other Parties as provided in Subsection 10.9.1.

10.10. Performance and Uncontrollable Events

10.10.1. Performance of Party Obligation

All terms and conditions that are to be performed by a Party or any of the Parties shall be performed at the sole expense of the Party or Parties so obligated, and if the TRWC (or any other Party) pays any sum of money or does any act that requires the payment of money by reason of the failure, neglect or refusal of the obligated Party or Parties to perform such term or condition, the sum of money paid by the TRWC (or the other Party) shall immediately be payable to the TRWC (or other Party or Parties) by the Party or Parties obligated to perform.

10.10.2. Uncontrollable Event

No Party shall be considered to be in default in the performance of any obligations under this Governance Agreement (other than obligations of a Party to pay costs and expenses) if failure of performance is due to an uncontrollable event. The term “uncontrollable event” means any cause beyond the control of the Party affected, including but not limited to flood, earthquake, storm, fire, epidemic, war, riot, civil disturbance or disobedience, labor dispute, and action or non-action by or failure to obtain the necessary authorizations or approvals from any governmental agency or authority or the electorate, labor or material shortage, sabotage and restraint by court order or public authority, that by exercise of due diligence and foresight the Party reasonably could not have been expected to avoid and that by exercise of due diligence it will be unable to overcome. A Party that is rendered unable to fulfill any obligation by reason of an uncontrollable event shall exercise due diligence to remove such inability with all reasonable dispatch.

10.10.3. Burden of Proof regarding Uncontrollable Event

If any Party claims that its failure to perform was due to an uncontrollable event, the Party shall bear the burden of proof that such activity was within the meaning and intent of Subsection 10.10.2. if such claim is disputed by any Party to this Governance Agreement.

10.11. Governing Law

This Governance Agreement shall be governed by and construed in accordance with the laws of the State of Arizona applicable to contracts executed and intended to be performed entirely within the State of Arizona by residents of the State of Arizona. Any action at law, suit in equity or judicial proceeding for the enforcement of this Governance Agreement or any provision therefore shall be instituted only in the federal or state courts of Maricopa County, Arizona.

10.12. Effective Date

The Effective Date of this Governance Agreement shall be deemed December 1, 2018.

10.13. Headings

Article and section headings are inserted herein solely for convenience and the same shall not by themselves alter, modify, limit, expand or otherwise affect the meaning of any provision of this Governance Agreement.

10.14. Assignment and Binding Effect

This Governance Agreement shall be binding upon and shall inure to the benefit of the Parties hereto and their respective successors and assigns; provided, however, that nothing herein shall relieve any Party of any obligation under this Governance Agreement, except upon the express written consent of the TRWC.

10.15. Incumbents

Any person or entity holding any TRWC position immediately prior to the Effective Date of this Governance Agreement shall continue in that position commencing on the Effective Date of this Governance Agreement until such person or entity resigns, is removed or replaced in accordance with this Governance Agreement or the TRWC Policies and Procedures.

TOPAZ
Detail of Operating and Maintenance
Fiscal Year 2017 / 2018

Year to Date Through June 30, 2018

Description	Budget	Updated Forecast	YTD Forecast*	YTD Actual	\$ Var	% Var
					From YTD Forecast Incr/(Decr)	
Personnel Services	\$486,600	\$326,499	\$326,499	\$326,499	\$0	0%
Sub-total Personnel Services	\$486,600	\$326,499	\$326,499	\$326,499	\$0	0%
Insurance Premiums	10,600	8,323	8,323	8,323	-	0%
Legal Services	37,000	37,000	40,083	31,666	(8,417)	-21%
Temp Services	6,000	6,000	6,500	7,304	804	12%
Leases and Rents - Land	24,600	24,600	21,949	30,349	8,400	38%
Professional Services - Consulting	87,210	87,210	94,478	118,961	24,484	26%
Professional Services - Other	15,000	15,000	16,250	1,402	(14,848)	-91%
Utilities	72,500	60,000	65,000	55,359	(9,641)	-15%
Telephone	5,700	5,700	6,175	2,361	(3,814)	-62%
Repairs & Maintenance	10,400	10,400	11,267	1,246	(10,021)	-89%
Equipment Usage (Vehicles)	22,000	22,000	23,833	20,404	(3,429)	-14%
All Other Services	2,000	-	-	-	-	-100%
Sub-total Services	293,010	276,233	293,858	277,375	(16,483)	-6%
Contract - Motorola SUAll	594,200	533,487	533,487	533,487	-	0%
Contract - Motorola Security	330,000	341,642	341,642	341,642	(0)	0%
Materials & Parts	20,000	9,000	9,750	2,529	(7,221)	-74%
Non Cap Assets	50,000	20,000	21,667	1,170	(20,497)	-95%
Software Maintenance- Juniper	22,000	22,221	22,000	22,221	221	1%
All Other Commodities	1,000	-	-	747	747	0%
Sub-total Commodities	1,017,200	926,350	928,546	901,796	(26,750)	-3%
Subtotal O&M	1,796,810	1,529,082	1,548,903	1,505,670	(43,233)	-3%
Contingency - 5% of total O&M	89,751	-	-	-	-	0%
VHF Operations	29,700	29,700	29,700	29,700	-	0%
Total	<u>\$1,916,261</u>	<u>\$1,558,782</u>	<u>\$1,578,603</u>	<u>\$1,535,370</u>	<u>(\$43,233)</u>	<u>-3%</u>

*YTD Forecast represents 13 months of operational costs plus any contractual expenses already incurred (i.e. one time payments such as Insurance Premiums, Land Rental and Motorola Contract).

TOPAZ
Detail of Operating and Maintenance
Fiscal Year 2018 / 2019

Year to Date Through July 31, 2018

Description	Budget	Updated Forecast	YTD Forecast*	YTD Actual	\$ Var	% Var
					From YTD Forecast	Incr/(Decr)
Personnel Services	\$ 418,340	\$ 382,629	\$ 29,433	\$ 29,433	\$ -	0%
Insurance Premiums	8,500	8,500	708	-	(708)	-100%
Legal Services	37,000	37,000	3,083	-	(3,083)	-100%
Temp Services	6,000	6,000	500	346	(154)	-31%
Leases and Rents - Land	25,300	25,300	2,108	-	(2,108)	-100%
Professional Services - Consulting	88,500	88,500	7,375	7,260	(115)	-2%
Professional Services - Other	15,000	15,000	1,250	907	(343)	-27%
Utilities	60,000	60,000	5,000	1,869	(3,131)	-63%
Telephone	3,400	3,400	283	2	(281)	-99%
Repairs & Maintenance	31,000	31,000	2,583	-	(2,583)	-100%
Equipment Usage (Vehicles)	20,000	20,000	1,667	-	(1,667)	-100%
All Other Services	-	-	-	-	-	0%
Sub-total Services	294,700	294,700	24,557	10,384	(14,173)	-58%
Contract - Motorola SUAll	597,400	597,400	49,783	-	(49,783)	-100%
Contract - Motorola Security	359,800	359,800	29,983	-	(29,983)	-100%
Materials & Parts	20,460	20,460	1,705	-	(1,705)	-100%
Non Cap Assets	25,000	25,000	2,083	-	(2,083)	-100%
Software Maintenance- Juniper	22,500	22,500	1,875	-	(1,875)	-100%
All Other Commodities	-	-	-	-	-	0%
Sub-total Commodities	1,025,160	1,025,160	85,429	-	(85,429)	-100%
Subtotal O&M	1,738,200	1,702,489	139,419	39,817	(99,602)	-71%
Contingency - 5% of total O&M	51,321	51,321	4,277	-	(4,277)	-100%
VHF Operations	120,138	120,138	10,012	-	(10,012)	-100%
Total	\$ 1,909,659	\$ 1,873,948	\$ 153,708	\$ 39,817	\$ (113,891)	-74%

*YTD Forecast represents 1 months of operational costs plus any contractual expenses already incurred (i.e. one time payments such as Insurance Premiums, Land Rental and Motorola Contract).

