MERA-Marin Emergency Radio Authority

Next Generation Radio System Project
Project Management Plan
September 16, 2021

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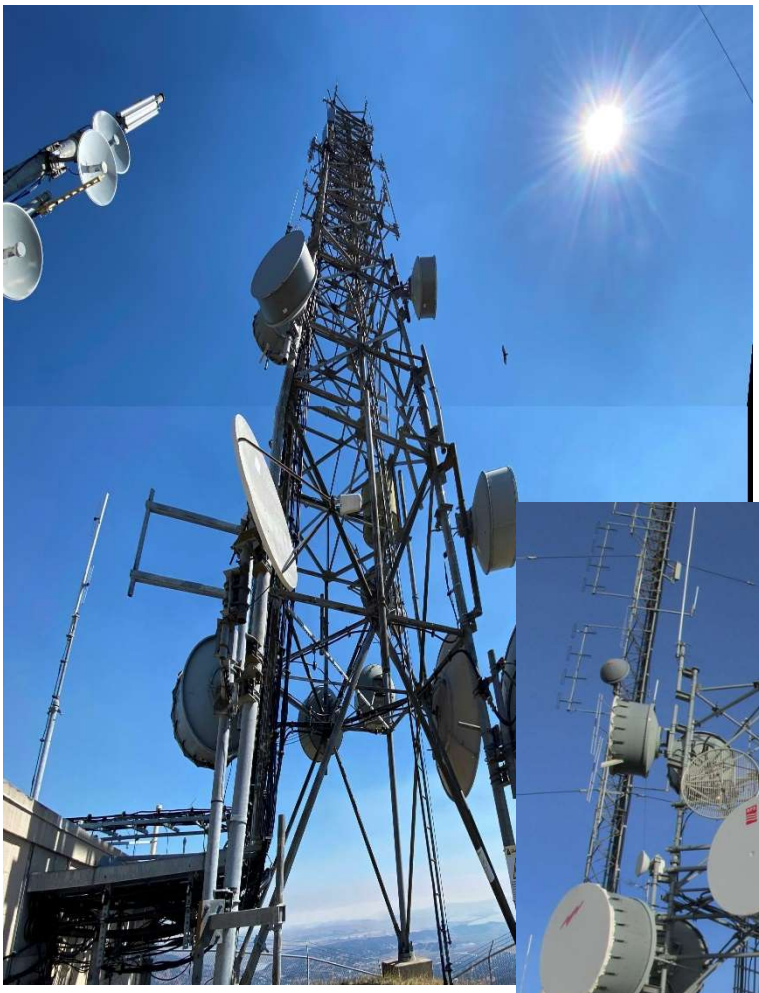

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PURPOSE OF THE PROJECT & CONSTRUCTION MANAGEMENT PROCEDURES MANUAL

This Project Management & Construction Procedures Manual (Manual) is intended to document the MERA delivery team organization, their goals, the systems and procedures they will use, and to provide guidance and structure for the management of the MERA NextGen project. It defines the project team organization, team member roles and responsibilities, project delivery strategy, schedule and cost control plans, contract administration procedures, and required resources. Additionally, it incorporates relevant project administration policies and procedures required by MERA's organization.

The Manual will be updated during the project when deviations from the initial plan and/or updates to the plan have been approved by MERA Executive Management.

AECOM assumes responsibility to update the manual as required.

SUMMARY OF THE SECTIONS

SECTION 1 PROJECT MANAGEMENT PLAN

This section outlines the program and the guidelines, regulations and organizational structure that will be used during all the projects that make up the program. It also describes the lines of communication, dedicated resources and expectations for personnel during the pre-planning and subsequent construction of all projects.

SECTION 2 CONSTRUCTION PROCEDURES

This section details the processes and procedures that will be implemented on all projects and describes the documentation, workflows and deliverables for the construction management team, construction contractors and all subcontractors and vendors that will be involved in the projects. This section also details the project controls that will be implemented to ensure there are clear communications and expectations for the accountability of each team member for timely responses and clear directions when guidance is needed.

