MARIN EMERGENCY RADIO AUTHORITY
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DATE: September 26, 2018

TO: MERA Governing Board

FROM: Dave Jeffries, Deputy Executive Officer for the Next Gen Project

SUBJECT: AGENDA ITEM C-4: Motorola Contract Change Order #7, dated 09/17/2018
                     AES/DES Encryption, Radio Mgmt., WiFi, OTAP

Recommended Action: Review, discuss staff recommendation for approval of Motorola Contract Change Order #7.

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.

A staff report on the early mobile radio order is anticipated for the October Governing Board meeting.

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 tough 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, yet 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 Wi-Fi capability is available on all of the portable radios expected for the Next Gen system as well as the dual band capable mobile radios. Wi-Fi connectivity is not available for the single band mobile radios.

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:

While not part of the recommendation in this report, the acquisition of dual band radios for installation prior ot cutover has been part of this discussion. While Radio Management/OTAP and Wi-Fi have a value to the Next Gen project on their own, that value will be much greater should MERA elect to acquire and install dual band mobile radios prior to cutover.

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. We are in discussion with Motorola on potential discounts and will update the Governing Board on those efforts at their October meeting.

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. MERA Staff has previously estimated that each month saved has a value to MERA of approximately $100,000.

Change Order #7 Cost (With taxes):   **$631,403.15**

Attachments:
        Motorola Contract Change Order #7, dated 09/17/2018