Date: September 6, 2018

To: TOPAZ Regional Wireless Cooperative (TRWC) Board of Directors

Through: Dale Shaw, TRWC Executive Director

From: Randy Thompson

Subject: Administrator Update

Capital Projects

- 1) **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. This project is budgeted in the TRWC FY2017 - 2018 capital budget. The project milestones with status and dates are shown in the Appendix. This project is complete except for final punchlist sign off and the final billing milestone. This project is forecast to be closed by September 27, 2018.
- 2) **Lifecycle Upgrade for Microwave Radio Network Routers.** The network routers in the point-to-point microwave radio network control the flow of data in and out of the TOPAZ radio sites to ensure the data finds the fastest route to its destination and does not encounter congestion or other impairments that would delay delivery of data. In a radio system such as TOPAZ, minimizing these delays is critical to delivering clear voice radio communications. These network routers also automatically reroute data around disruptions in the point-to-point microwave radio network to ensure clear voice radio calls. These routers support both the 7/800 MHz and VHF radio networks. The equipment has been delivered and is undergoing test prior to installation at each site. Seven of thirteen sites have been successfully installed and put in service. The project milestones with status and dates are shown in the Appendix.
- 3) **Fiscal Year 2019 Capital Projects (approved in Fiscal Year 2018-2019 TRWC Capital Budget)**
 - a. **System of Systems Networking.** This project will implement the ability to network the TRWC to other Project 25 radio networks, the First Responder Network Authority (FirstNet, AT&T), and Verizon Wireless to enable “roaming” between systems to expand radio coverage without building additional radio sites. The purchase of this equipment was approved by the Mesa City Council on June 20, 2018, and we are awaiting delivery of equipment by Motorola Solutions.

We have been in active discussion with AT&T FirstNet for a cellular network connection, and the Arizona Department of Public Safety for a Project 25 to Project 25 network connection. We have also been in contact with Verizon Wireless regarding a system-of-systems network connection with Verizon.

TRWC Administrator Update, September 6, 2018

- b. Florence Gardens Site Lifecycle Upgrade.** The radio base stations are obsolete and will not be supported in the next upgrade to the TOPAZ core, so the base stations need to be upgraded. In addition, the capacity of the site will be increased from four to six channels. The purchase of this equipment was approved by the Mesa City Council on June 20, 2018, and we are awaiting delivery of equipment by Motorola Solutions.
- c. Radio Sites Emergency Power Upgrade.** This is a five-year plan to replace the emergency generators at the TOPAZ radio sites. This is a planned lifecycle upgrade. We have difficulty getting parts for the older generators, so we want to replace rather than wait for failure. Specifications for the new generators are under development.
- d. Antenna & Transmission Lines Lifecycle Upgrade.** The antennas and the transmission lines that connect the antennas to the base stations at the TOPAZ radio sites are over 15 years old, so we need to replace them before they fail. This a two-year plan. Specifications for the new antennas and transmission lines are being developed.
- e. Internet Protocol Network Routers & Switches Expansion.** Several TOPAZ sites use network switches instead of routers; this project is a reliability improvement, as the architecture of using switches at those TOPAZ sites has not provided the expected level of network reliability. This item is planned to go to Mesa City Council for approval October 1, 2019.
- f. Communications Building UPS Battery Replacement.** The cost of the replacement batteries for the Communications Building Uninterruptible Power Supply are split between the TRWC and City of Mesa. This is a once every four years expense and is scheduled for the 2nd calendar quarter of 2019.
- g. TOPAZ Network Engineering Study.** This is a new project for Fiscal Year 2018-2019 and will be funded by reallocating existing TRWC Operations & Maintenance budget. This engineering study will evaluate the current TOPAZ network (both 7/800 MHz and the Fire Hazard Zone Communications System (VHF)) to determine the following:
 - i. Are current site locations optimal for the current radio coverage area criteria
 - ii. Are the current antennas appropriate to meet the system radio coverage objectives (this is related to item “d” above).
 - iii. An ordered list of areas requiring new sites to provide or improve radio coverage in the future (this is related to the TRWC Capital Budget Plan)

Operations Summary

Unscheduled Impairments – Please see the unscheduled impairments graph on page 6. Since the last Administrator update on March 15, 2018, the unimpaired system availability has been as follows:

Period	Unimpaired System Availability	Comments
February, 2018	99.999%	02/21/18: All sites site trunking 14 seconds due to Motorola maintenance outside of maintenance window
March, 2018	100.000%	
April, 2018	100.000%	
May, 2018	99.995%	5/30/218: SWP out of service for 2:24 due to unknown reasons
June, 2018	100.000%	

TRWC Administrator Update, September 6, 2018

July, 2018	99.295%	7/9/18: TRW out of service 6 seconds due to storm, SWP out of service 14 seconds due to storm, FS205 out of service 2:28:27 due to equipment failure; 7/17/18: All simulcast sites out of service 2 seconds due to fiber optic cable cut; 7/30/18: FS264 out of service 2:45:57 due to equipment failure
Fiscal Year 2018	99.970%	Goal 99.999%
Calendar Year 2018	99.896%	Goal 99.999%
Fiscal Year 2019	99.295%	Goal 99.999%

Airtime and Radio Counts – the following charts are included:

- 1) Six month rolling average airtime usage by member for calendar year 2018 through July.
- 2) Average number of radios enabled by member for calendar year 2018 through July.
- 3) Six month rolling average airtime usage by service type for calendar year 2018 through July.
- 4) Average number of radios enabled by service type for calendar year 2018 through July.

Peak Channel Usage – the following charts are included:

- 1) Peak channel usage for each site for February through July, 2018, is shown on the graphs at the end of this report. The following table is a summary of the number of days with an all channels in use event:

Period	Simulcast Cell	Florence Gardens	Shaw Butte	Thompson Peak
February, 2018	1	3	0	0
March, 2018	2	4	0	0
April, 2018	2	5	0	0
May, 2018	0	4	0	0
June, 2018	0	0	0	0
July, 2018	1	2	0	0

- a. Although all channels were in use on several occasions as shown above, no system busies have been reported by users.
- b. Note the Florence Gardens site is frequently experiencing all channels in use. As described in item 3.b above, Florence Gardens will be upgraded from four to six radio channels during the lifecycle upgrade.

Other Operational Events:

- 1) The TOPAZ 800 MHz radio network backup capability was successfully tested on July 25, 2018.
- 2) The City of Mesa Communications Building (quarterly) simulated power outage test was completed July 11, 2018. This test uncovered a problem with the controls for the Communications Building’s cooling system that keep the cooling from operating when the generators are providing power to the building. The cause of this issue is still under investigation by the City of Mesa Facilities Maintenance group. Mesa Facilities Maintenance is also working on a modification to the controls to ensure the cooling will function when the building is on generator power until the root cause of the control problem is found and corrected. The City of Mesa is also obtaining the cost of an independent redundant cooling system for the Communications Building’s second floor equipment room.

