



TRWC Board of Directors Meeting

October 5, 2023 - 2:00 p.m.
Gilbert Public Safety Training Facility
Apollo Room
6860 S Power Rd
Gilbert, AZ 85295

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. Board representative roll-call

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

January 17, 2023, Board Meeting Minutes

Approved (Vote: 7-0; All Board Members present)

4) Discussion and Action on Election of Board Vice Chair – Executive Director Shaw

Super Majority vote will be required.

Nominations and/or interest received:

Leah Rhineheimer

Approved (Vote: 7-0; All Board Members present)

5) Executive Committee Updates – Co-Chair Chief Duggan

6) Action on Policy Manual Updates – System Expansion and Radio Amplification Systems – Executive Director Shaw, Lieutenant King, Chuck Craig

System Expansion – **Approved (Vote: 7-0; All Board Members present)**

Radio Amplification – **Approved (Vote: 7-0; All Board Members present)**

7) Discussion and Possible Action on the FY 24/25 Preliminary Budget – Executive Director Shaw,

Angie Huckaby

In the event that action is taken, a Super Majority vote will be required.

Approved (Vote: 7-0; All Board Members present)

8) Discussion and Action on Admission Request for Fountain Hills – Executive Director Shaw

Super Majority vote will be required.

Approved (Vote: 7-0; All Board Members present)

9) Network Administrator Updates

- a. Finance Update – Angie Huckaby
- b. Network Updates and Performance Overview – Chuck Craig

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) Future Board of Directors Schedule

Date	Upcoming Agenda Items
January 2024	
May 2024	
Sept 2024	Budget Adoption

12) Recognition and retirement of Bill Anger – Executive Director Dale Shaw

13) Adjournment

Adjournment 2:55 Approved (Vote: 7-0; All Board Members present)



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TRWC Board of Directors Meeting

January 17, 2023 - 1:00 p.m.

Phoenix-Mesa Gateway Airport (PMGA)

Administration Building, Board Room

5835 S. Sossaman Road

Mesa, AZ 85212

Agenda

1) Call to Order and Opening Comments

- a. Materials and sign-in sheet
- b. Speaker cards
- c. Audio and video recording
Chair Kross called the meeting to order and welcomed the attendees. He also provided instruction on the process for public comment and reminded the participants the meeting is audio recorded.
- d. Board representative attendees: Chair Kross, Vice Chair Leah Rhineheimer, Director Busby, Director Butler, Director Smith, Director Mooney, Director Stewart
- e. Introduction of new members: Chair Kross introduced the new members and the movement from Alternate Board member to Primary Board member. New members are Director Chief Butler representing Mesa, Director Chief Smith representing Fort McDowell Yavapai Nation, and Alternate Director Chief Stewart representing RIO Verde. Movement from Alternate to Primary are Director Bruce Gardner representing Queen Creek and Director Chief Krushak representing RIO Verde.

2) Public Comment

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No public comment requests were received.

3) Discussion and Action on Board Meeting Minutes

There were no questions or comments on the Board Meeting Minutes for September 22, 2022. Director Busby motioned for an approval of the minutes and Director Mooney second the motion. All Board members who were in favor signaled by saying aye; there was no opposition, the motion passed unanimously.

4) Executive Committee Updates – Chief Duggan

Co-Chair Duggan introduced Jason King as the new Executive Committee Co-Chair. Co-Chair Duggan went on to give a brief explanation of the carry over that was related to the purchase of new consoles. He then let the Board know that the Committee did a trial run at a new facility for the next Board meeting.

5) Discussion and Action on the TRWC Maintenance and Support Policy –Director Shaw, Chuck Craig

Director Shaw explained that this was discussed at the last Board meeting but was not place on the agenda as an action. As indicated in the last meeting this item is carried over for action. Mr. Craig

gave a brief update on the Policy change. There were no questions or concerns on this action item. Chair Kross requested for a motion for consideration of approval. Vice-Chair Leah Rhineheimer motioned to approve, and Director Busby second the motion. All Board members who were in favor signaled by saying aye; there was no opposition, the motion passed unanimously.

6) Network Administrator Updates

a. Finance Update – Angie Huckaby

Ms. Huckaby stated that O&M and the Capital budgets are under budget year to date. Capital has been updated with a carry over of a 9.1% sales tax that was not added in for the purchase of consoles. There were no questions or comments from the Board.

b. Network Updates and Performance overview – Chuck Craig

Mr. Craig stated that he is continuing to work with Motorola, Mesa, and Gilbert on the Smart Connect Proof of Concept, it will be 24/7 starting January 16th. He also discussed the expansion sites, stating that we are waiting for an answer from City Engineering for a final recommendation to put a 750lb receive site on top of Banner Ironwood . Mr. Craig and staff are working closely with the Forest Service and hoping for an approval for the tower at the Wolverine site. The city purchasing process of engaging with a IPKeys to perform our Radio system security audit has begun. There was a power outage at the CAP (City Utilities secondary site) which kept the backup system offline for a day, however City Facilities quickly corrected to problem. Lastly, Mr. Craig provided a schedule to the Board for when the Mesa Radio shop will be conducting preventive maintenance.

Chair Kross asked if there have been any interruptions or problems created with the Public Safety group with the Smart Connect. Mr. Craig replied that there has not been a problem with the Public Agencies or to safety. Chair Kross questioned the Banner received site and asked if the final analysis has been completed. Mr. Craig stated that he is waiting for the final word, but the engineer does not recommend putting the receiver on top of the building due to its weight. Mr. Craig also discussed other options for the receiver that have been turned down. Chair Kross would like to know what the next plan is if this Banner site does not work. Mr. Craig and Director Shaw reviewed some of the other sites that we are looking at.

7) Comments from the Board

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

No comments from the Board

8) Next TRWC Board Meetings:

May 18, 2023

9) Future Board of Directors Schedule

Date	Upcoming Agenda Items
5/18/2023	
9/14/2023	Budget Adoption

10) Discussion and Action on Election of Board Chair – Dale Shaw

Nominations and/or interest received: Matt Busby

Director Shaw announced the soul nomination for the Chair of the Board, Matt Busby. Chair Kross asked for a motioned from the Board approving Matt Busby as the new Chair of TRWC. Director Rhineheimer motioned for the approval of Matt Busby and Director Mooney second the motion. All Board members who were in favor signaled by saying aye; there was no opposition, the motion passed unanimously.

11) Retirement Recognition

Chair Kross

Chair Kross thanked everyone for all the time and effort over the years and reflected on his time with TRWC. Director Shaw, former Director Pombier, and others shared memorable moments of working with John.

12) Adjournment

Director Busby motioned for adjournment at 1:28. Director Butler second the motion. All Board members who were in favor signaled by saying aye; there was no opposition, the motion passed unanimously.

Date: August 21, 2023
To: TOPAZ Regional Wireless Cooperative (TRWC) Board of Directors
Through: Dale Shaw, TRWC Executive Director
From: Chuck Craig, IT Manager
Subject: NEW EXPANSION POLICY

RECOMMENDATION

I recommended that the policy be adopted which would codify the TRWC's position on funding of radio system site expansion.

BACKGROUND:

New or existing members that request an expansion in TRWC coverage will bear the cost of the requested expansion.

The proposal is intended to provide a more reasonable cost distribution for expansion into areas that do not directly benefit all members while continuing to provide financial participation in support of peripheral use of the proposed expansion. This recommendation is for new expansion only and does not affect O&M or upgrades of existing TRWC systems.

	System Expansion Funding Policy	
Owner: See Below	Created: August 21, 2023	Applicability: See Below
Category: Site Expansion	Revised: August 21, 2023	
	Last Review: Aug. 21, 2023	

1.0 Purpose

1.1. The purpose of this policy is to establish the methodology for preparing Member cost distribution associated with TRWC radio system expansion.

