



PLANO AMATEUR RADIO KLUB

Repeater Coverage Upgrade
16 March 2020 General Meeting





Actions

- Discussion about Irving Grant
- Agreements with MARS ready for signature
- Budget approval for MCP and THR Sites
- Potential MARC repeater link
- Alternate Internet source as Prestige
- Summary of actions at each location

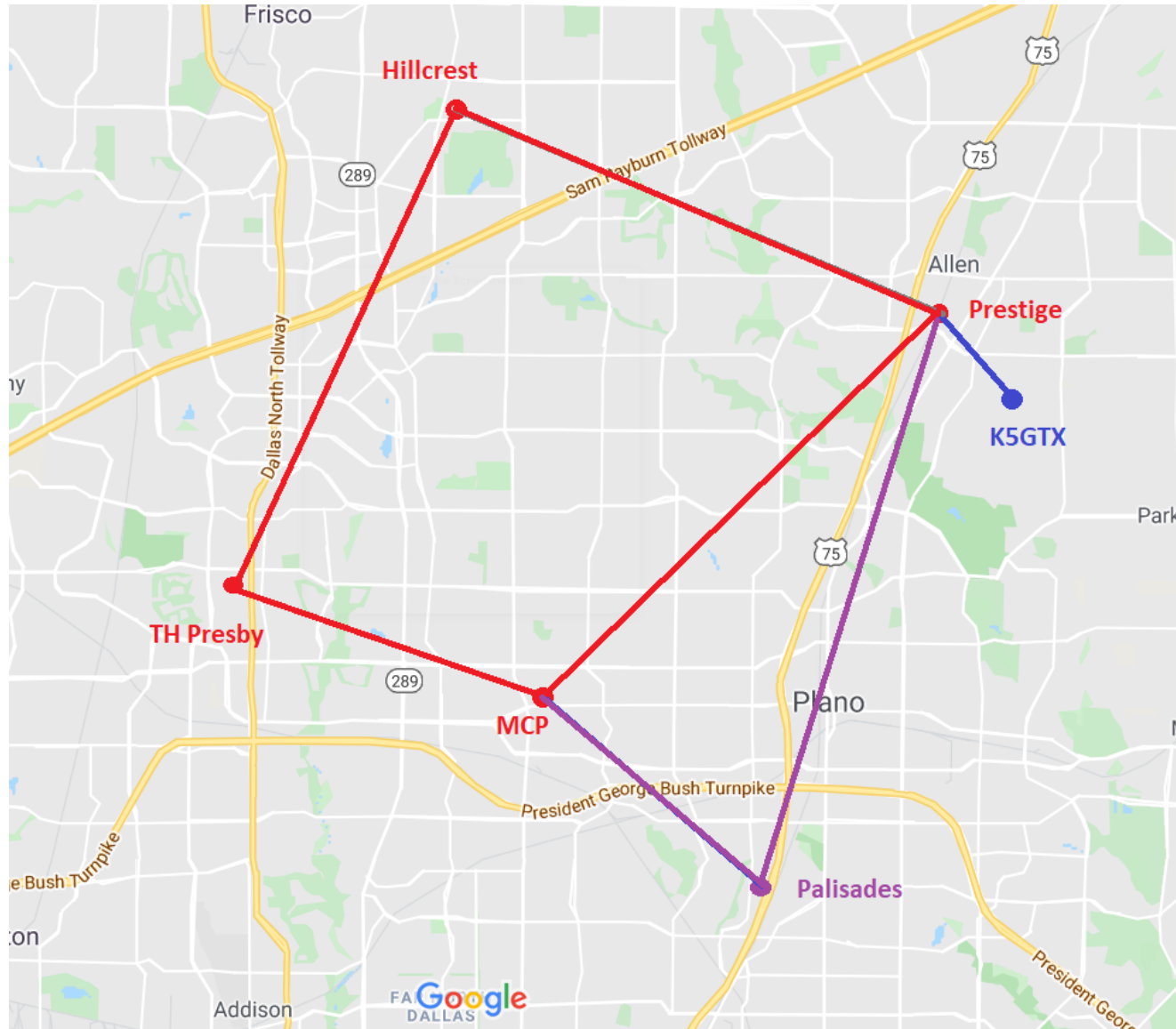


Irving Grant

- Won \$1119 Micro-Grant from Irving ARC
- Proposed
 - 3 ER10X Edge Router at \$109 each (10 ports)
 - 9 NBE-5AC-Gen2-US Ubiquiti NanoBeam ac Gen2 High-Performance airMAX ac Bridge \$88 16 dbi
- Ordered:
 - 7 Lightbeam 5AC Gen2 \$67 23 dbi (<12 km)
 - 3 Powerbeam 5AC Gen2 \$109 25 dbi (<24 km)
 - 3 ER10X Edge Router at \$109 each (10 ports)