TRWC Administrator Update, September 6, 2018

Upcoming Events:

Nothing to report.

Other News:

Nothing to report.

TRWC Administrator Update, September 6, 2018

Appendix

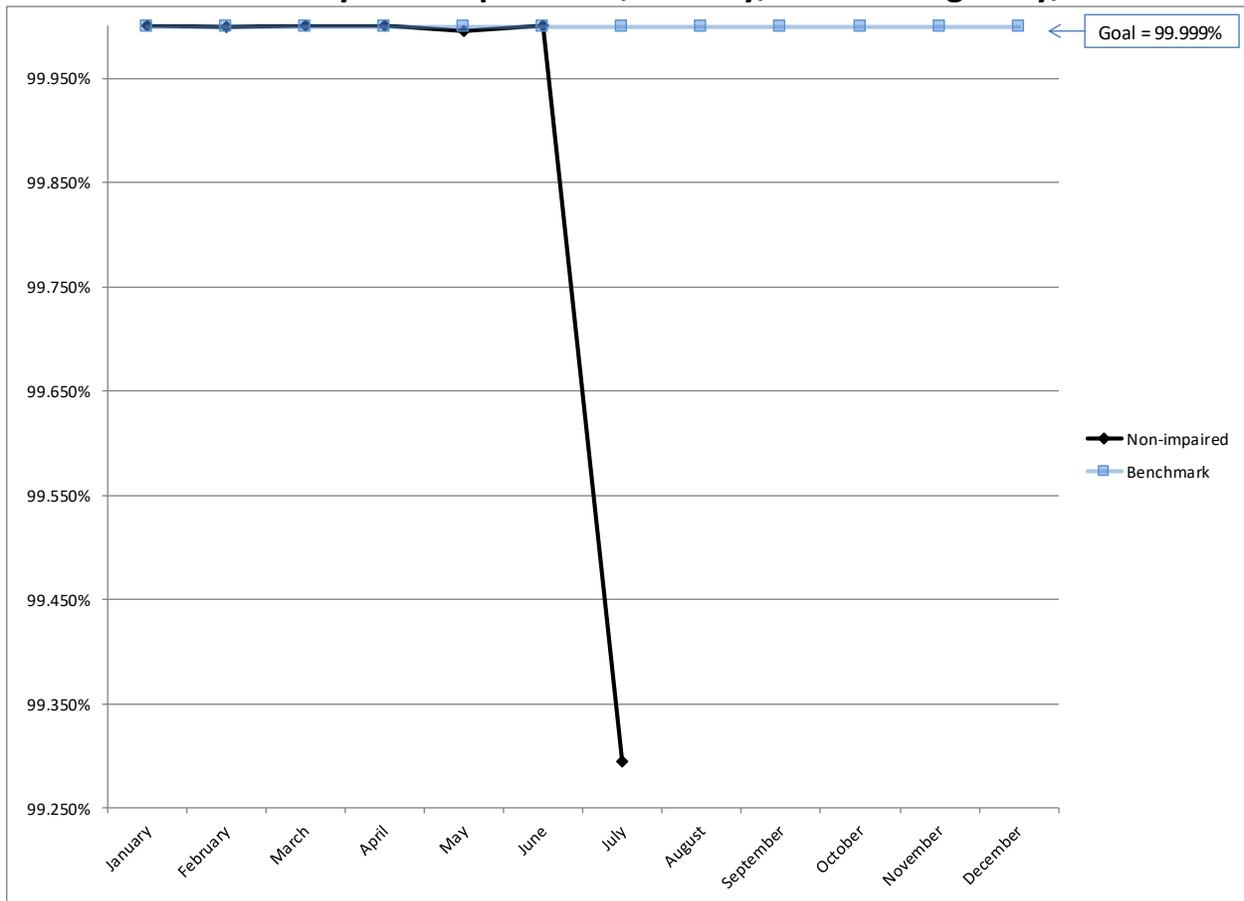
Point-to-Point Microwave Radio Wireless Backhaul Lifecycle Upgrade Schedule

Milestone	Status	Date
Contract awarded to Aviat Networks	Complete	
Equipment received	Complete	August 14, 2017
Path equipment installation, testing, and commissioning (1 path/week)	Complete	
Project Completion	Forecast	September 27, 2018