2.0 Owner

2.1. Administrative Manager

3.0 Applies To

3.1 Area Managers, Members, Associated, Interoperability Participants, and Conditional Participants that have operational subscribers on the TOPAZ (Trunked OPen AriZona) Regional Wireless Cooperative (TRWC) network.

4.0 Background

4.1 Expansion of the TRWC radio system coverage has historically been funded by all full Members because most Members generally benefited from the expansion. As the TRWC service areas have grown geographically, not all Members are benefiting from a specific expansion, warranting a more equitable approach to funding the expansion.

5.0 Policy Statement

5.1 Budget preparation for Member cost distribution relating to TRWC system expansion will be based on the principal that the new or existing member(s) that require the expansion will bear the cost commensurate to their anticipated benefit of the expansion.

6.0 Supporting Rules

6.1 Requests and/or requirements for expanded radio coverage shall be forwarded to the Administrative Manager detailing the area where enhanced coverage is needed.

6.2 Once expanded covered needs are identified, the Administrative Manager will initiate a predictive land mobile radio (LMR) Coverage study. The benefiting member agencies shall reimburse the Administrative Manager for the study by through special assessment.

6.3 Where applicable, Member(s) will help determine basic study parameters, such as frequency band and technology, site location, antenna characteristics, power limitations and receiver equipment (mobile, portable) that will help produce the predictive coverage model.

6.4 The Administrative Manager shall review the predictive coverage and provide the requesting agency with an evaluation of the area covered and indicate which TRWC members, if any, are anticipated to benefit from the proposed expansion.

6.5 As determined by the Administrative Manager, all members that are anticipated to benefit from the expansion (through the study) shall participate financially in increments of 10% that proportionally represent additional coverage provided by the expansion falling within each member's boundaries.

6.6 Coverage calculations will be rounded to 10ths and determined by Administrative Manager staff or consultant(s).

6.6.1 It should be noted that measuring signal quality may be more important than simple coverage.

6.6.2 The study will indicate Digital Audio Quality (DAQ) for the area in question, along with predicted reliability for talk-in, talk-out, on-street and in-building coverage.

7.0 Responsibilities

7.1 The management of the TRWC infrastructure is the responsibility of the Administrative Manager.

7.2 The Administrative Manager will contract for the predictive coverage study.

7.2.1 Benefiting Member(s) shall fund the predictive study through special assessment,

7.3 The Administrative Manager will provide study results and cost distribution recommendations to the TRWC Executive Committee

7.4 The TRWC Executive Committee shall elicit the cooperation of potential funding partners as part of the overall funding process

Date: October 2, 2023

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

Through: Dale Shaw, TRWC Executive Director

From: Chuck Craig, IT Manager

Subject: NEW BUILDING TREATMENT POLICY

RECOMMENDATION

I recommend that the existing policy regarding Fire Code Compliance/ In-Building Treatments be modified to more closely follow Federal fire code guidelines.

BACKGROUND:

All members of the TRWC should follow a standard process to determine if a Bi-Directional Antenna or Distributed Antenna systems is needed in all new or remodeled buildings.

This modified policy builds on the prior requirements and better aligns the TRWC with the RWC policy and Federal Fire Code guidelines. The policy is intended to serve as a resource for building developers, contractors, and others to ensure compliance with fire codes regarding the permitting, installation, inspection, maintenance, and operation of the in-building radio amplification systems such as Bi-Directional Antenna (BDAs) and Distributed Antenna Systems (DASs).



Subject: Radio Amplification Systems Policy Effective Date:10/05/2023
Policy #: 10 Rev: 2.0

1.0 Purpose

1.1. The purpose of this policy is to provide standards for the deployment of radio amplification systems to improve radio signal coverage inside of buildings and underground spaces on the TOPAZ Regional Wireless Cooperative (TRWC) network.

2.0 Owner

2.1. TRWC Operations Working Group (OWG).

3.0 Applies To

3.1. Any entity installing radio amplification systems within the TRWC service area and on the Federal Communications Commission (FCC) frequencies licensed by a TRWC Member(s).

4.0 Background

- 4.1. Radio amplification systems are used to enhance radio signals within buildings, structures, or other locations where signals would otherwise be inadequate.
- 4.2. Improperly installed or maintained amplification systems can cause interference or degrade radio performance.
- 4.3. FCC 47 CFR Part 90.219 Use of Signal Boosters and 47 CFR Part 2 FCC Certification Requirements govern use and certification of radio amplification systems.
- 4.4. Radio amplification systems may include Bi-Directional Amplifiers (BDA), Distributed Antenna Systems (DAS) or other active devices designed to amplify radio signals.

5.0 Policy Statement

- 5.1. The TRWC will not be responsible for installation, upgrades, maintenance, or replacement of radio amplification systems.
- 5.2. Entities desiring to operate radio amplification systems on a TRWC Member’s licensed frequencies and within the service area of the TRWC network must obtain written

consent and approval from the licensee.

5.1.1. A TRWC Rebroadcast Application must be submitted prior to energizing any system. This form can be found at topazrwc.org.

5.3. TRWC network licensed frequencies are managed by a Network Managing Member.

6.0 Supporting Rules

- 6.1. The TRWC will provide the installation contractor with the appropriate donor site for use.
- 6.2. The TRWC does not require entities to maintain any minimum coverage requirements within buildings or structures; however, individual cities may have their own rules or ordinances.
- 6.3. Documents which must be submitted for review along with the TRWC Rebroadcast Application:
 - 6.3.1. Complete radio amplification system design including site floorplan with antenna and equipment locations and a riser block diagram showing all floors.
 - 6.3.2. Itemized list of equipment used including manufacturer make and model numbers.
 - 6.3.3. Initial pre-treatment grid study testing documentation based on provided TRWC donor site and channel data.
- 6.4. Any new radio amplification system (signal booster), must be Class A channelized signal booster. A signal booster designed to retransmit signals on one or more specific channels. A signal booster is deemed to be a Class A signal booster if none of its passbands exceed 75 kHz.
- 6.5. Radio amplification installation contractors must follow the Authority Having Jurisdiction (AHJ) fire code pertaining to radio amplification installations.
- 6.6. Installation of radio amplification systems must follow National Fire Protection Association (NFPA) and/or National Electrical Code (NEC) jurisdictional standards.
- 6.7. Multiple building campuses with more than one (1) building sharing the same address requires a single campus wide solution if a radio amplification system is needed.
 - 6.7.1. A fiber DAS system would be required for all buildings located on the same parcel as identified by the county assessor's office.
 - 6.7.2. If a building requires more than a single BDA, per manufacturer installation recommendations, then a fiber DAS system would be required.
- 6.8. Prior to energizing any new system, notification must be provided to the TRWC OWG to include the location and specific time and date to ensure no system interference occurs.

7.0 Responsibilities

- 7.1. Prior to being energized the system design must be provided to the TRWC.
- 7.2. Contractor must inform the TRWC of the location, time, and date of energizing the

system to ensure no radio system interference occurs. Energizing of any system must occur during TRWC business hours. Monday through Thursday 0530-1600 local.

- 7.3. Once the ERRCS is energized, detailed measurements of signal strength of all areas enhanced must be provided.
- 7.4. In the event of interference or malfunction of radio amplification systems, the entity responsible for its installation and/or operation shall discontinue operation of the system until it is repaired or interference has been eliminated. The TRWC will work with an offending entity to resolve problems due to interference, pursuant to CFR 90.173(b).

8.0 Conditions for Exemption or Waiver

- 8.1. As provided in the Waiver or Exception Policy.

9.0 Applicable Policies and/or Procedures

- 9.1. As listed at <http://topazrwc.org/>



Date: October 5, 2023
To: Topaz Regional Wireless Cooperative (TRWC) Board of Directors
From: Dale Shaw, TRWC Executive Director
Rob Duggan, TRWC Executive Committee Co-chairman
Jason King, TRWC Executive Committee Co-chairman
Subject: Fiscal Year 2024/2025 Budget

Recommendation

The TRWC Executive Director and Executive Committee recommends the review and consideration of the Preliminary TRWC Budget (attached) in the amount of \$8,985,836 for Fiscal Year 2024/2025.

