

**MARIN EMERGENCY RADIO AUTHORITY**

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**DATE:** September 12, 2018  
**TO:** MERA Next Generation Project Oversight and Finance Committees  
**FROM:** Dave Jeffries, Deputy Executive Officer for the Next Gen Project  
**SUBJECT:** AGENDA ITEM F: Contract Change Order #7 and Early Equipment Order

**Recommended Action:** Review, discuss and provide direction to staff and a recommendation to the Governing Board for approval of Contract Change Order #7 and authorization to order mobile radios early to be installed in time for cutover to the Next Gen System.

**Introduction:**

At the 03/19/18 meeting of the Project Oversight Committee, we discussed staff report #C that addressed the possibility of ordering mobile radios early in conjunction with Radio Management, Over the Air Programming and Wi-Fi programming. At that time, the committee recommended that MERA pass on delivery during the summer of 2018 and revisit the issue later. This was reported to the Governing Board at their meeting on 04/25/18 in Staff Report #B-1.

**Change Order Details:**

Change Order #7 is focused on supporting the ability to manage and remotely reprogram field user radios. Currently, every reprogramming requires that the radio technicians travel to users and physically touch each radio needing updating or for those users to travel to the Radio Shop to have this service performed. With nearly 3,000 radio in our system, this can be a daunting and expensive task.

Radio Management is a database that tracks each radio in the MERA system, including software and code plug versions and can be used to push updates to all of the radios by using Wi-Fi connections and/or Over The Air Programming (OTAP). The Wi-Fi connection would utilize Wi-Fi hotspots at MERA agencies that will allow the MERA system to push program changes to the fleet of radios wirelessly. The OTAP connection uses a slower, vet existing MERA data backbone to push programming out to radio that will not have Wi-Fi access. Both methods eliminate the need for technicians to directly touch each radio needing updating, which has been estimated at \$75,000 to \$130,000 in communications technician time per round of reprogramming. This reduction in major reprogramming efforts in combination with minor reprogramming and increased staff efficiencies provides a potential to reduce DPW technician costs to MERA under the System Maintenance Agreement.

The second part of this change order is for 200 instances of AES/DES encryption. Those MERA agencies using encryption in Gen I utilize an encryption technology called AES. In the Next Gen System, a newer technology, DES, will be used. These two technologies are not compatible. These

instances of both AES and DES encryption are designated for those radios that currently use encryption to maintain their encryption capability while operating on the Gen I System and then continue to function after cutover on the Next Gen System. The total cost for this Contract Change Order, after discounts, is \$579,268.95.

**Early Order of Mobiles:**

Currently, we plan to begin installation of mobile radios at the time of cutover to the new Next Gen System. This process will take approximately 8 months, during which we need to maintain the current Gen I and new Next Gen Systems and maintain connectivity between users across both systems. Staff is proposing that we acquire the mobile radios early, with the intent that all the new mobiles be installed prior to cutover. This process, in conjunction with Radio Management/OTAP/Wi-Fi reduces the cutover period from eight months to a couple of weeks, shaving several months off the project. To do this, these mobile radios will need to be the APX8500 mobile radios with both UHF-T and 700/800 MHz bands installed. While Motorola had previously offered discounts to acquire the dual band radios, as of this writing, those discounts are no longer available.

At this time, the Cutover date has not yet been determined. Once we complete the CEQA process, Motorola will be providing MERA with an updated project schedule. If this plan is adopted by the Governing Board, we anticipate ordering radios so that installations can begin 8 months before the identified cutover date. MERA Staff has previously estimated that each month saved has a value to MERA of approximately \$100,000.

We estimate the need to acquire approximately 1,100 mobile radios in this process. Portable radios are not included in this as they can be programmed and distributed as single band APX6000 radios as the time necessary for vehicle installations does not apply.

**Cost Issues:**

Mobile Radios/per unit:

- |  |            |
|--|------------|
| 1. Contract cost (APX6500)                       | \$3,652.55 |
| 2. Contract cost with MERA recommended additions | \$3,729.81 |
| 3. Early Order cost (APX8500 with dual band)     | \$5,499.81 |

Number of Mobile Radios Estimated: 1,100

Total Contract Costs:

- |   |                                      |
|---|--------------------------------------|
| 1. Contract Cost  | \$4,017,805 (Install at Cutover)     |
| 2. Early Order Cost                                     | \$6,049,791 (Install before Cutover) |
| <b>3. Additional Radio Funds Needed for Early Order</b> | <b>\$2,031,986</b>                   |

**Change Order #7 Cost: \$579,268**

**Total Cost for Change Order #7 and Early Order \$2,611,254**

Attachments:

Motorola Contract Change Order #7, dated 08/13/2018