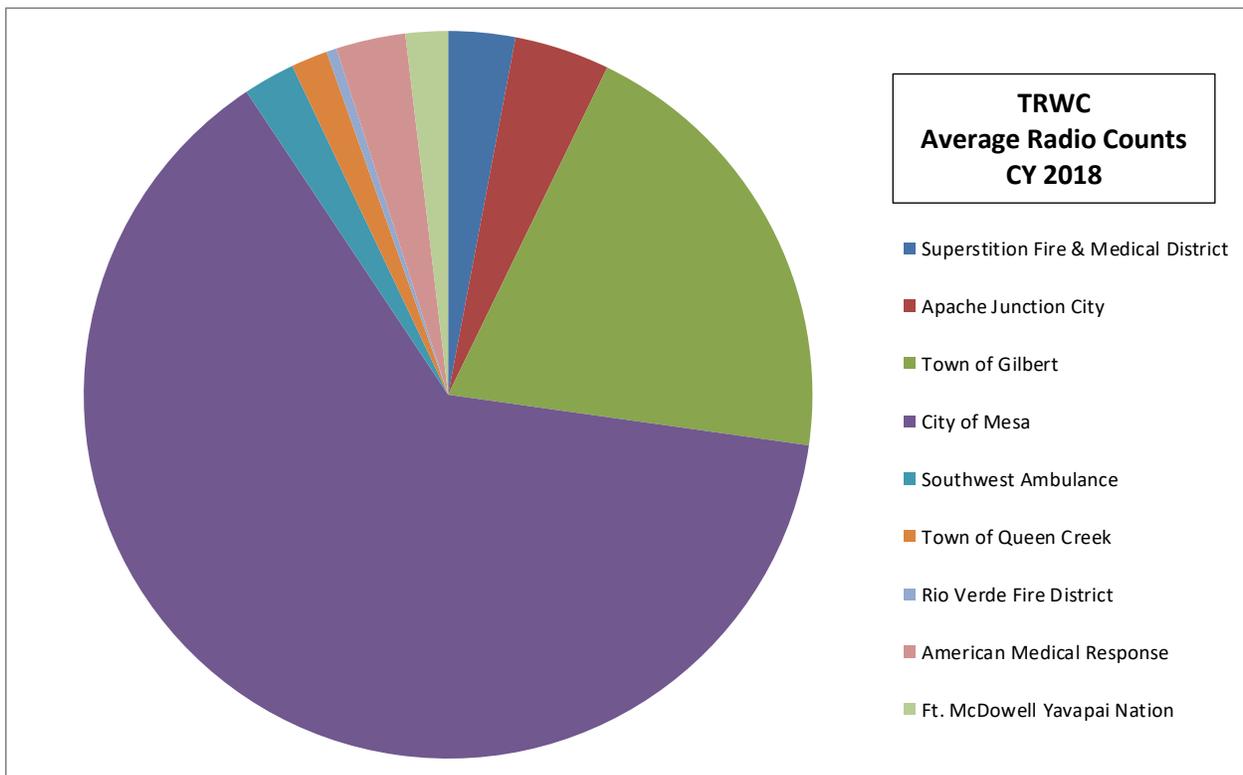
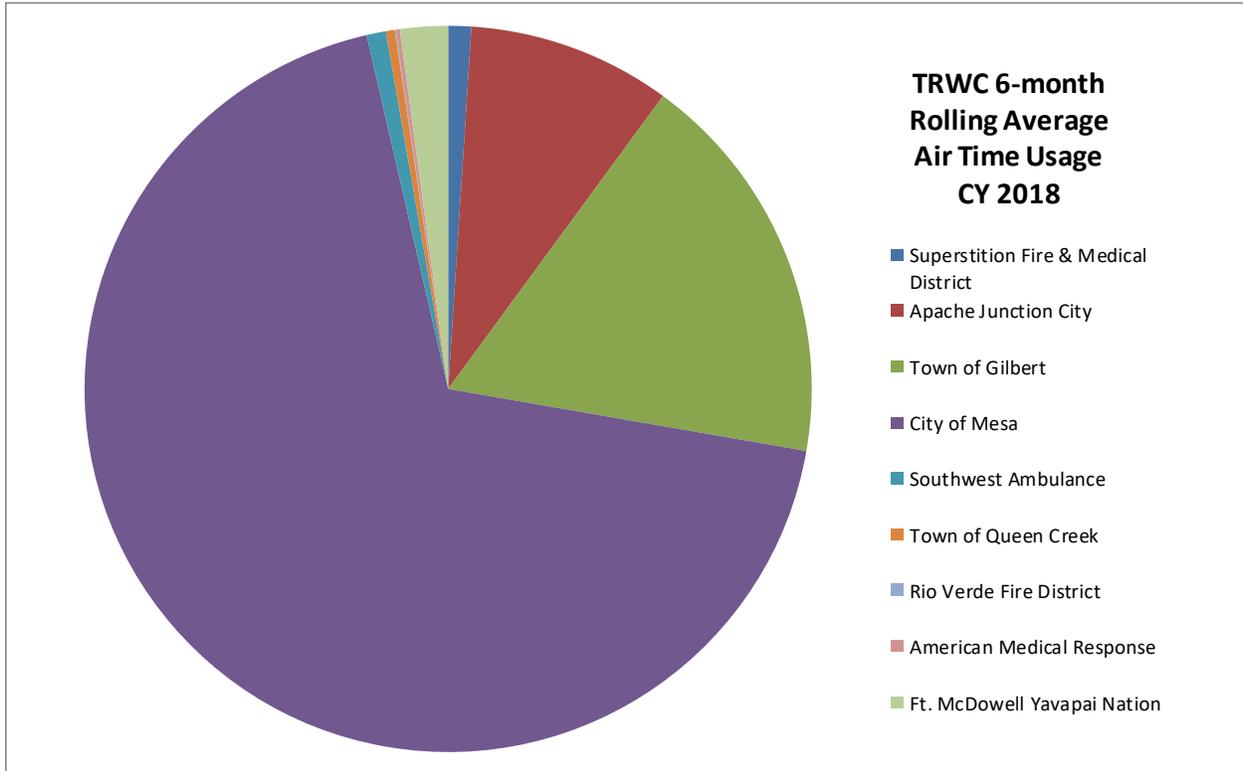
Lifecycle Upgrade for Microwave Radio Network Routers

Milestone	Status	Date
Contract awarded to Enterprise Network Solutions	Complete	October 2, 2017
Equipment ordered	Complete	
Equipment received	Complete	
Equipment staging & testing	Ongoing	
Equipment installed & operational	In Progress	Started May 30, 2018, 7 of 13 sites complete; next site (Falcon Field Airport) scheduled for September 12, 2018
Project Completion	Planned	November 15, 2018

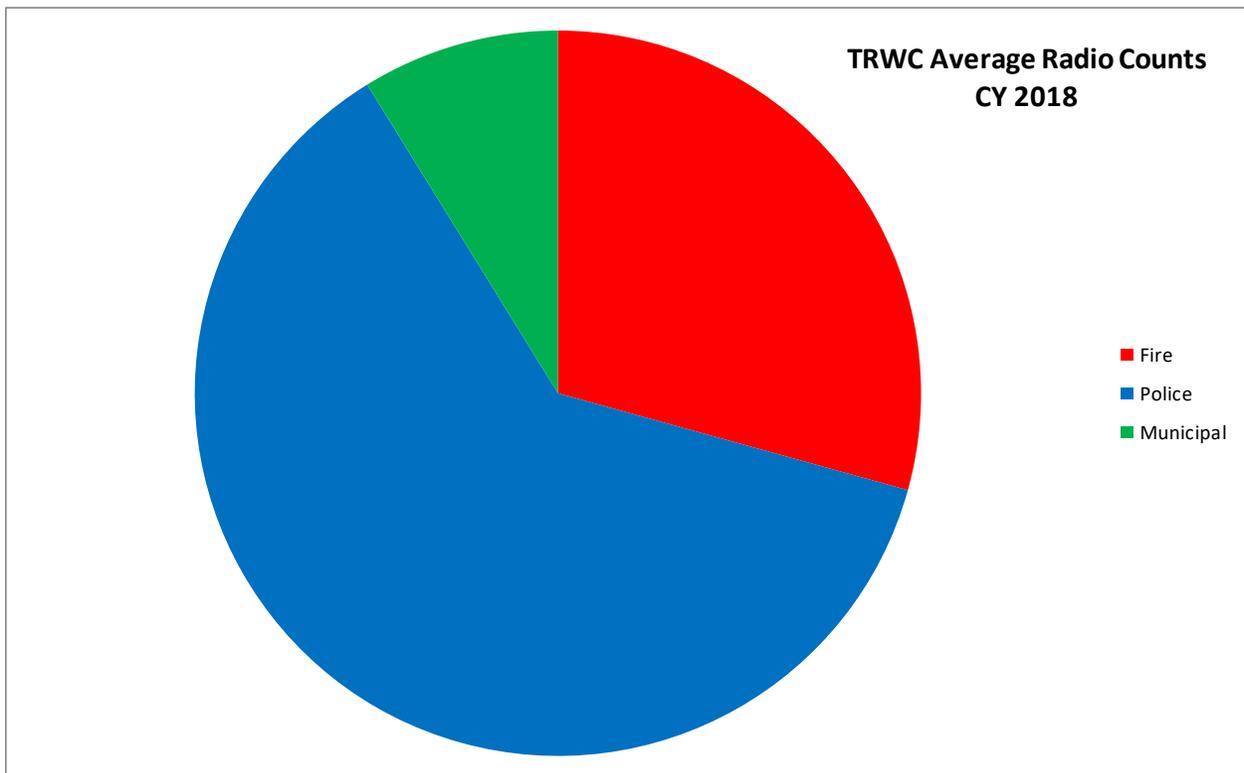
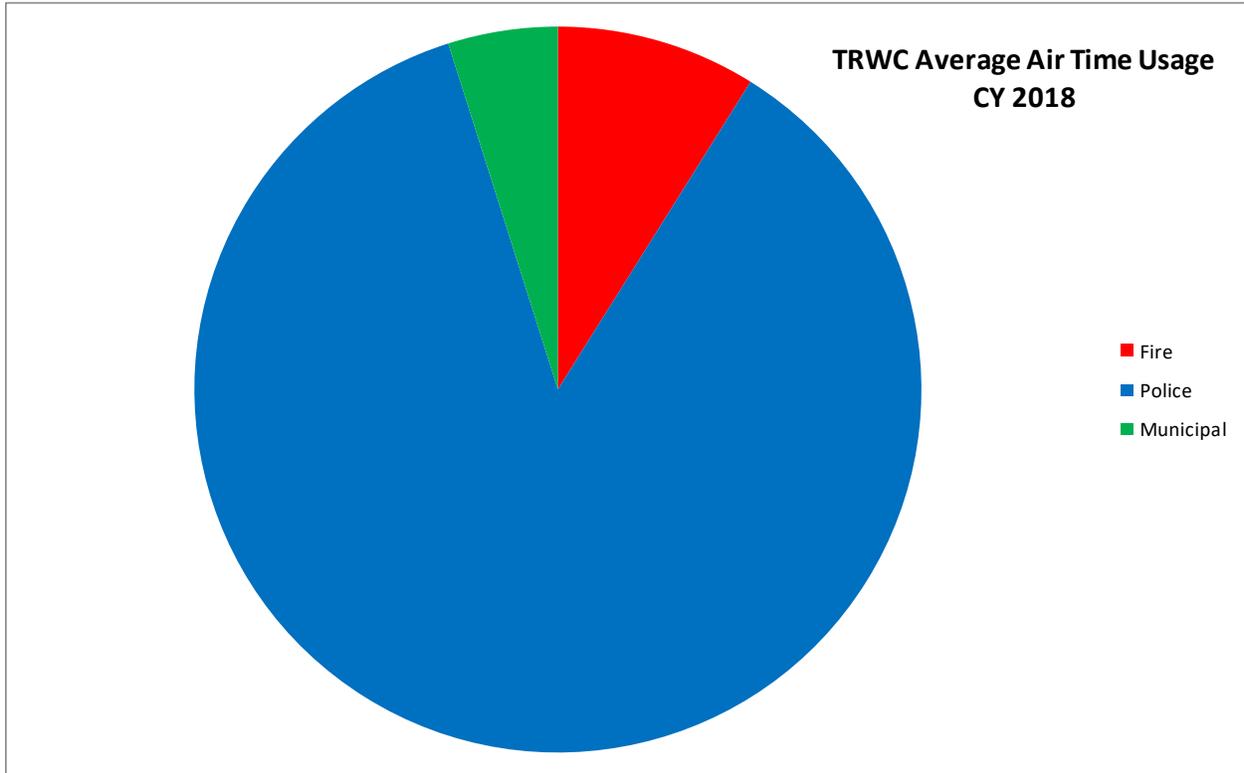
Unscheduled System Impairment, January, 2018 through July, 2018