Background & Discussion

The attached Preliminary Budget for Fiscal Year 2024/2025 has been under review and endorsed by the TRWC Executive Committee. When compared to the current 2023/2024 Fiscal Year Budget, the proposed Operating & Maintenance expenses will increase by \$654,203 (predominately due to increases in staffing, equipment maintenance, and support contract costs). When compared to the previously presented forecast, Capital expenditures will increase by \$2,788,332 (predominately due to expansion sites development, device interoperability improvements, and various equipment lifecycle upgrade costs).

Fiscal Impact

The Preliminary Budget represents the total planned contribution by all member agencies for the ongoing operation, maintenance, and improvement of the TRWC radio network. Each member agency will be invoiced as actual expenditures occur on a monthly basis using the cost allocation methodology outlined in the adopted Budget.

TOPAZ
Detail of Operating and Maintenance
Fiscal Year 2022/ 2023

Description	Year to Date Through June 30, 2023 - 13th Month					
	Budget	Updated Forecast	YTD Forecast*	YTD Actual	\$ Var From YTD Forecast Incr/(Decr)	% Var
Personnel Services	\$ 366,626	\$ 366,626	\$ 366,626	\$ 459,983	\$ 93,357	25%
Insurance Premiums	8,994	8,994	8,994	-	(8,994)	-100%
Temp Services	6,349	6,349	6,349	2,338	(4,011)	-63%
Leases and Rents - Land	26,770	26,770	26,770	24,088	(2,682)	-10%
Professional Services - Consulting	95,515	95,515	95,515	204,782	109,267	114%
Professional Services - Other-combining legal, consulting	242,322	242,322	242,322	59,682	(182,640)	-75%
Utilities	72,685	72,685	72,685	71,430	(1,255)	-2%
Telephone	3,598	3,598	3,598	4,012	414	12%
Networking Subscription Costs	12,000	12,000	12,000	0	(12,000)	-100%
Repairs & Maintenance	32,801	32,801	32,801	36,397	3,596	11%
Equipment Usage (Vehicles)	21,162	21,162	21,162	25,295	4,133	20%
All Other Services	40,760	40,760	40,760	575	(40,185)	-99%
Sub-total Services	562,956	562,956	562,956	428,599	(134,357)	-24%
Motorola Contract	975,000	975,000	975,000	850,586	(124,414)	-13%
Juniper Software	67,562	67,562	67,562	-	(67,562)	-100%
Materials & Parts	31,054	31,054	31,054	10,656	(20,398)	-66%
Non Cap Assets	13,226	13,226	13,226	3,708	(9,518)	-72%
All Other Commodities	-	-	-	-	-	0%
Sub-total Commodities	1,086,842	1,086,842	1,086,842	864,950	(221,892)	-20%
Subtotal O&M	2,016,424	2,016,424	2,016,424	1,753,532	(262,892)	-13%
Contingency - 1.5% of total O&M	29,487	29,487	29,487	-	(29,487)	-100%
VHF Operations	55,761	55,761	55,761	-	(55,761)	-100%
Total	\$ 2,101,672	\$ 2,101,672	\$ 2,101,672	\$ 1,753,532	\$ (348,140)	-17%

*YTD Forecast represents 12 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 Capital Projects
Fiscal Year 2022/ 2023

Year to Date Through June 30, 2023 13th Month

Project	Project ID	Budgeted	YTD Forecast*	YTD Actual	\$ Var	
					From YTD Forecast	% Var
					Incr/(Decr)	
Site Expansion #1	CP0091	1,764,822	1,764,822	212,889	\$ (1,551,933)	-87.94%
Site Expansion #2 WOL	CP0754CAP	790,276	790,276	21,062	\$ (769,214)	-97.33%
TOPAZ Voice Radio Network Upgrade	CN0022	\$ -	-	-	\$ -	0.00%
Upgrade Shaw Bute & Florence Gardens to P25 Phase II	CP0906	574,812	574,812	-	(574,812)	-100.00%
Wireless Backhual (Microwave) Network Lifecycle Upgrade	LF0403CAP	167,265	167,265	5,850	(161,415)	-96.50%
Enhanced Data TBD		371,000	371,000	-	(371,000)	-100.00%
System-of-Systems Networking	CP0438	-	-	-	-	0.00%
Fire Hazard Zone System Coverage Improvement & Expansion	CP0907	475,320	475,320	47,373	(427,947)	-90.03%
Fire Hazard Zone System Lifecycle Upgrade	LF0465CAP	147,500	147,500	-	(147,500)	-100.00%
Fire Hazard Zone System Simulcast Timing Reference Lifecycle Upgrade	LF0402POM	43,238	43,238	191	(43,047)	-99.56%
System-of-Systems	CP0905	-	-	-	-	0.00%
Florence Gardens ISR Site Lifecycle upgrade	LF0224	-	-	-	-	0.00%
Radio & Core Sites Battery Backup Lifecycle Upgrade	LF0266	31,910	31,910	-	(31,910)	-100.00%
Radio Sites Emergency Power Upgrade	LF0226	172,533	172,533	86,330	(86,203)	-49.96%
Communications Building UPS Battery Replacement	LF0228	17,700	17,700	-	(17,700)	-100.00%
Internet Protocol Network Routers & Switches Upgrade	LF0248	-	-	-	-	0.00%
Antenna & Transmission Lines Lifecycle Upgrade	LF0282	-	-	-	-	0.00%
Consulting Services for VHF & 7/800 MHz Coverage Expansion		40,000	40,000	-	(40,000)	-100.00%
Total Capital Projects		\$ 4,596,376	\$ 4,596,376	\$ 373,695	\$ (4,222,681)	-91.87%
Capital Assessment to Members						
Mesa	67.55%	1,226,380	1,226,380	244,657	(981,723)	-80.05%
Gilbert	19.60%	355,841	355,841	62,170	(293,671)	-82.53%
Apache Junction	9.22%	167,391	167,391	38,820	(128,571)	-76.81%
Ft McDowell	2.23%	40,486	40,486	6,128	(34,358)	-84.86%
Superstition Fire & Medical	0.72%	13,072	13,072	2,948	(10,124)	-77.45%
Queen Creek	0.65%	11,801	11,801	18,824	7,023	59.51%
Rio Verde	0.03%	545	545	149	(396)	-72.66%
Total Assessment to Members	100.00%	\$ 1,815,516	\$ 1,815,516	\$ 373,696	\$ (1,441,820)	-79.42%

*YTD Forecast represents 12 months of project costs plus any contractual expenses already incurred (i.e. one time payments).

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

ESCALATION FACTOR

Salaries and Wages (New hire Radio Shop Personnel, Salaries up, Actually charging time to TRWC)

Total Labor

ESCALATION FACTOR (Dropping down from 8% to 6% assuming no hyperinflation)

GENERAL & ADMINISTRATIVE - OTHER SERVICES

Temp Services
 Prof Services - TRWC Executive Director
 Prof Services - Legal, Consulting & Other (No Security study set past 23/24)
 Ins. Premiums - Agencies
 Utilities
 Telephone
 Repairs & Maint (Cost of items up)
 Equipment Usage (Vehicles)
 Shaw Butte & Florence Gardens
 Training
 Travel
 Networking Subscription Costs -(FirstNet)
 All Other Services

TOTAL OTHER SERVICES

GENERAL & ADMINISTRATIVE - COMMODITIES

Non Cap Assets
 Contract - Motorola (Preventative & Security Monitoring) (New Radio site 23/24 & maint)
 Software Maint-Avail,Juniper
 Materials & Repair Parts
 All Other Commodities

TOTAL COMMODITIES

OTHER BUDGET ITEMS

PROPOSED CONTINGENCY - 5.0% (Cost up for Repairs, Vehicles, Personal Services)