SECTION 1 – PROJECT MANAGEMENT PLAN

PROJECT MISSION, GOALS & OBJECTIVES

PROJECT MISSION STATEMENT

MERA is a collection of public agencies formed in partnership to provide and operate a public safety radio system. It provides a crucial communications delivery system that is interoperable between public agencies in order to facilitate critical (emergency) communications efficiently and effectively.

The Marin Emergency Radio Authority (MERA) is a Joint Powers Authority in Marin County, California, formed in 1998 to plan, implement and manage a countywide public safety and emergency radio system for the use of all member agencies. This system helps unify public safety response and ensures communication among individual agencies and departments.

The system of 18 base station radio and receiver sites provides regional or countywide radio communications among dispatch centers and mobile units throughout the county.

MERA is governed by a Governing Board comprised of representatives from the County of Marin, all cities, towns, and fire districts in Marin, and other special districts such as the Marin Municipal Water District. The Executive Officer and Operations Officer serve the Governing Board via contract.

CRITICAL SUCCESS FACTORS

The project Critical Success Factors (CSF) are:

1. Install a new radio communications system as approved in Measure A by a vote of the public in November 2014.
2. Improve Marin County communications coverage to reduce 911 response times and ensure reliable communications among first responders during all disasters, and everyday operations.
3. Provide Next Gen System communications coverage to meet 97% reliability in the Motorola contracted coverage area with delivered audio quality of 3.4 or better as measured by TSB-88 testing methods.
4. Integrate the new Emergency Operations Facility (EOF) into the communications system.
5. Maintain compliance with all land use, permitting and California Environmental Quality Act (CEQA) requirements.

PROGRAM OVERVIEW

PROGRAM NAME

MERA Next Generation System Replacement

SITE LOCATIONS

The project includes 18 tower sites across Marin County, CA.

- See Appendix A: Site Logistics

SUMMARY

The MERA radio system is vital for emergency countywide communications between police, firefighters and public works crews. The emergency communications system is a network of radio antennas and equipment linked with microwave connections. The older equipment requires an upgrade of all Ultra High Frequency (T-band) radio communications systems, including the MERA system. The Next Gen System would update the current backbone network to utilize new radio frequencies in the 700MHz band to vacate the UHF (T-band) frequencies currently utilized. The Next Gen System would also utilize Project 25 (P25) technology to provide improved public service and emergency radio coverage within the County of Marin. Funding for the project is generated by a parcel tax that was authorized by Marin County voters in 2014. New and upgraded towers and equipment will be designed, constructed/installed, and tested in order to achieve the project requirements. The work is summarized in the following project scope:

1. Procure Construction Contractor (GC) services to build out new sites and towers and upgrade existing sites and towers
2. Construct all sites according to the design documents
3. Receive, store and inventory radio equipment in facility provided by MERA
4. Coordinate Motorola equipment installation as sites become available
5. Coordinate member agencies for access to their equipment being upgraded
6. Install head end equipment so that the equipment network can be tested as each location's equipment is installed
7. Install equipment in the 18 locations shown on design documents
8. Conduct training for end users
9. Conduct testing and validation of the new radio equipment
10. Closeout the project, document handover

ENVIRONMENTAL APPROVAL

A detailed Initial Study and Environmental Impact Report (EIR) were prepared for the original Marin Public Safety and Emergency Communication System EIR (SCH# 1999092073). The Initial Study identified potential impacts in five areas and the Draft EIR (MERA 1999), detailed the potential impacts to Land Use, Biological Resources, Aesthetic Resources, Radio Frequency (RF) Hazards and Cultural Resources. The Final EIR for the original MERA project was certified in November 2000 and was amended to include the Stewart Point (Martinelli) Site in 2006. These environmental studies remain valid for the sites and equipment evaluated.

The Next Gen SEIR evaluated the new environmental impacts resulting from the proposed MERA Next Gen System upgrades and defined compliance activities needed to address new regulations put into place since the original EIR was certified.

Site Specific - Environmental Impact Mitigation Measures are provided in Appendix B

PROJECT PROCUREMENT STRATEGY

PROCUREMENT STRATEGY

The procurement strategy will consider the most optimal method of combining projects into packages that will consider the size and complexity of the project along with common scope features and geographic proximity to each other. During the pre-planning phase of the project, the availability of design documents, environmental considerations and seasonal conditions will be used to develop the final bid packages.