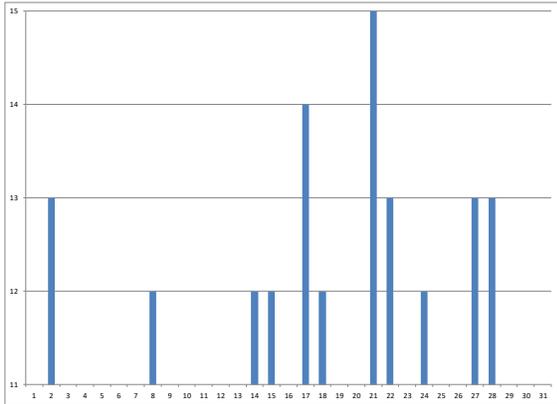
TRWC Administrator Update, September 6, 2018



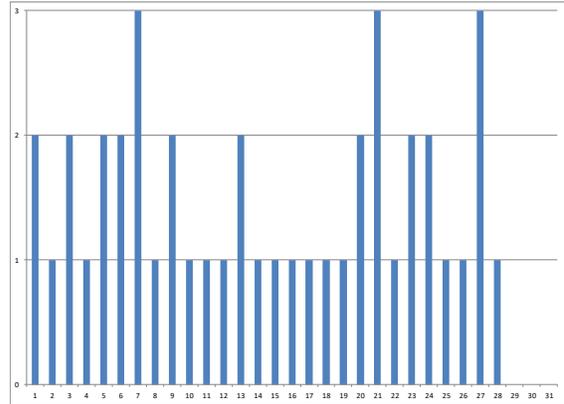
TRWC Administrator Update, September 6, 2018



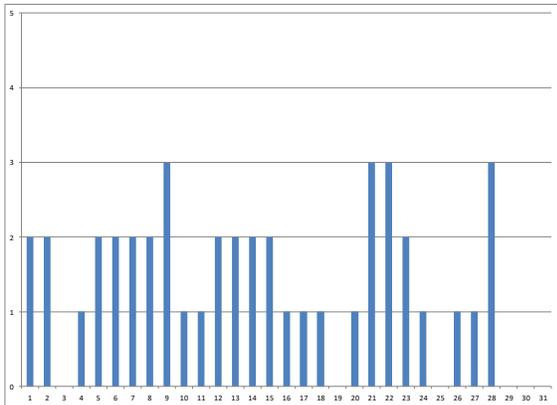
TOPAZ Peak Channel Usage, February, 2018