VHF OPERATIONS Equipment Repair

VHF Equipment Staff Time

TOTAL OTHER BUDGET ITEMS

Total Operating & Maintenance

O&M - AIRTIME PERCENTAGE (1)

Mesa
 Gilbert
 Apache Junction
 Ft McDowell
 Superstition Fire & Medical
 Queen Creek
 Rio Verde
 Southwest Ambulance
 American Medical Response
Total

VHF SPECIAL ASSESSMENT (2)

Mesa Fire & Medical
 Gilbert Fire
 Superstition Fire & Medical
 Queen Creek Fire
 Rio Verde Fire
Total

ANNUAL ESTIMATED REVENUE: OPERATING & MAINTENANCE

Mesa
 Gilbert
 Apache Junction
 Ft McDowell
 Superstition Fire & Medical
 Queen Creek
 Rio Verde
 Southwest Ambulance
 American Medical Response
TOTAL

	FY 23/24 DRAFT BUDGET	FY 24/25 DRAFT BUDGET	Straightline FORECAST				
			FY 25/26	FY 26/27	FY 27/28	FY 28/29	FY 29/30
		3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
	\$ 777,727	\$ 801,059	\$ 825,091	\$ 849,843	\$ 875,339	\$ 901,599	\$ 928,647
	\$ 777,727	\$ 801,059	\$ 825,091	\$ 849,843	\$ 875,339	\$ 901,599	\$ 928,647
		6.00%	6.00%	6.00%	6.00%	6.00%	6.00%
	\$ 6,857	\$ 7,268	\$ 7,705	\$ 8,167	\$ 8,657	\$ 9,176	\$ 9,727
	\$ 103,156	\$ 109,345	\$ 115,906	\$ 122,860	\$ 130,232	\$ 138,046	\$ 146,329
	\$ 186,708	\$ 205,000	\$ 143,100	\$ 151,686	\$ 160,787	\$ 170,434	\$ 180,660
	\$ 9,714	\$ 10,297	\$ 10,915	\$ 11,570	\$ 12,264	\$ 13,000	\$ 13,779
	\$ 87,920	\$ 93,195	\$ 98,787	\$ 104,714	\$ 110,997	\$ 117,657	\$ 124,716
	\$ 3,886	\$ 4,119	\$ 4,366	\$ 4,628	\$ 4,906	\$ 5,200	\$ 5,512
	\$ 37,551	\$ 59,706	\$ 63,288	\$ 67,086	\$ 71,111	\$ 75,377	\$ 79,900
	\$ 24,226	\$ 25,680	\$ 27,220	\$ 28,854	\$ 30,585	\$ 32,420	\$ 34,365
	\$ 26,770	\$ 26,770	\$ 28,376	\$ 30,079	\$ 31,883	\$ 33,797	\$ 35,824
	\$ 22,010	\$ 23,331	\$ 24,730	\$ 26,214	\$ 27,787	\$ 29,454	\$ 31,222
	\$ 22,010	\$ 23,331	\$ 24,730	\$ 26,214	\$ 27,787	\$ 29,454	\$ 31,222
	\$ 12,960	\$ 13,738	\$ 14,562	\$ 15,436	\$ 16,362	\$ 17,343	\$ 18,384
	-	-	-	-	-	-	-
	\$ 543,768	\$ 601,779	\$ 563,686	\$ 597,507	\$ 633,358	\$ 671,359	\$ 711,641
	\$ 14,284	\$ 14,020	\$ 14,861	\$ 15,753	\$ 16,698	\$ 17,700	\$ 18,762
	\$ 1,082,910	\$ 1,147,311	\$ 1,159,386	\$ 1,194,165	\$ 1,217,222	\$ 1,240,962	\$ 1,315,420
	\$ 72,967	\$ 77,345	\$ 81,986	\$ 86,905	\$ 92,119	\$ 97,646	\$ 103,505
	\$ 33,538	\$ 35,550	\$ 37,683	\$ 39,944	\$ 42,341	\$ 44,881	\$ 47,574
	-	-	-	-	-	-	-
	\$ 1,203,699	\$ 1,274,226	\$ 1,293,916	\$ 1,336,767	\$ 1,368,380	\$ 1,401,190	\$ 1,485,261
	\$ 126,260	\$ 133,853	\$ 141,884	\$ 150,397	\$ 159,421	\$ 168,986	\$ 179,126
	\$ 28,795	\$ 30,523	\$ 32,354	\$ 34,295	\$ 36,353	\$ 38,534	\$ 40,846
	\$ 31,426	\$ 33,312	\$ 35,310	\$ 37,429	\$ 39,675	\$ 42,055	\$ 44,578
	\$ 186,481	\$ 197,687	\$ 209,548	\$ 222,121	\$ 235,449	\$ 249,576	\$ 264,550
	\$ 2,711,674	\$ 2,874,752	\$ 2,892,242	\$ 3,006,239	\$ 3,112,525	\$ 3,223,723	\$ 3,390,099
	65.06%	65.06%	65.06%	65.06%	65.06%	65.06%	65.06%
	16.45%	16.45%	16.45%	16.45%	16.45%	16.45%	16.45%
	10.41%	10.41%	10.41%	10.41%	10.41%	10.41%	10.41%
	1.70%	1.70%	1.70%	1.70%	1.70%	1.70%	1.70%
	0.82%	0.82%	0.82%	0.82%	0.82%	0.82%	0.82%
	5.07%	5.07%	5.07%	5.07%	5.07%	5.07%	5.07%
	0.04%	0.04%	0.04%	0.04%	0.04%	0.04%	0.04%
	0.29%	0.29%	0.29%	0.29%	0.29%	0.29%	0.29%
	0.16%	0.16%	0.16%	0.16%	0.16%	0.16%	0.16%
	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
	66.85%	66.85%	66.85%	66.85%	66.85%	66.85%	66.85%
	18.81%	18.81%	18.81%	18.81%	18.81%	18.81%	18.81%
	8.11%	8.11%	8.11%	8.11%	8.11%	8.11%	8.11%
	5.73%	5.73%	5.73%	5.73%	5.73%	5.73%	5.73%
	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
	\$ 1,765,293	\$ 1,871,456	\$ 1,882,904	\$ 1,957,143	\$ 2,026,370	\$ 2,098,797	\$ 2,207,128
	\$ 447,492	\$ 474,403	\$ 477,371	\$ 496,219	\$ 513,805	\$ 532,204	\$ 559,687
	\$ 276,016	\$ 292,617	\$ 294,038	\$ 305,483	\$ 316,099	\$ 327,200	\$ 344,017
	\$ 45,075	\$ 47,786	\$ 48,018	\$ 49,887	\$ 51,620	\$ 53,433	\$ 56,179
	\$ 26,626	\$ 28,226	\$ 28,649	\$ 29,880	\$ 31,065	\$ 32,309	\$ 34,026
	\$ 137,879	\$ 146,171	\$ 147,083	\$ 152,890	\$ 158,307	\$ 163,975	\$ 172,442
	\$ 1,362	\$ 1,444	\$ 1,468	\$ 1,532	\$ 1,595	\$ 1,660	\$ 1,749
	\$ 7,689	\$ 8,152	\$ 8,191	\$ 8,510	\$ 8,806	\$ 9,115	\$ 9,584
	\$ 4,242	\$ 4,497	\$ 4,519	\$ 4,695	\$ 4,858	\$ 5,029	\$ 5,287
	\$ 2,711,674	\$ 2,874,752	\$ 2,892,242	\$ 3,006,239	\$ 3,112,525	\$ 3,223,723	\$ 3,390,099

(1) Normal partner assessments are allocated based on the July 2022 6-month rolling average airtime and will change based on actual monthly data.