The determination to use traditional design-bid-build or design-build delivery methods will be evaluated as the construction documents become available and considerations for lease agreements are finalized. These factors will be evaluated against the final delivery schedule and adjusted as needed.

PROJECT DELIVERY

The Project Delivery included the components of all projects that will be implemented in order to ensure all projects have a comprehensive scope and conform with industry standards, technical requirements and legal authorities having jurisdiction for all project sites.

The designer's scope of work includes:

- EIR and SEIR Mitigation
- Architecture and Engineering Design
- CEQA compliance
- The Architect(s) of record will provide "Permit ready construction documents per the contract agreement: section 5-System Description"

Systems Confirmation/ Design Validation

- Coordinate Motorola and member agencies schedules and resources to test and validate radio systems
- Install head-end equipment first so that the equipment network can be tested as each location's equipment is installed

Code Compliance Approvals

- Radio Site Compliance (FCC)

- State of California
- County of Marin

Safety and Industrial Compliance

- COVID-19 Infection Prevention in Construction
- Department of Industrial Relations
- OSHA/Cal-OSHA

Construction Administration

- Site/Access Construction
    - Lay down and storage-limits of disturbance and restoration
    - Temporary facilities-fire protection, worker protection, security, falsework
    - Protection(s)-Environmental, erosion control, adjacent facilities
    - Waste disposal-approved disposal facilities and waste management
    - Working hours
    - Inspections and reporting-contractor reports, engineering reports, special inspection reports
- Antenna Construction
    - Design-Build by Tower Manufacturer
    - Foundation-special inspection for rebar and concrete
    - Connection to MERA radio system
- Permitting
    - FAA
    - Air Quality
    - Coastal Permits
    - Water Quality (Erosion Control)
    - Grading Permit
- Equipment Installation
    - Visual inspection
    - Design compliance

    - Final sign off
- Testing and Validation
    - Inspection-Antenna alignment
    - Testing- Grounding, radio system sign off
- Closeout
    - Document turnover and archives

Site Access

- Notification to site owners will be coordinated with contractors and vendors

Site Utilities

- Construction Contractor, PG&E, AT&T, Landowners, MMWD

Radio System Commissioning and Closeout

- Punchlist
    - Construction phase
    - Equipment Installation phase
- Systems Start-up
- Owner Training – Implementing Motorola site training program
- Maintenance Manuals and Attic Stock
- Records Archives
- Administrative Closeout
    - AECOM shall close out the contracts and verify final payments and releases of claims have been submitted by all contractors and vendors.

CONSULTANT SERVICES

Consultant Services will be procured and contracted by MERA and managed by AECOM. Consultant services provide independent specialized professional services for design, engineering, observations and laboratory testing.

Architect – In 2016, Infinigy was selected by Motorola to provide design services. The firm's services extend throughout the design, construction, radio system installation, validation and closeout phases. In May 2021, Motorola replaced Infinigy with Arcadis.

Geotechnical – These review services have been provided by Engineers as a subconsultant to MERA. Toro International provided these services per MSI guidance. Supplemental geotechnical investigation services

have been procured and conducted by Herzog Geotechnical Engineering Services. Inspections and reporting are managed by AECOM.

Special Inspection / Materials Testing - Special Inspection/Materials Testing services will be performed by a qualified firm to be selected by MERA based on the research and recommendations provided by AECOM. Inspections and reporting will be managed by AECOM.

Biological Surveys – Biological Survey services will be performed by a qualified firm to be selected by MERA based on the research and recommendations provided by AECOM. Inspections and reporting will be managed by AECOM.

Tribal Surveys – Tribal survey and visual inspections during excavation will be procured by MERA and managed by AECOM.

Code Compliance Reviews – The code compliance review helps ensure compliance with local jurisdictional authorities' guidance and regulations.

PROGRAM ORGANIZATION

Organization Charts depicting interactions and responsibility levels between team members are included for the following:

MERA External Interfaces (Figure 1): Organizational structure of the MERA member agencies, board members, executive staff and control agencies that includes program updates for the financial status, radio system manufacturing and installation, system site leases and construction status.