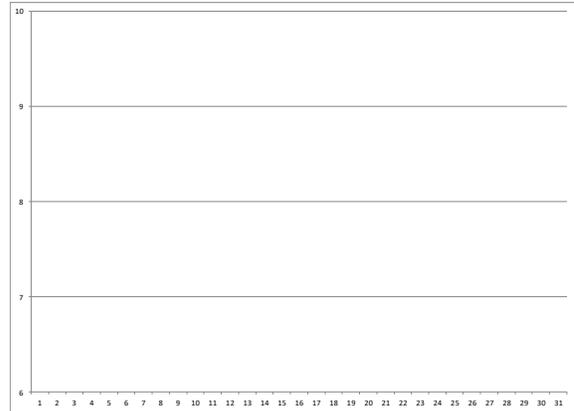
Simulcast Cell



Florence Gardens



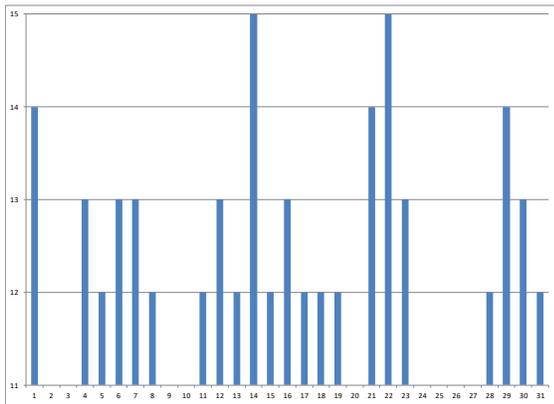
Shaw Butte



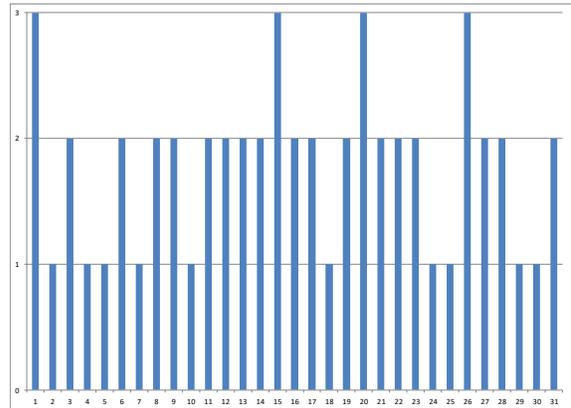
Thompson Peak

TRWC Administrator Update, September 6, 2018

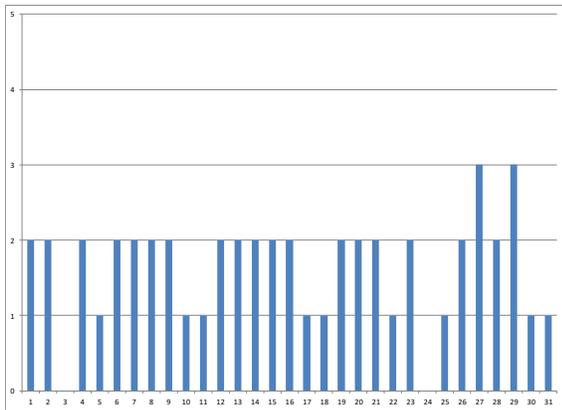
TOPAZ Peak Channel Usage, March, 2018



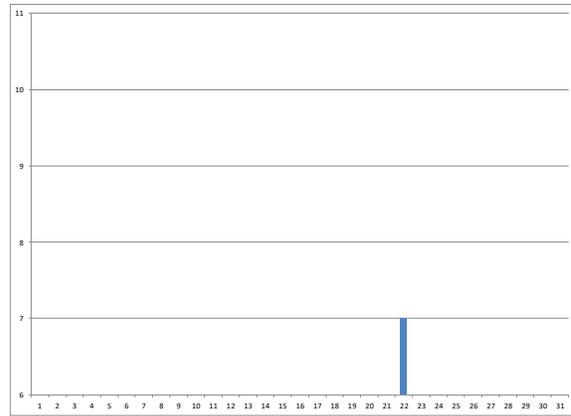
Simulcast Cell



Florence Gardens



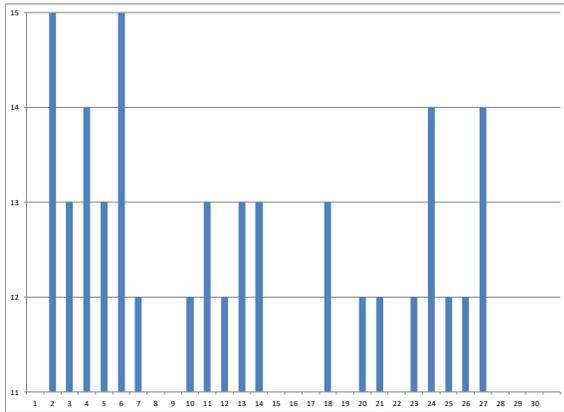
Shaw Butte



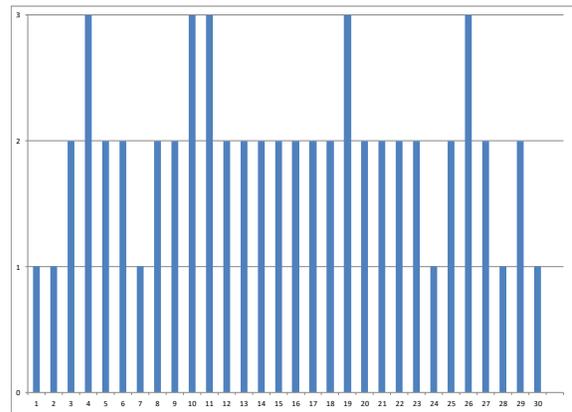
Thompson Peak

TRWC Administrator Update, September 6, 2018

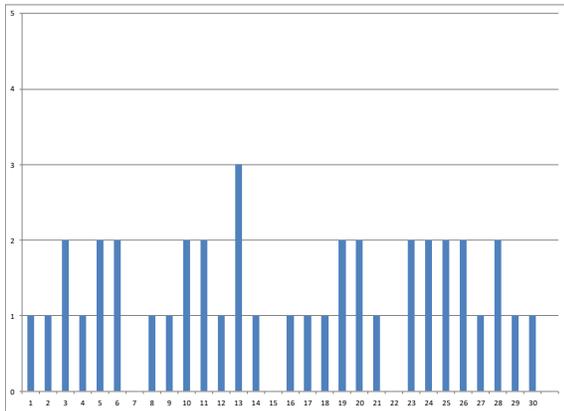
TOPAZ Peak Channel Usage, April, 2018



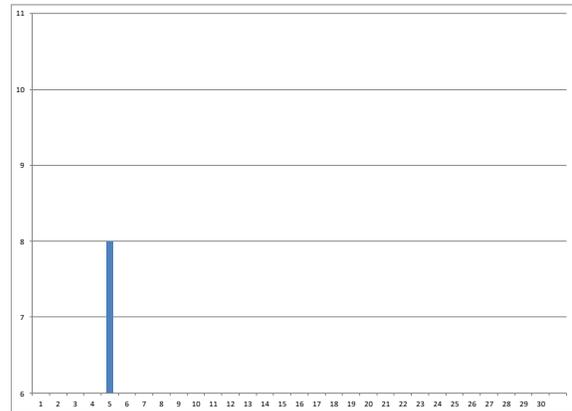
Simulcast Cell



Florence Gardens



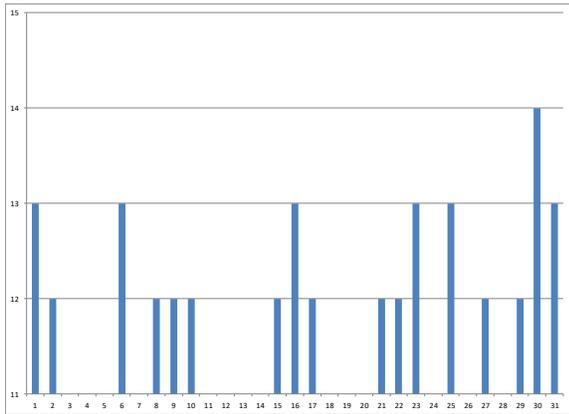
Shaw Butte



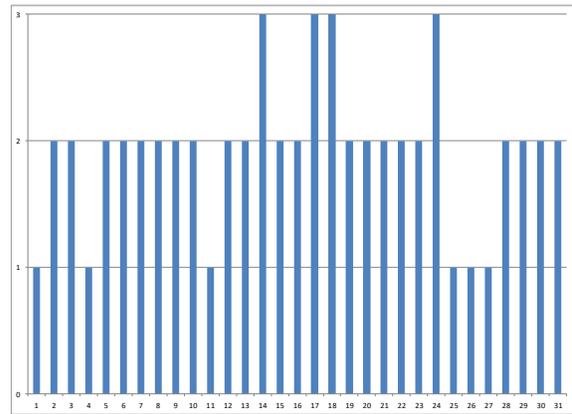
Thompson Peak

TRWC Administrator Update, September 6, 2018

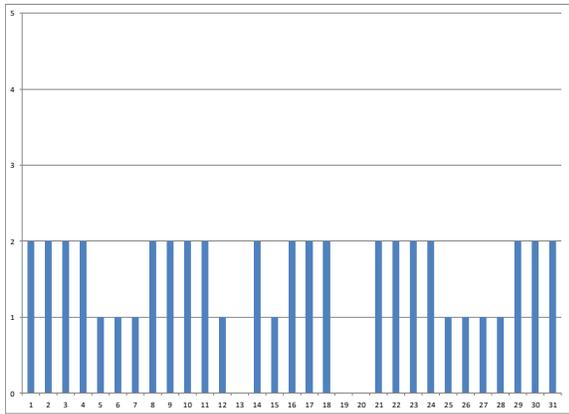
TOPAZ Peak Channel Usage, May, 2018



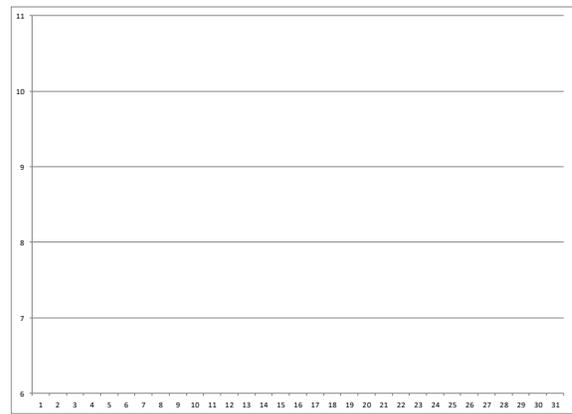
Simulcast Cell



Simulcast Cell



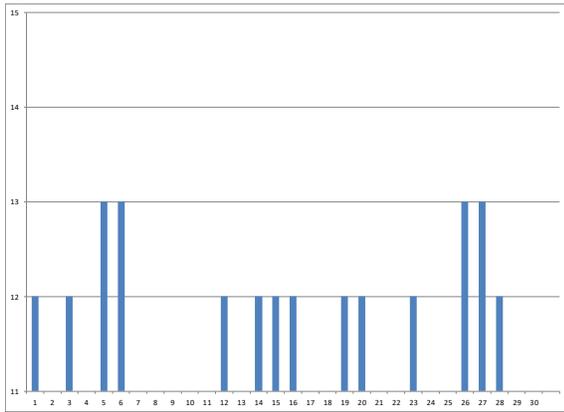
Shaw Butte



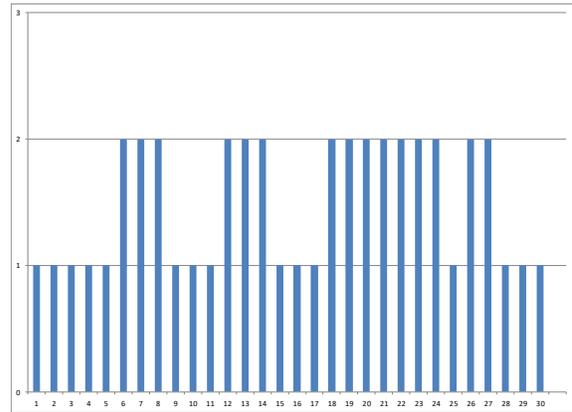
Thompson Peak

TRWC Administrator Update, September 6, 2018

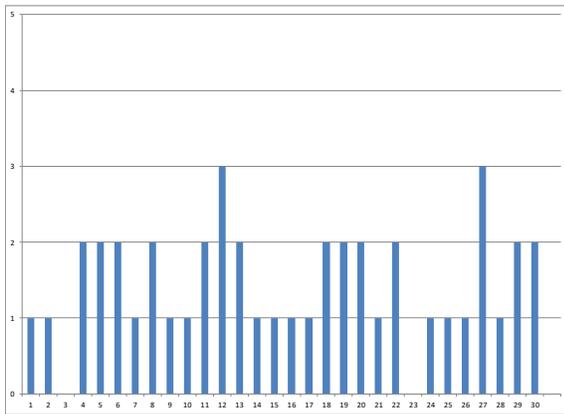
TOPAZ Peak Channel Usage, June, 2018



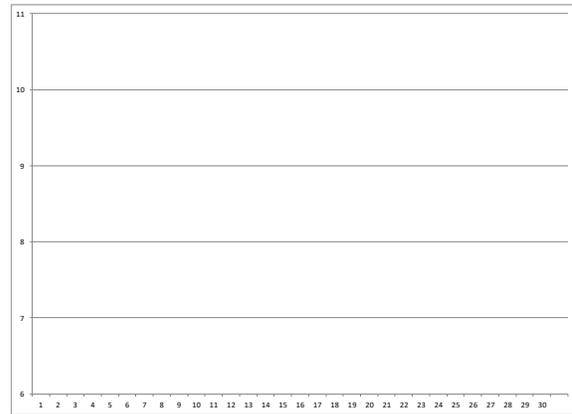
Simulcast Cell



Simulcast Cell



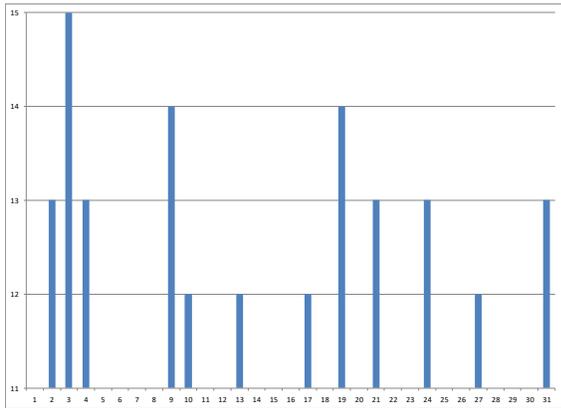
Shaw Butte



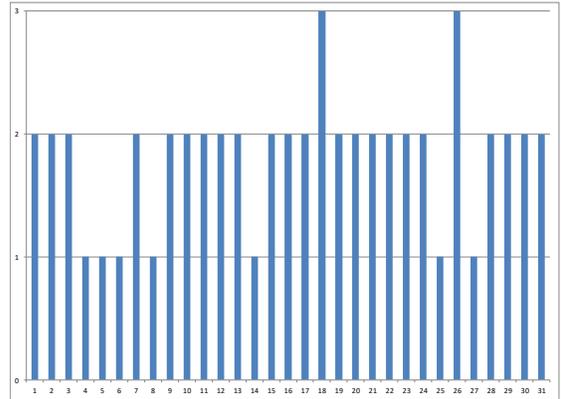
Thompson Peak

TRWC Administrator Update, September 6, 2018

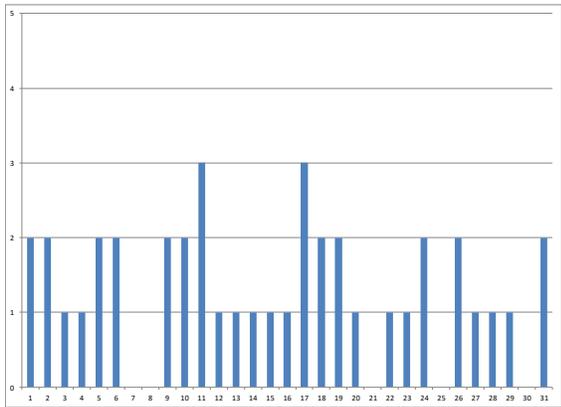