\$ - \$ - \$ - \$ - \$ - \$ - \$ - \$ -

TRWC Capital Budget Plan

PROJECT	ID	Proposed new with Carry over FY 22/23	Final FY 22/23	Proposed FY 23/24 From last year	New Draft FY 23/24 W/ Carry Over	New Proposal					New Proposal FY 29/30	TOTAL 6 Years	23/24 Difference (Carry over)
						24/25	FY 25/26	FY 26/27	FY 27/28	FY 28/29			
ESCALATION FACTOR													
Site Expansion #1 H60 Includes \$1444,522 roll forward from 22-23	CP0091	1,444,522	2,585,895	570,640	2,015,162	570,640	-	-	-	-	-	\$ 2,585,802	\$ 1,444,522
Site Expansion #2 WOL	CP0754	708,890	790,276	1,033,111	1,742,001	1,126,432	-	-	-	-	-	\$ 2,868,433	\$ 708,890
Site Expansion #3 QC Land Purchase	CP0779	-	-	475,000	475,000	1,487,300	1,200,000	1,134,505	-	-	-	\$ 4,296,805	\$ -
Interface for non-Motorola Dispatch Console	CP0812	-	-	-	-	225,000	-	-	-	-	-	\$ 225,000	\$ -
Upgrade Shaw Butte and Florence Gardens to P25 Phase II (TDMA)	CP0906	526,911	477,406	-	526,911	-	-	-	-	-	-	\$ 526,911	\$ 526,911
Radio Sites Emergency Power Upgrade	LF0226	71,825	172,263	-	71,825	-	-	-	-	-	-	\$ 71,825	\$ 71,825
Communications Building UPS Battery Replacement	LF0228	17,700	17,700	-	17,700	-	-	18,036	-	-	-	\$ 35,736	\$ 17,700
Internet Protocol Network Routers & Switches Upgrade (Work in FY25)	LF0248	-	-	480,000	480,000	513,600	549,552	256,800	-	-	-	\$ 1,799,952	\$ -
Radio & Core Sites Battery Backup Lifecycle Upgrade (CRS)	LF0266	31,910	31,910	30,000	61,910	90,000	96,300	103,041	-	-	-	\$ 351,251	\$ 31,910
Radio & Core Sites DC Power Plant Lifecycle Upgrade	LF0267	-	-	-	-	-	-	750,000	802,500	-	-	\$ 1,552,500	\$ -
Enhanced data TBD New Project	New	371,000	371,000	-	371,000	-	-	-	-	-	-	\$ 371,000	\$ 371,000
TOPAZ P25 Voice Radio Network Lifecycle Upgrade (FY27)	New	-	-	-	-	350,000	8,000,000	8,000,000	8,000,000	8,000,000	1,250,000	\$ 33,600,000	\$ -
Wireless Backhaul (Microwave) Network Lifecycle Upgrade (Includes Antennas and tower work 5 microwave shots) Added years to project	LF0403CAP	147,476	167,265	284,000	431,476	420,000	-	-	-	-	-	\$ 851,476	\$ 147,476
Relocate CRS radio site (Lindsey/McDowell FS)		-	-	-	-	100,000	225,000	225,000	122,504	131,080	140,255	\$ 715,329	\$ -
Tower (infrastructure) upgrade/replacement	NEW LF	-	-	-	-	-	107,000	114,490	-	-	-	\$ -	\$ -
Sub-total		3,320,234	4,613,715	2,872,751	6,192,985	4,882,972	10,177,852	9,851,872	8,872,504	8,933,580	1,390,255	\$ 50,302,020	\$ 3,320,234
Fire Hazard Zone System Coverage Improvement and Expansion (Gilbert/Queen Creek)	CP0907	-	566,700	450,000	450,000	250,000	267,500	286,225	306,261	327,699	350,638	\$ 2,238,323	\$ -
Fire Hazard Zone System Lifecycle Upgrade Router Refresh replacement in FY25	LF0465CAP	147,500	147,500	-	147,500	-	-	-	-	-	-	\$ 295,000	\$ 147,500
Fire Hazard Zone System Simulcast Timing Reference Lifecycle Upgrade	LF0402POM	-	69,743	-	-	-	-	-	-	-	-	\$ -	\$ -
	New	-	-	-	-	-	-	-	-	-	-	\$ -	\$ -
Sub-total VHF Special Assessment Projects		147,500	783,943	450,000	597,500	250,000	267,500	286,225	306,261	327,699	350,638	\$ 2,385,823	\$ 147,500
Total Capital & Fire Special Assessment Projects		\$ 3,467,734	\$ 5,397,658	\$ 3,322,751	\$ 6,790,485	\$ 5,132,972	\$ 10,445,352	\$ 10,138,097	\$ 9,178,765	\$ 9,261,279	\$ 1,740,893	\$ 52,687,843	\$ 3,467,734
Capital Assessment to Members													
Mesa	65.37%	2,170,436	3,015,985	1,567,410	3,737,847	2,478,616	5,868,822	5,698,543	5,799,956	5,839,881	908,810	30,332,475	
Gilbert	16.52%	548,503	762,186	396,108	944,611	806,666	1,483,141	1,440,109	1,465,738	1,475,827	229,670	7,845,762	
Apache Junction	10.45%	346,964	482,133	250,565	597,529	510,271	938,186	910,965	927,177	933,559	145,282	4,962,969	
Ft McDowell	1.71%	56,776	78,895	41,002	97,778	83,499	153,521	149,067	151,720	152,764	23,773	812,122	
Superstition Fire & Medical	0.82%	27,226	37,832	19,662	46,887	40,040	73,618	71,482	72,755	73,255	11,400	389,437	
Queen Creek	5.09%	169,000	234,838	122,046	291,045	248,543	456,973	443,714	451,610	454,719	70,764	2,417,368	
Rio Verde	0.04%	1,328	1,845	959	2,287	1,953	3,591	3,940	3,548	3,572	555	19,446	
Sub-total	100.00%	3,320,233	4,613,714	2,397,752	5,717,984	4,169,588	8,977,852	8,717,820	8,872,504	8,933,577	1,390,254	46,779,579	
VHF Special Assessment													
Mesa Fire & Medical	66.85%	98,604	524,066	300,825	399,429	167,125	178,824	191,341	204,735	219,067	234,402	1,594,923	
Gilbert Fire	18.81%	27,745	147,460	84,645	112,390	47,025	50,317	53,839	57,608	61,640	65,955	448,774	
Superstition Fire & Medical	8.11%	11,962	63,578	36,495	48,457	20,275	21,694	23,213	24,838	26,576	28,437	193,490	
Queen Creek Fire	5.73%	8,452	44,920	25,785	34,237	14,325	15,328	16,401	17,549	18,777	20,092	136,709	
Rio Verde Fire	0.50%	738	3,920	2,250	2,988	1,250	1,338	1,431	1,531	1,638	1,753	11,929	
Sub-total	100.00%	147,501	783,944	450,000	597,501	250,000	267,501	286,225	306,261	327,698	350,639	2,385,825	
Special Assesment SAU													
Mesa-\$40,825.09 tax added to 23/24		-	-	-	-	-	800,719	800,719	800,719	800,719	-	3,202,876	
Gilbert (\$400,000 billed directly to Gilbert upon contract signing)\$7,069.15 tax added to 23/24 Console Upgrade from MCC 7500 to AXS (1) Gilbert		-	-	-	-	198,196	124,974	129,568	134,300	139,174	-	726,211	
Ft McDowell \$3,926.01 tax added to 23/24		-	-	-	-	-	73,267	73,267	73,267	73,267	-	293,068	
		400,000	-	-	-	198,196	998,960	1,003,554	1,008,286	1,013,160	\$ -	4,222,155	
Console Upgrade from MCC 7500 to AXS (1)	New	-	-	77,683	77,683	120,513	124,974	1,354,615	1,359,347	1,364,221	\$ -	\$ 4,479,035	
Sub-total AXS Console Upgrade Special Assessment Projects				77,683	77,683	120,513	124,974	1,354,615	1,359,347	1,364,221	\$ 350,639	4,479,035	
QC Site Expansion Special Assessment				475,000	475,000	1,097,300	1,200,000	1,134,505	-	-	-	3,906,805	
QC Site Expansion Special Assessment (Mesa share)				-	-	396,000	-	-	-	-	-	396,000	
Total QC expansion Site				475,000	475,000	1,493,300	1,200,000	1,134,505	-	-	-	4,302,805	
Total Capital + Fire Special Assessment + AXS													
Mesa		2,269,039	3,540,051	1,868,235	4,137,276	3,041,741	6,047,646	5,889,884	6,004,691	6,058,948	1,143,212	32,323,398	
Gilbert		576,248	909,646	480,753	1,057,001	1,051,887	2,532,418	2,497,502	2,531,632	2,550,627	295,625	12,516,691	
Apache Junction		346,964	482,133	250,565	597,529	510,271	938,186	910,965	927,177	933,559	145,282	4,962,969	
Ft McDowell		56,776	78,895	41,002	97,778	83,499	153,521	149,067	151,720	152,764	23,773	812,122	
Superstition Fire & Medical		39,188	101,410	56,157	95,344	60,315	95,312	94,695	97,593	99,831	39,837	582,927	
Queen Creek		177,452	279,758	622,831	800,282	1,360,168	1,672,301	1,594,620	469,159	473,496	90,856	6,460,882	
Rio Verde		2,066	5,765	3,209	5,275	3,203	4,929	5,371	5,079	5,210	2,308	31,375	
Total		3,467,733	5,397,658	3,322,752	6,790,485	6,111,084	11,444,313	11,142,104	10,187,051	10,274,435	1,740,893	57,690,364	