Proposed Network for Grant





MARS Joint Operation

Metrocrest Amateur Radio Society

- MOU's have been signed by PARK. Should be approved by MARS soon.
- Working plan
 - VHF repeater at Medical City Plano
 - More room and no specific restrictions on equipment
 - UHF repeater at THR Plano
 - Limited space
- Repeaters still belong to MARS
 - They will be trustee and cover potential loss
- Will have joint access to sites and control of repeaters
- They will be interconnected to AllStar network
- We will have control of repeaters during training and nets



MARS Joint Operation

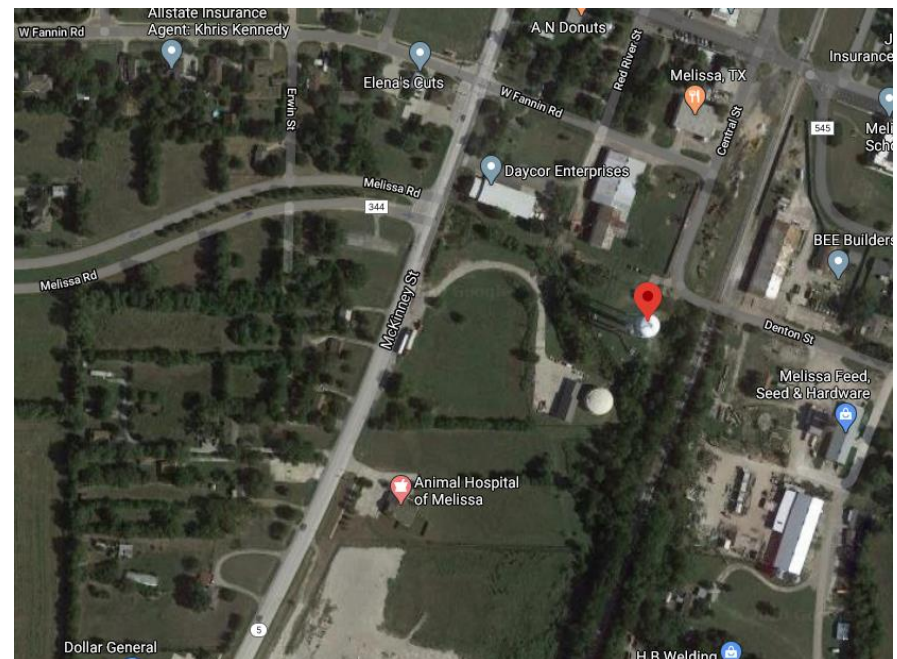
- Agreements ready for signature
- Budget Approval per Repeater

UPS	APC Smart-UPS SMX1500RM2U	\$ 220.00	Used eBay
AC PDU	APC AP7801	\$ 120.00	Used eBay
Rack	Various	\$ 120.00	
Allstar Controller	RIM-Lite	\$ 50.00	Repeater-builder
Rpi 3B+	Adafruit	\$ 35.00	
Heatsink/Case	Amazon	\$ 13.99	
Cables	Various	\$ 10.00	
Edge Router	Ubiquiti EdgeRouter X x ER-X-SFP-US	\$ -	Grant funds
Switch and SD Card	Microcenter	\$ 40.00	
Antenna	Comet GP-6	\$ 150.00	
Surge Suppressor	Alpha Delta ALF-ATT	\$ 80.00	
Coaxial Cable/Connectors	LMR400 75 ft UHF/UHF	\$ 100.00	
Misc		\$ 50.00	
		\$ 768.99	