TOPAZ Peak Channel Usage, July, 2018



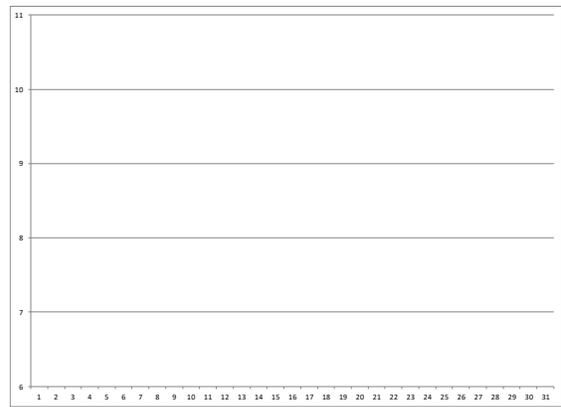
Simulcast Cell



Simulcast Cell



Shaw Butte



Thompson Peak



PARTNERING FOR INTEROPERABILITY



SECOND AMENDMENT TO AMENDED INTERGOVERNMENTAL AGREEMENT

BACKGROUND

➤ *TRWC IGA and Governance History*

- ✓ Original IGA was established on August 7, 2008
- ✓ The Amended and Restated IGA dated May 1, 2012 superseded the Original IGA in its entirety
 - Rio Verde Fire District became a Member
- ✓ First Amendment to Amended and Restated IGA dated February 1, 2016 brought the Fort McDowell Yavapai Nation into the TRWC

BACKGROUND (CONT'D)

- Merger discussions between the TRWC and RWC
 - ✓ After the TRWC Amended and Restated IGA was adopted, the TRWC and RWC convened a Governance Working Group to explore the possibility of merger of the two Networks under a new Regional Communications Authority
 - ✓ Discussions with the RWC lead to a draft governance agreement, which included numerous revisions to the original governance provisions of both the TRWC and RWC

BACKGROUND (CONT'D)

- TRWC Governance Agreement Subgroup
 - ✓ After merger talks between the 2 Networks ended, TRWC Executive Director formed a new Governance Subgroup to update the existing TRWC Governance Agreement

NEW GOVERNANCE AGREEMENT SUMMARY

➤ New Members

- ✓ Allows for bringing in new parties to the TRWC by vote of the TRWC Board

➤ Replaces Existing Governance Agreement with a new Governance Agreement

- ✓ Includes some of the substantial work of developing a new Governance Agreement from the merger process