(1) Console cost will be incurred in the last 3 years of the SUA, Gilbert's will be over the entire 6 years



Date: October 5, 2023
To: Topaz Regional Wireless Cooperative (TRWC) Board of Directors
From: Dale Shaw, TRWC Executive Director
Rob Duggan, TRWC Executive Committee Co-chairman
Jason King, TRWC Executive Committee Co-chairman
Subject: Fountain Hills Membership Approval

Recommendation

The TRWC Executive Director and Executive Committee recommend that the TRWC Board of Directors approve the application and admission of Fountain Hills to the TRWC as a member, subject to the conditions outlined below.

Background & Discussion

Fountain Hills is establishing a town-owned and operated Fire Department and has contracted with the City of Mesa to provide dispatch services. In conjunction with this, Fountain Hills has requested admission to the TRWC. Staff, in coordination with the TRWC Executive Committee, has worked with Fountain Hills to identify the optimal approach to support its communications needs. Staff is comfortable that the Fountain Hills admission will be mutually beneficial for the TRWC members and the larger region.

Pursuant to the TRWC Governance Agreement at Section 2.1.5, certain prerequisites for an Applicants possible membership in the TRWC must be satisfied. In summary, these prerequisites (and the associated disposition) are as follows:

1. **The Applicant's written request for TRWC Membership:** This prerequisite has been satisfied and is attached for reference.
2. **The Board's decision to consider the Application:** Inclusive within the recommended action above.
3. **The Completion of an Impact Study of adding the Applicant as a Member:** In coordination with Administrative Manager staff, a Fountain Hills funded third-party coverage study has been performed and is attached for reference. No notable TRWC impacts are anticipated, as Fountain Hills has communicated their intent to operate with current coverage as-is (see conditions below).

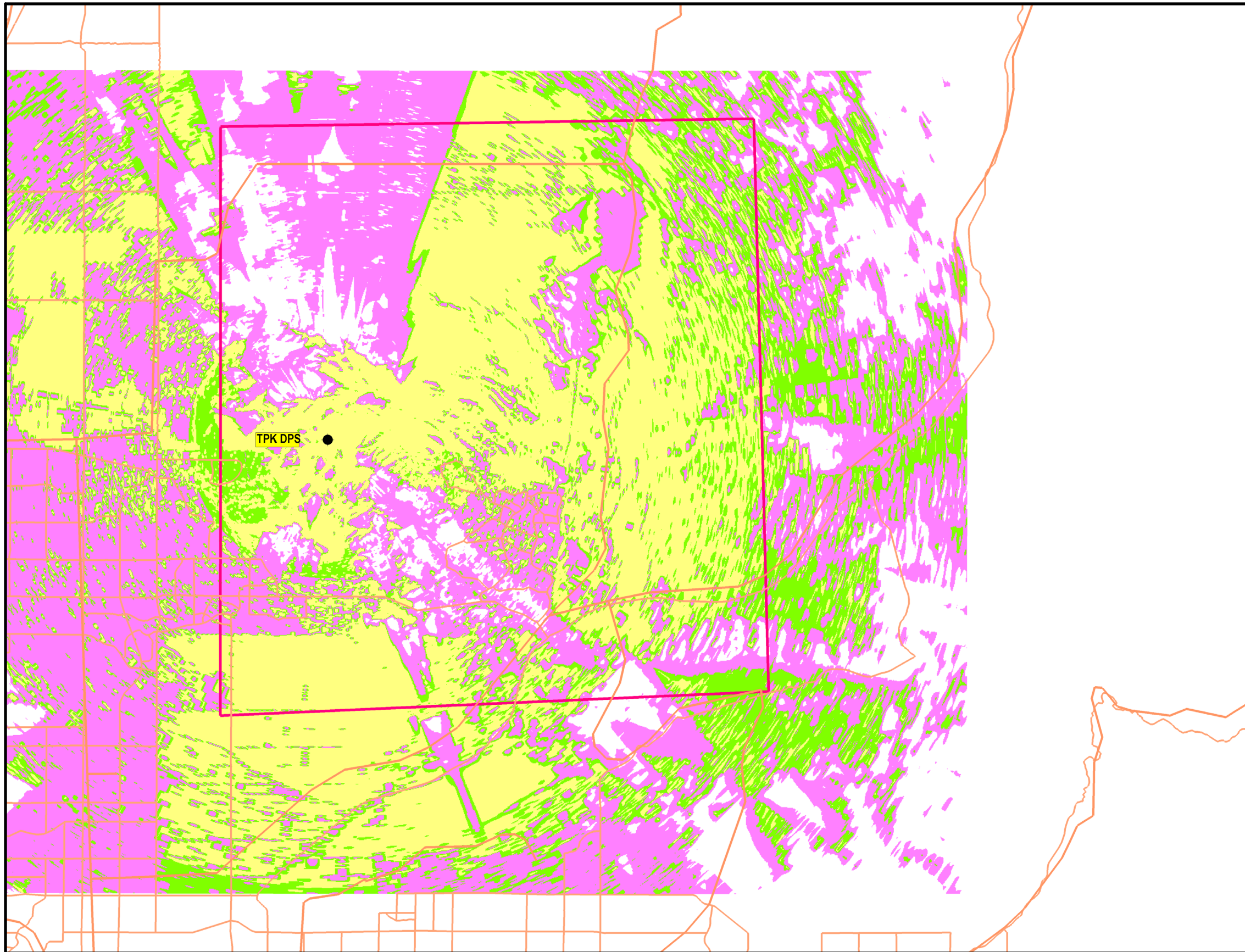
4. **The Applicant executing an agreement with the TRWC:** Fountain Hills has communicated their intent to execute the existing TRWC IGA and Governance agreements in Counterpart (see conditions below).
5. **The Applicant meeting all conditions imposed by the TRWC Board and the TRWC Governance Agreement:** Inclusive within the recommended action above (see conditions below).
6. **The Applicant qualifying under the criteria/evaluation factors established by the Board and/or Governance Agreement:** As reviewed and confirmed by TRWC legal counsel, Fountain Hills is subject to, and meets, all of the criteria to be a participating Member of the TRWC.