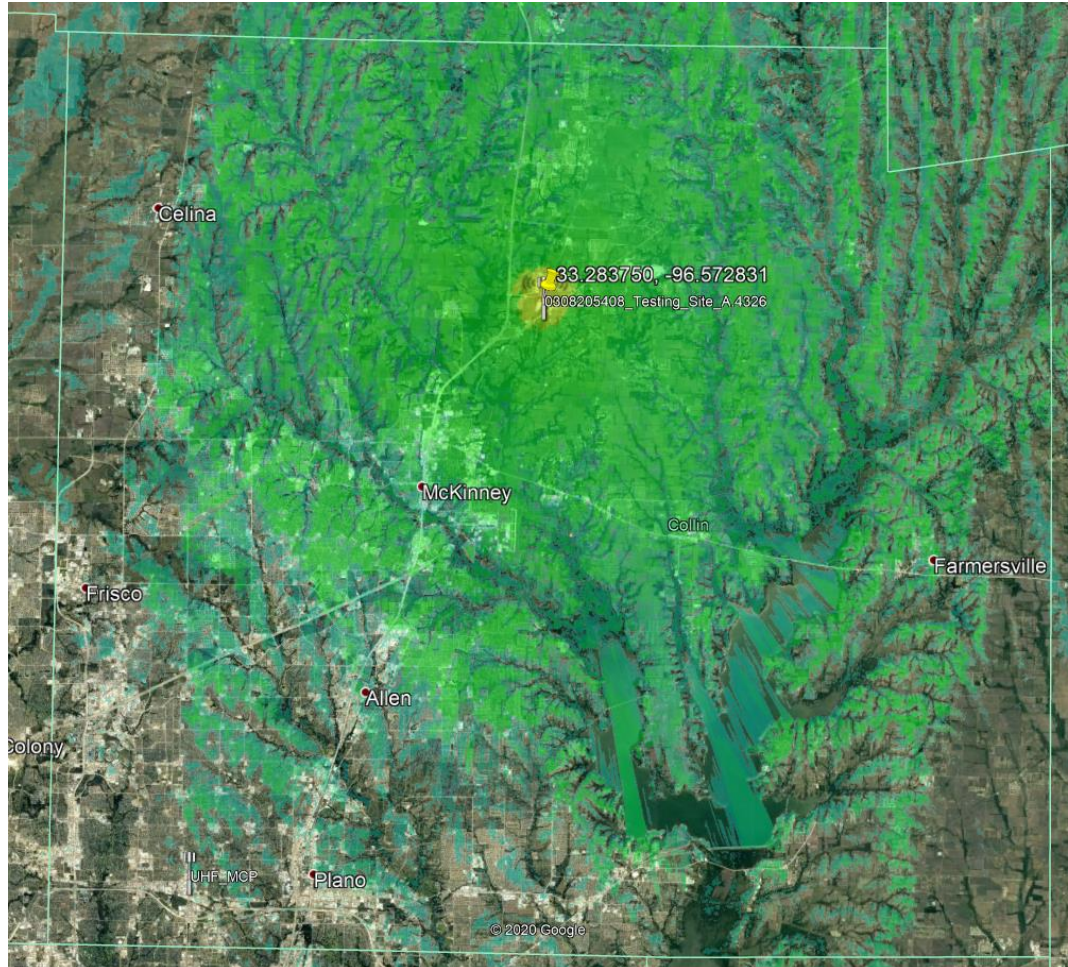
Potential Joint MARC Operation

- McKinney ARC has offered to link their Melissa UHF repeater during Skywarn events
- The site particulars are:
 - 33.283750, -96.572831
 - 175ft above average terrain
 - Approximate elevation 675 ft
- Range may be an issue
- 26.09 km from
 - Hillcrest
 - 23.35 km from Prestige
 - Simulation says max range < 24 km





Potential Joint MARC Operation



- Does provide enhances coverage in the north central part of the county
- This location really illustrates the two ridges
- We still need a site in the Farmersville area to provide the desire coverage
- This would likely be a great place for cameras
- It does provide some additional coverage and strengthens our ties with MARC



Alternate Internet Link

- Greg has agreed to allow us to use his internet service to increase the interconnect speed.
- Using 2 Ubiquiti LBE-5AC-GEN2-US LiteBeam Wireless Bridge
- Link between Prestige Water Tower and Greg Evan's House
- Distance is about 1.5 miles



Prestige Site

- Near term to do list
 - Upgrade Edgerouter X to Edgerouter 10X (5 port to 10 port)
 - Tower Climb in April
 - Install link to K5GTX
 - Install link to MCP
 - Install camera
 - Install link to Palisades
 - Get monitoring equipment working
 - Plan next climb
 - Install link to Hillcrest (Frisco)

Frisco Site



- Get MOU signed
- Contract with professional climber
- Configure Repeater and Allstar
- Upgrade Edgerouter X to Edgerouter 10X
- Plan Climb
 - Run Ethernet Cables
 - Install 2 Tri-band antennas (2m, 1.25m and 0.70 cm)
 - Install links to Prestige and TH Presby
- Plan control room setup
 - Install repeater Rack
 - Provide Backup Power



MCP Site

- Purchase PARK's equipment
- Build PARK's equipment
 - VHF Antenna Mounts
 - Pole for network links
 - Coax, Ethernet cables, etc
- Plan Install with MARS



THR Presby

- Purchase PARK's equipment
- Work with hospital on cable runs through duct
- Build PARK's equipment
 - VHF Antenna Mounts
 - Pole for network links
 - Coax, Ethernet cables, etc
- Plan Install with MARS



Melissa Site (MARC)

- Get MOU signed with MARC
- Get digital link between PARK sites and McKinney sites
- Help with Configuration



Palisades Site (RWK)

- Get video server to them
- Assist with Climb March 21
- Install a 120° sector antenna centered North
- Test link from MCP and Prestige