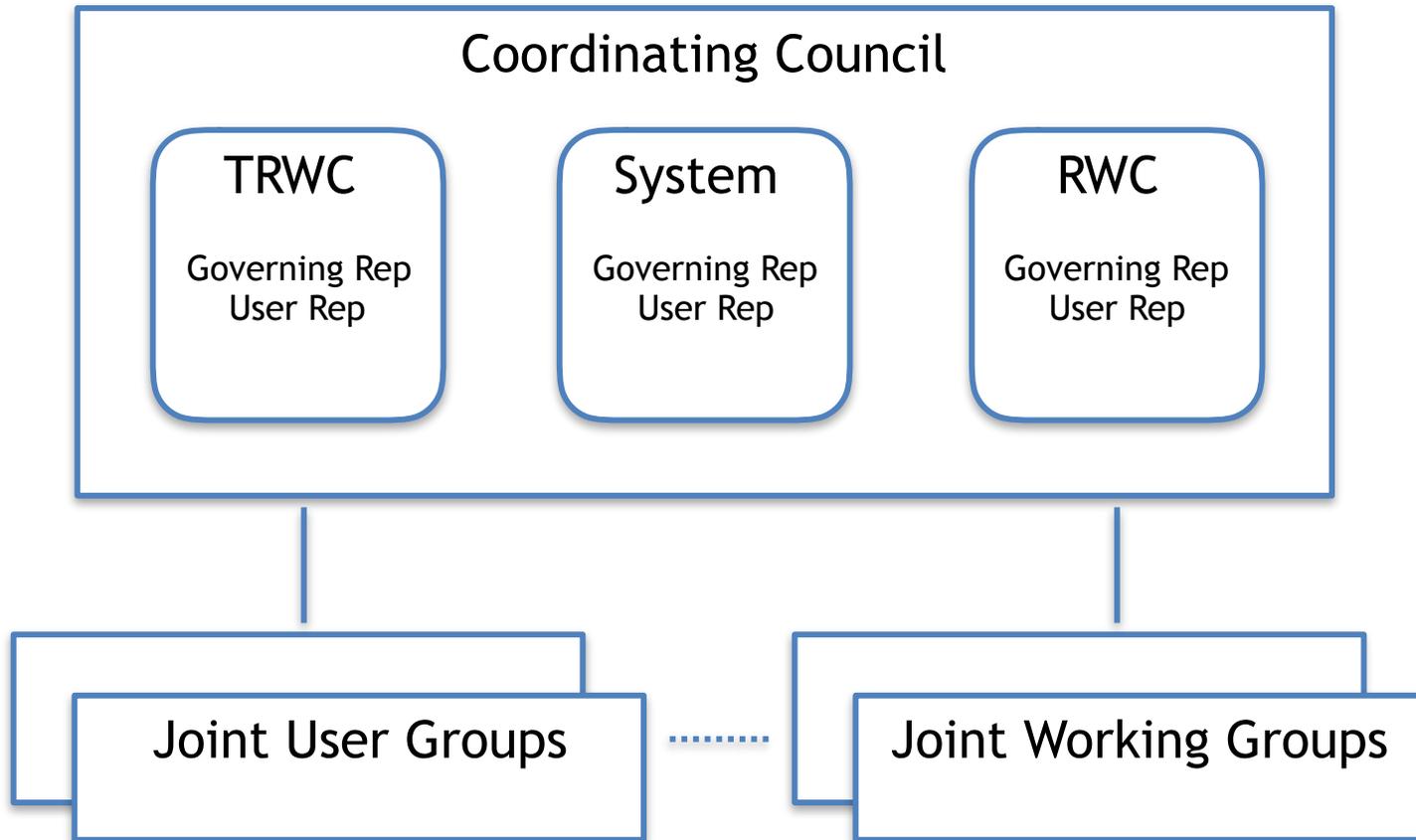
NEW GOVERNANCE AGREEMENT SUMMARY (CONT'D)

- ✓ Streamlines governance process, allowing the TRWC operational flexibility over time by moving numerous rules and procedures from the Governance Agreement to Board approved TRWC Rules and Procedures
 - ❑ The Governance Agreement no longer needs to be amended anytime the TRWC adopts new or amended rules and procedures

- ✓ Provides process for bringing in new Indian Community members to the TRWC
 - ❑ Requires limited waiver of Indian Community's sovereign immunity at time of admission as a member

CSSA Coordinating Council Update

September 2018



Attendees

- Brad Hartig - Scottsdale CIO (RWC)
- Max Merritt - Glendale Police Sergeant (RWC)
- John Pombier - Mesa Assist. City Manager (TRWC)
- Dale Crogan - Mesa Fire Captain (TRWC)
- David Felix - RWC Executive Director
- Dale Shaw - TRWC Executive Director
- Randy Thompson - Mesa Deputy CIO (TRWC)

Initial Focus Areas

- **Contracts** - explore a cooperative approach to achieve improved service levels and reduced costs
- **Awareness** - more effectively share information with police officers and firefighters regarding the function and capabilities of the radio system
- **Planning** - plan a joint RWC/TRWC Board of Directors meeting to re-establish coordinated regional strategic planning
- **Policies**- identify opportunities for overlapping policies to promote regional consistency where appropriate
- **Roaming** - work on approach that will support wide area operational use of the two networks