TOPAZ
Detail of Operating and Maintenance
Fiscal Year 2021/ 2022

	Year to Date Through February 28,2022					
Description	**Budget**	**Updated Forecast**	**YTD Forecast***	**YTD Actual**	**$ Var From YTD Forecast Incr/(Decr)**	**% Var From YTD Forecast**
Personnel Services	$ 354,883	$ 354,883	$ 232,039	$ 166,406	$ (65,633)	-28%
Insurance Premiums	8,827	8,827	5,885	-	(5,885)	-100%
Temp Services	6,230	6,230	4,153	-	(4,153)	-100%
Leases and Rents - Land	26,271	26,271	17,514	15,688	(1,826)	-10%
Professional Services - Consulting	93,734	93,734	62,489	66,719	4,230	7%
Professional Services - Other-combining legal, consulting & other	115,134	115,134	76,756	9,780	(66,977)	-87%
Utilities	71,330	71,330	47,553	48,405	852	2%
Telephone	3,531	3,531	2,354	1,383	(971)	-41%
Association Dues	-	-	-	-	-	0%
Repairs & Maintenance	32,189	32,189	21,459	32,781	11,322	53%
Equipment Usage (Vehicles)	20,767	20,767	13,845	11,572	(2,273)	-16%
All Other Services	40,000	40,000	26,667	-	(26,667)	-100%
Sub-total Services	418,013	418,013	278,675	186,328	(92,347)	-33%
Motorola Contract	890,824	890,824	593,883	850,011	256,128	43%
Juniper Software	43,000	43,000	28,667	-	(28,667)	-100%
Materials & Parts	30,475	30,475	20,317	2,594	(17,723)	-87%
Non Cap Assets	12,980	12,980	8,653	-	(8,653)	-100%
All Other Commodities	-	-	-	-	-	0%
Sub-total Commodities	977,279	977,279	651,520	852,605	201,085	31%
Subtotal O&M	1,750,175	1,750,175	1,162,234	1,205,338	43,104	4%
Contingency - 1.5% of total O&M	27,380	27,380	18,253	-	(18,253)	-100%
VHF Operations	54,720	54,720	36,480		(36,480)	-100%
Total	$ 1,832,275	$ 1,832,275	$ 1,216,967	$ 1,205,338	$ (11,629)	-1%

*YTD Forecast represents 8 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 2021/ 2022

Year to Date Through February 28, 2022

Project	Project ID	Budgeted	YTD Forecast*	YTD Actual	$ Var From YTD Forecast Incr/(Decr)	% Var From YTD Forecast
Site Expansion #1	CP0091	1,350,000	900,000	346,627	$ (553,373)	-61.49%
TOPAZ Voice Radio Network Upgrade	CN0022	$ -	-	-	$ -	0.00%
Upgrade Shaw Bute & Florence Gardens to P25 Phase II	CP0906	287,406	191,604	-	(191,604)	-100.00%
System-of-Systems Networking	CP0438	-	-	-	-	0.00%
Fire Hazard Zone System Coverage Improvement & Expansion	CP0907	371,700	247,800	28,215	(219,585)	-88.61%
Fire Hazard Zone System Lifecycle Upgrade		147,500	98,333	-	(98,333)	-100.00%
Fire Hazard Zone System Simulcast Timing Reference Lifecycle Upgrade	LF0402POM	115,351	76,901	72,113	(4,788)	-6.23%
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	21,273	-	(21,273)	0.00%
Radio Sites Emergency Power Upgrade	LF0226	106,200	70,800	39,867	(30,933)	-43.69%
Communications Building UPS Battery Replacement	LF0228	-	-	-	-	0.00%
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	26,667			0.00%
Total Capital Projects		$ 2,450,067	$ 1,633,378	$ 486,822	$ (1,119,889)	-68.56%
Capital Assessment to Members						
Mesa	67.55%	1,226,380	817,587	331,020	(486,567)	-59.51%
Gilbert	19.60%	355,841	237,227	95,179	(142,048)	-59.88%
Apache Junction	9.22%	167,391	111,594	43,637	(67,957)	-60.90%
Ft McDowell	2.23%	40,486	26,991	10,159	(16,832)	-62.36%
Superstition Fire & Medical	0.72%	13,072	8,715	3,487	(5,228)	-59.99%
Queen Creek	0.65%	11,801	7,867	3,231	(4,636)	-58.93%
Rio Verde	0.03%	545	363	104	(259)	-71.35%
Total Assessment to Members	100.00%	$ 1,815,516	$ 1,210,344	$ 486,817	$ (723,527)	-59.78%

*YTD Forecast represents 8 months of project costs plus any contractual expenses already incurred (i.e. one time payments).