In consideration of the Fountain Hills Application and admission, we recommend the following conditions with the admission of Fountain Hills to the TRWC:

1. Fountain Hills will be primarily served from the Thompson Peak site and will accept any resulting coverage and network performance as-is; *with (1) no guaranties as to coverage and (2) no right to assert any claims against any TRWC Member, individual or entity based on the operation or maintenance of the TRWC Network as more fully stated in Section 8.1 of the Governance Agreement.* Furthermore, Fountain Hills also agrees that no network improvements (outside of any future planned capital projects) are required for ongoing Fountain Hills participation in the TRWC.
2. The Town of Fountain Hills must provide the Promenade location and facilities for network coverage and expansion or a substantial equivalent location and facilities to the location for network coverage and operational capacity of the Promenade location/facilities, along with a commitment by Fountain Hills to work with the TRWC for any needed facilities now or in the future.
3. No equity buy-in will be required for Fountain Hills admission to the TRWC, so they will therefore start with a \$0 equity balance, which will be adjusted through any future capital project assessments.
4. The Fountain Hills Town Council official resolution which will be recorded with the Maricopa County, Arizona, Recorder's Office that sufficiently codifies its acceptance of these conditions herein.
5. Fountain Hills executing, without modification, 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 the TRWC Governance Agreement as may be amended.

Fiscal Impact

Given the approach to admission, we do not anticipate any negative financial impact to the existing TRWC Members. Ongoing costs will be spread among all Members, including Fountain Hills, subject to cost distribution methodologies approved by the TRWC Board of Directors and established in policies.



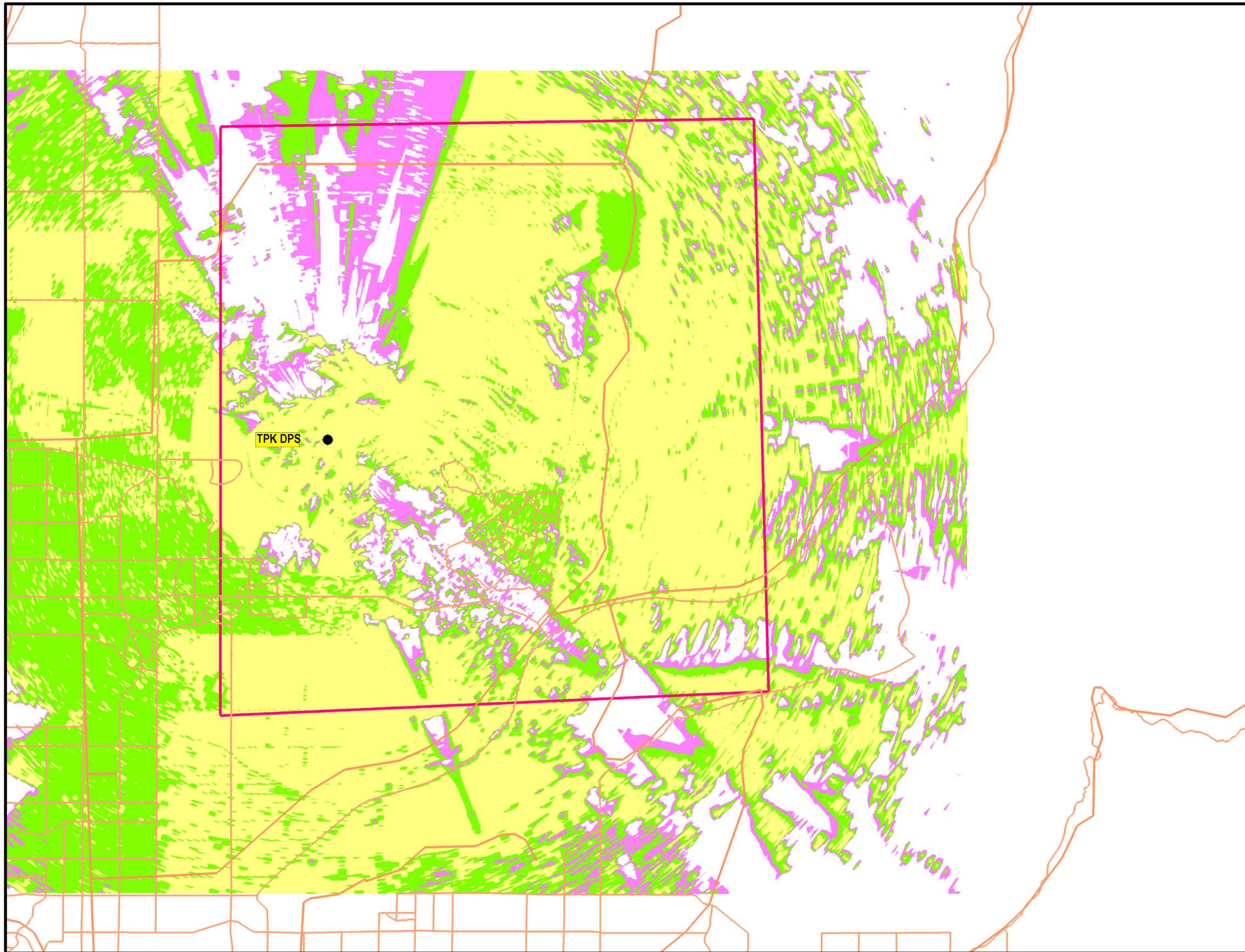
EDX® SignalPro®:

-  Major Roads
-  Service Area Boundary

Notes
 Yellow: Areas w/ DAQ 3.4 or better portable inbuilding coverage
 Green: Areas w/ DAQ 3.4 or better portable on-street coverage
 Pink: Areas w/ DAQ 3.4 or better mobile on-street coverage
 White: Areas w/ audio quality less than DAQ 3.4



Mesa Coverage Study for Fountain Hills
 Study #2Talk-In Coverage
 Mobile, Portable on-street and in-bldg



EDX® SignalPro®:

- Major Roads
- Service Area Boundary

Notes
Yellow: Areas w/ DAQ 3.4 or better portable inbuilding coverage
Green: Areas w/ DAQ 3.4 or better portable on-street coverage
Pink: Areas w/ DAQ 3.4 or better mobile on-street coverage
White: Areas w/ audio quality less than DAQ 3.4



Mesa Coverage Study for Fountain Hills
Study #1 Talk-Out Coverage
Mobile, Portable on-street and in-bldg



TOWN OF FOUNTAIN HILLS

16705 E. Avenue of the Fountains, Fountain Hills, AZ 85268
480.816.5100 | Fax: 480.837.3145

Thursday, May 11, 2023

To: Dale Shaw
Executive Director, TRWC
C/O City of Mesa Information Technology Department
PO Box 1446
Mesa, AZ 85211

Dear Mr. Shaw,

The Town of Fountain Hills is requesting membership with the TRWC. We acknowledge that the membership is contingent on an executed IGA with the City of Mesa for dispatch through the Mesa Regional Dispatch Center (MRDC). We are currently in the process with the MRDC to complete all the necessary items for dispatch and approval.

The Town Attorney has reviewed the convenance that you sent over and has given it his approval. We will look to formalize that in an IGA in the future.

We are looking forward to being a contributing member to the TRWC and believe that it will be a good partnership.

Please let me know if there is anything that we can do to aid in this process.