161 E Athletics Way
PO Box 1466
Mesa, Arizona 85211-1466

Date: March 10, 2022

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

Through: Dale Shaw, TRWC Executive Director

From: Chuck Craig

Subject: Administrator Update

Capital Projects

1. Site Expansion US60 Construct a public safety radio site in the southeast area of Apache Junction to ensure reliable radio coverage. Improvements include land acquisition, a radio tower, equipment shelter, emergency generator, radio/network equipment, and services.
    a. 60% plans are being reviewed by COM staff
    b. 90% plans due first week of April 2022
    c. $1.35M Budgeted in FY22
        i. Actual Expenses $348K
    d. Land has been purchased, building to be complete October 2022

2. Site Expansion Construct a public safety radio communication site in the far northeast area of Mesa to ensure reliable TOPAZ radio coverage. Improvements include the site, tower, equipment shelter, emergency generator, radio and network equipment, and services.
    a. This project is being coordinated through City of Mesa legal, and we are waiting for confirmation of site availability. No expenditures to date

3. Site Expansion Construct a public safety radio site in the southeast area of Queen Creek to ensure reliable radio coverage. Improvements include land acquisition, a radio tower, equipment shelter, emergency generator, radio/network equipment, and services.
    a. City of Mesa (COM) staff are continuing to review potential sites for an 700/800 MHz ISR and VHF TX/RX site
4. TOPAZ System of Systems Networking Expansion
    a. As we begin the transition towards FirstNet and cellular P25 communication, Inter-RF Subsystem Interface (ISSI) becomes less important. We will use the existing pot of money in this line item to continue our testing the FirstNet system
        i. COM MFMD is currently testing the FirstNet (AT&T) cell phone capabilities

5. TOPAZ Shaw Butte & Florence Gardens-P25 Phase II
    a. Upgrade five of six physical voice channels at Shaw Butte and Florence Gardens to Time Division Multiple Access (TDMA, also known as P25 Phase II) to enable two simultaneous voice transmissions on each physical radio channel.
        i. COM staff will work with Motorola staff over the next several weeks to go to each site and preform the upgrade.
6. TOPAZ VHF System Coverage Improvement & Channel Expansion. New quotes from Motorola are in. Equipment will be paid for this fiscal year with implementation/installation being paid for in FY23
    a. Banner Ironwood – Response from Banner on lease due 03/14/2022. We are still waiting for a go/no go on any weight limitation from Banner facilities management.
        i. If this should fall through we are actively working with the Town of Queen Creek for alternative sites.
    b. Gilbert Public Safety ("GPS") location
    c. Arizona Labs ("AZL") location
7. Fire Hazard Zone System Lifecycle Upgrade Router/Switch
    a. Waiting for quotes from Motorola on 14 sites (2 at MRDC) should ~$125k
8. Fire Hazard Zone System Simulcast Timing Reference Lifecycle Upgrade (TRAK)
    a. All hardware has been purchased
    b. Waiting on COM Radio team for installation
    c. Motorola still working on alarming issue (INC000004676270 TRAK events needing to be identified as alarms instead of events)
9. Enhanced Data
    a. $371K budgeted for FY23
    b. This project requires further clarification from Motorola to ensure it will meet the needs of all TRWC members

Operations Summary

All of our sites are working at peak efficiency with minimal issues. In future Administrator Updates I will include more performance measures for the Board.