Respectfully,

Dave Ott
Fire Chief
Fountain Hills Fire Department

TOPAZ
Detail of Operating and Maintenance
Fiscal Year 2023 / 2024

Year to Date Through August 31, 2023

Description	Budget	Updated Forecast	YTD Forecast*	YTD Actual	\$ Var	% Var
					From YTD Forecast	Incr/(Decr)
Personnel Services	\$ 777,727	\$ 777,727	\$ 149,563	\$ 122,229	\$ (27,334)	-18%
Insurance Premiums	9,714	9,714	1,619	-	(1,619)	-100%
Temp Services	6,857	6,857	1,143	-	(1,143)	-100%
Leases and Rents - Land	26,770	26,770	4,462	15,824	11,362	255%
Professional Services - Consulting	103,156	103,156	17,193	8,528	(8,665)	-50%
Professional Services - Other-combining legal, consulting	186,708	186,708	31,118	2,341	(28,777)	-92%
Utilities	87,920	87,920	14,653	11,709	(2,944)	-20%
Telephone	3,886	3,886	648	773	125	19%
Networking Subscription Costs	12,960	12,960	2,160	-	(2,160)	-100%
Repairs & Maintenance	37,551	37,551	6,259	15,313	9,054	145%
Equipment Usage (Vehicles)	24,226	24,226	4,038	1,803	(2,235)	-55%
All Other Services	44,020	44,020	7,337	582	(6,755)	-92%
Sub-total Services	543,768	543,768	90,630	56,873	(33,757)	-37%
Motorola Contract	1,082,910	1,082,910	180,485	582	(179,903)	-100%
Juniper Software	72,967	72,967	12,161	-	(12,161)	-100%
Materials & Parts	33,538	33,538	5,590	-	(5,590)	-100%
Non Cap Assets	14,284	14,284	2,381	-	(2,381)	-100%
All Other Commodities	-	-	-	-	-	0%
Sub-total Commodities	1,203,699	1,203,699	200,617	582	(200,035)	-100%
Subtotal O&M	2,525,194	2,525,194	440,810	179,684	(261,126)	-59%
Contingency - 5.0% of total O&M	126,260	126,260	21,043	-	(21,043)	-100%
VHF Operations	60,221	60,221	10,037	-	(10,037)	-100%
Total	\$ 2,711,675	\$ 2,711,675	\$ 471,890	\$ 179,684	\$ (292,206)	-62%

*YTD Forecast represents 2 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 Capital Projects
Fiscal Year 2023 / 2024

Year to Date Through August 31, 2023

Project	Project ID	Budgeted	YTD Forecast*	YTD Actual	\$ Var From YTD Forecast Incr/(Decr)	% Var	
Site Expansion #1 H60	CP0091	2,015,162	335,860	78,309	\$ (257,551)	-76.68%	
Site Expansion #2 WOL	CP0754CAP	1,742,001	290,334	490	\$ (289,844)	-99.83%	
Site Expansion #3 QC Land Purchase	CP0779	475,000	79,167	-	\$ (79,167)	-100.00%	
TOPAZ Voice Radio Network Upgrade	CN0022	-	-	-	\$ -	0.00%	
Upgrade Shaw Bute & Florence Gardens to P25 Phase II	CP0906	526,911	87,819	-	(87,819)	-100.00%	
Wireless Backhaul (Microwave) Network Lifecycle Upgrade	LF0403CAP	431,476	71,913	-	(71,913)	-100.00%	
Enhanced Data TBD		371,000	61,833	-	(61,833)	-100.00%	
System-of-Systems Networking	CP0438	-	-	-	-	0.00%	
Fire Hazard Zone System Coverage Improvement & Expansion	CP0907	450,000	75,000	-	(75,000)	-100.00%	
Fire Hazard Zone System Lifecycle Upgrade	LF0465CAP	147,500	24,583	-	(24,583)	-100.00%	
Fire Hazard Zone System Simulcast Timing Reference Lifecycle Upgrade	LF0402POM	-	-	2,216	2,216	0.00%	
System-of-Systems	CP0905	-	-	-	-	0.00%	
Florence Gardens ISR Site Lifecycle upgrade	LF0224	-	-	-	-	0.00%	
Radio & Core Sites Battery Backup Lifecycle Upgrade	LF0266	61,910	10,318	-	(10,318)	-100.00%	
Radio Sites Emergency Power Upgrade	LF0226	71,825	11,971	-	(11,971)	-100.00%	
Communications Building UPS Battery Replacement	LF0228	17,700	2,950	-	(2,950)	-100.00%	
Internet Protocol Network Routers & Switches Upgrade	LF0248	480,000	80,000	-	(80,000)	-100.00%	
Antenna & Transmission Lines Lifecycle Upgrade	LF0282	-	-	-	-	0.00%	
Consulting Services for VHF & 7/800 MHz Coverage Expansion		-	-	-	-	0.00%	
Total Capital Projects		\$ 6,790,485	\$ 1,131,748	\$ 81,015	\$ (1,050,733)	-92.84%	
Capital Assessment to Members							
Mesa	65.37%	1,226,380	204,397	52,849	(151,548)	-74.14%	
Gilbert	16.52%	355,841	59,307	13,422	(45,885)	-77.37%	
Apache Junction	10.45%	167,391	27,899	8,452	(19,447)	-69.71%	
Ft McDowell	1.71%	40,486	6,748	1,433	(5,315)	-78.76%	
Superstition Fire & Medical	0.82%	13,072	2,179	657	(1,522)	-69.85%	
Queen Creek	5.09%	11,801	1,967	4,173	2,206	112.15%	
Rio Verde	0.04%	545	91	32	(59)	-64.84%	
Total Assessment to Members		100.00%	\$ 1,815,516	\$ 302,588	\$ 81,018	\$ (221,570)	-73.22%

*YTD Forecast represents 2 months of project costs plus any contractual expenses already incurred (i.e. one time payments).

Date: 09/26/2023

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

Through: Dale Shaw, TRWC Executive Director

From: Chuck Craig

Subject: Administrator Update

Budget Update

The FY25 Budget has been reviewed by the executive committee and the TRWC Executive Director. Areas of note are additional funds to cover repairs and maintenance to radio site buildings and towers, engaging with a firm to assist in developing an RFP to upgrade/replace the existing Motorola radio system and additional monies in our legal budget to handle contingencies around building a new radio site in the Queen Creek area.

H60 Expansion

Final FCC approval for the H60 site has been obtained and groundbreaking for the site should occur late October or early November 2023. We are waiting for State inspection certificates for the building, and final approval from Pinal County for the building and tower. As expected, costs are coming in higher than originally anticipated, however we are finding ways to remediate this.

Wolverine Expansion Site

Documents have been submitted to the Forest Service detailing what type of equipment, radio frequencies, and tower height we are looking for to make the most of the location. Recent discussions with the Service indicate we should have little trouble, once the Forest Service completes their analysis, moving forward with our planned buildout.

South-east Valley Queen Creek

We are actively working with Queen Creek PD on the implementation of a new radio site in the SE valley. This site is part of the TRWC long term coverages goals, with budget capacity planned in FY25—FY27. We are working with Queen Creek real estate department on finding an appropriate location to house this new facility.

General operations

Tower inspections have indicated several repairs needed to maintain our ANSI/TIA – 222H certifications. Bi-annual radio system upgrades are scheduled for October 2023, these upgrades are part of our Motorola SUA contract. UPS and backup battery maintenance are up to date. Apart from normal system upgrades, we are moving forward with the implementation of ActiveEye, a feature of the SUA, used to monitor and improve our overall cyber security posture. Our admin team has actively been engaged with the Town of Gilbert as they implement their upgrade to the new 7500E console system, with a focus on AIS/VPM encryption keys. We have a new IGA with Maricopa County where they will be paying 50% of the replacement cost for generators and batteries at Twin Knolls and TRW.

Router Replacement Project

As part of the SUA, Motorola will be replacing all our ageing routers. This upgrade is covered by the SUA and will include VHF (non SUA) routers. They have also indicated an outage will be

necessary when we upgrade to Juniper, this outage is in the planning for calendar in Q1/2024. When we get the installation details from Motorola, we will put a communication plan together with our partner agencies, with a plan minimizing the impact on our public safety radio network.

Security Audit

IPKeys review of our P25 cybersecurity profile is complete. We are reviewing their analysis and will share with the results when the review and recommended remediations are complete.

Operations Summary

Overall system uptime remains at our goal level of %99.999. There have been some incidental occurrences where an individual channel has been impacted by a possible illegal carrier situation, but the Mesa radio shop is actively reviewing any possible causes, whether hardware or external carrier. During the current reporting period there have been no occurrences of peak channel usage, and no reported system busy.