TRWC CAPITAL PLAN PROJECTS UPDATE MARCH, 2022

- Queen Creek Area Sites
  - New Site
    - 800 MHz ISR site (move equipment from Florence Gardens)
    - Fire VHF transmit - receive site
    - $1,350K budgeted for FY22, $1,590K budgeted for FY23
    - Status: continuing to look for a site
  - Banner Ironwood Medical Center
    - Fire VHF receive site
    - $186K budgeted for FY22; current Motorola quotes exceed budget
    - Status: continuing to work with the hospital on the lease agreement
    - May not be necessary based on new 800/VHF expansion site
  - Queen Creek Fire & Medical Station 412
    - Fire VHF receive site
    - $186K budgeted for FY23
    - Status: continuing to work with QCF&MD and Town of Queen Creek on alternate locations
    - May not be necessary based on new 800/VHF expansion site

TRWC CAPITAL PLAN PROJECTS UPDATE MARCH, 2022

- Northeast Apache Junction Area Site
  - North-East Mesa site
- Southeast of Superstition Fire & Medical FS264
  - US60 Site
    - 800 MHz simulcast site
    - Fire VHF transmit - receive site
    - $1.35M Budgeted in FY22
      - Actual Expenses $348K
    - $1.595M budgeted for FY23?
    - Status: property purchased [October, 2021]
    - Build out Fall 2022
    - 60% plans March 2022

TRWC CAPITAL PLAN PROJECTS UPDATE MARCH, 2022

- Add VHF coverage for the existing TRWC fire partner coverage area in Mesa, Gilbert, Apache Junction, and Queen Creek.
- Budget
  - for FY22 $380,063 (371,700)
  - For FY23 $388,463 (371,000)
- $155K FY22/23
  - See Queen Creek Area Slide (Banner Ironwood)
    - May not be necessary based on new 800/VHF expansion site
- $240K FY22/23
  - Gilbert Public Safety Building
    - Final quotes received, working with DoIT purchasing
    - Equipment in FY22
    - Installation in FY23
  - AZ Labs (Phoenix Mesa Gateway Airport)
    - Final quotes received, working with DoIT purchasing
    - Equipment in FY22
    - Installation in FY23

TRWC CAPITAL PLAN PROJECTS UPDATE MARCH, 2022

- Upgrade Shaw Butte & Florence Gardens to P25 Phase II
  - Working with Motorola on acceptance test parameters
  - Software is delivered
  - PM assigned by Motorola
- Capacity Expansion
- $287.4K budgeted for FY22, $287.4K budgeted for FY23
- Ready to being project, pending availability of Motorola resources (March 2022)

TRWC LIFECYCLE PROJECTS UPDATE MARCH, 2022

- Radio Sites Emergency Power (Generator) Upgrade (Complete this FY)
  - Two sites budgeted ($106.2K) & planned for generator replacements in FY22
    - 1) SWP, diesel generators on order, backlog 22 weeks ($37k)
    - 2) FS219, equipment on order, backlog 22 weeks ($37k)
    - We will move forward with purchasing and installation of transfer switches for these sites
  - Recommend using future year generator funding ($106.2K) for site expansion (US60, North-East Mesa)

TRWC CAPITAL PLAN PROJECTS UPDATE MARCH, 2022

- Radio & Core Sites Battery Backup Lifecycle Upgrade
  - Two sites are budgeted ($31.9K) & planned for FY22
  - TRW and Twin knolls

TRWC CAPITAL PLAN PROJECTS UPDATE MARCH, 2022

- Enhanced Data
  - $371K budgeted for FY23
  - This project requires further clarification from Motorola to ensure it will meet the needs of all TRWC members

TRWC CAPITAL PLAN PROJECTS UPDATE MARCH, 2022

- Consulting Services for VHF & 7/800 MHz Coverage Expansion
  - $40K budgeted for FY22
  - Budgeted for the next 3 fiscal years, no current or proposed engagements
  - Review software application to use in-house for ad-hoc coverage studies

TRWC CAPITAL PLAN PROJECTS UPDATE MARCH, 2022

- Fire Hazard Zone System (Fire VHF) Lifecycle Upgrade
  - $147.5K budgeted for FY22
  - Router/Switch replacement
    - Scheduled to start in 2nd quarter of calendar year 2022
    - Pending availability of Motorola resources?

TRWC CAPITAL PLAN PROJECTS UPDATE MARCH, 2022

- Fire Hazard Zone System Simulcast Timing Reference Lifecycle Upgrade
- $115.4K budgeted for FY22
  - Scheduled to start in 2nd quarter of calendar year 2022
  - Pending availability of Motorola resources?

FUTURE PLANNING

- The TRWC Public Safety Communications team will develop a plan for future growth of our Radio Network
  - Improved overall coverage
  - New Fire Stations
  - New and upgraded Police Stations
  - Melding FirstNet into our P25 infrastructure
  - Fiber and Conduit preventative maintenance