MERA/AECOM Project Team Structure (Figure 2): Organizational structure of the site development projects

Construction/Radio Equipment Structure (Figure 3): Organizational structure for the coordination of radio system installation including system startup and validation, as well as construction coordination related to the radio system

Figure 1. External Interfaces

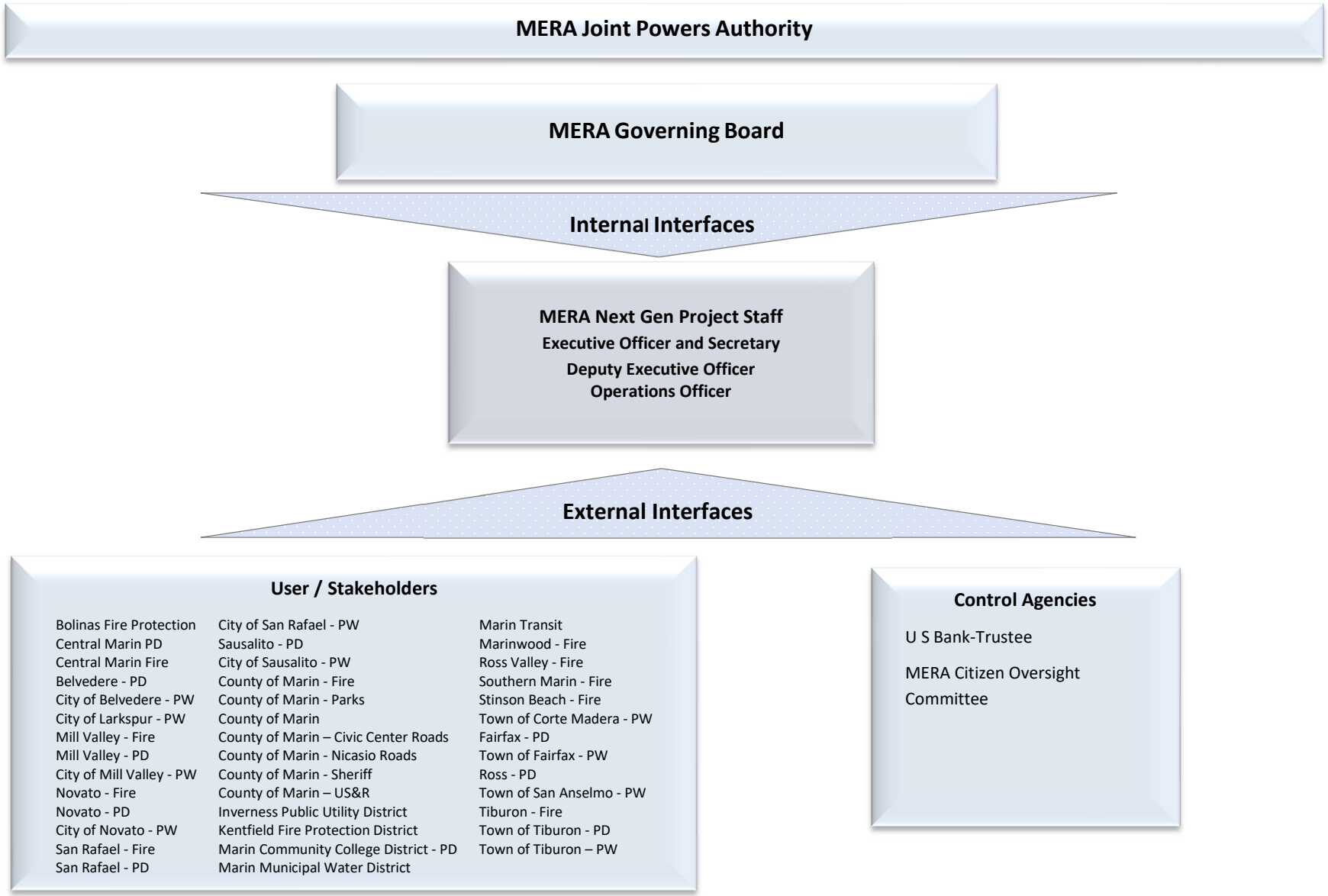


Figure 2. Project Organizational Team

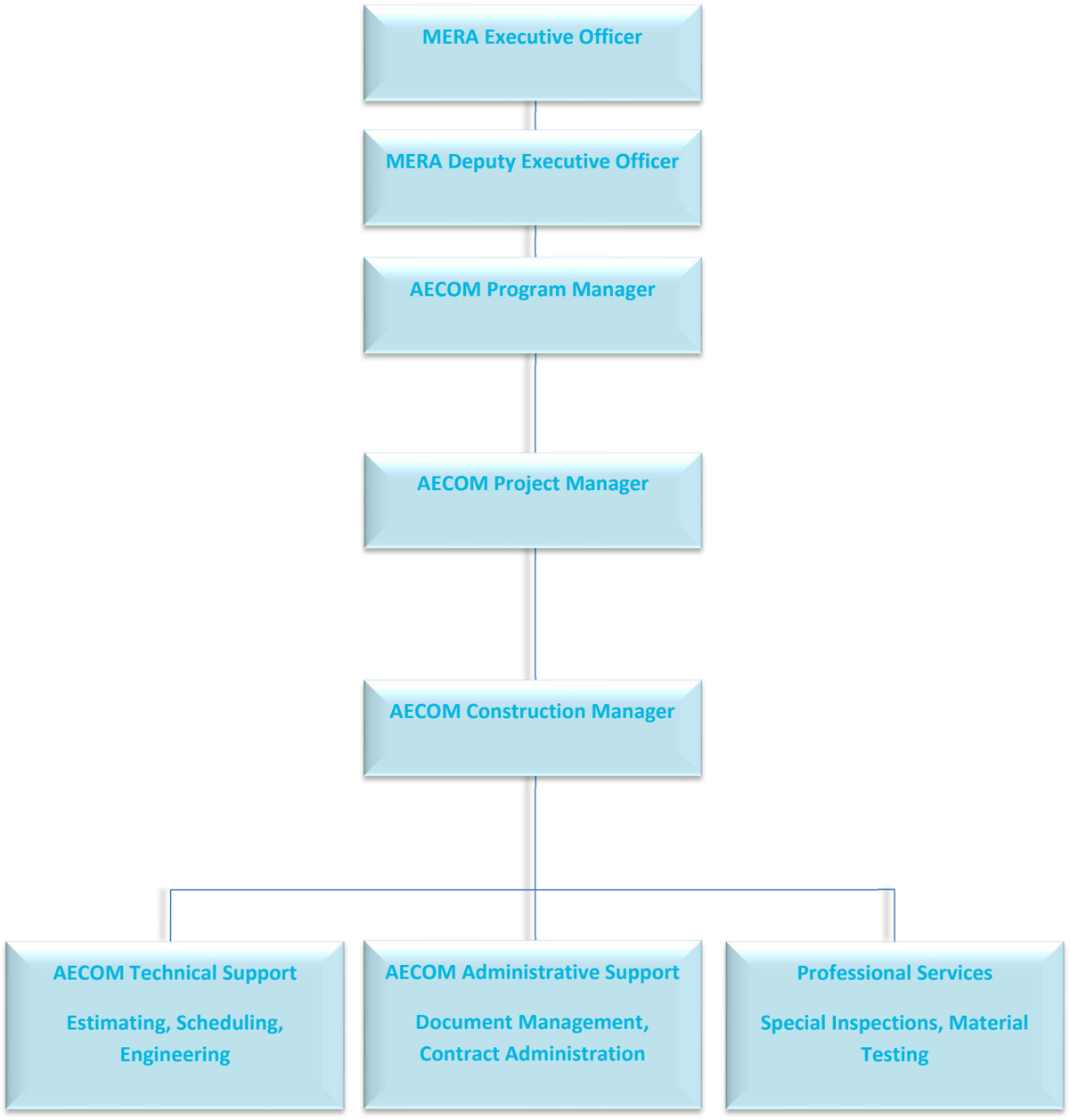
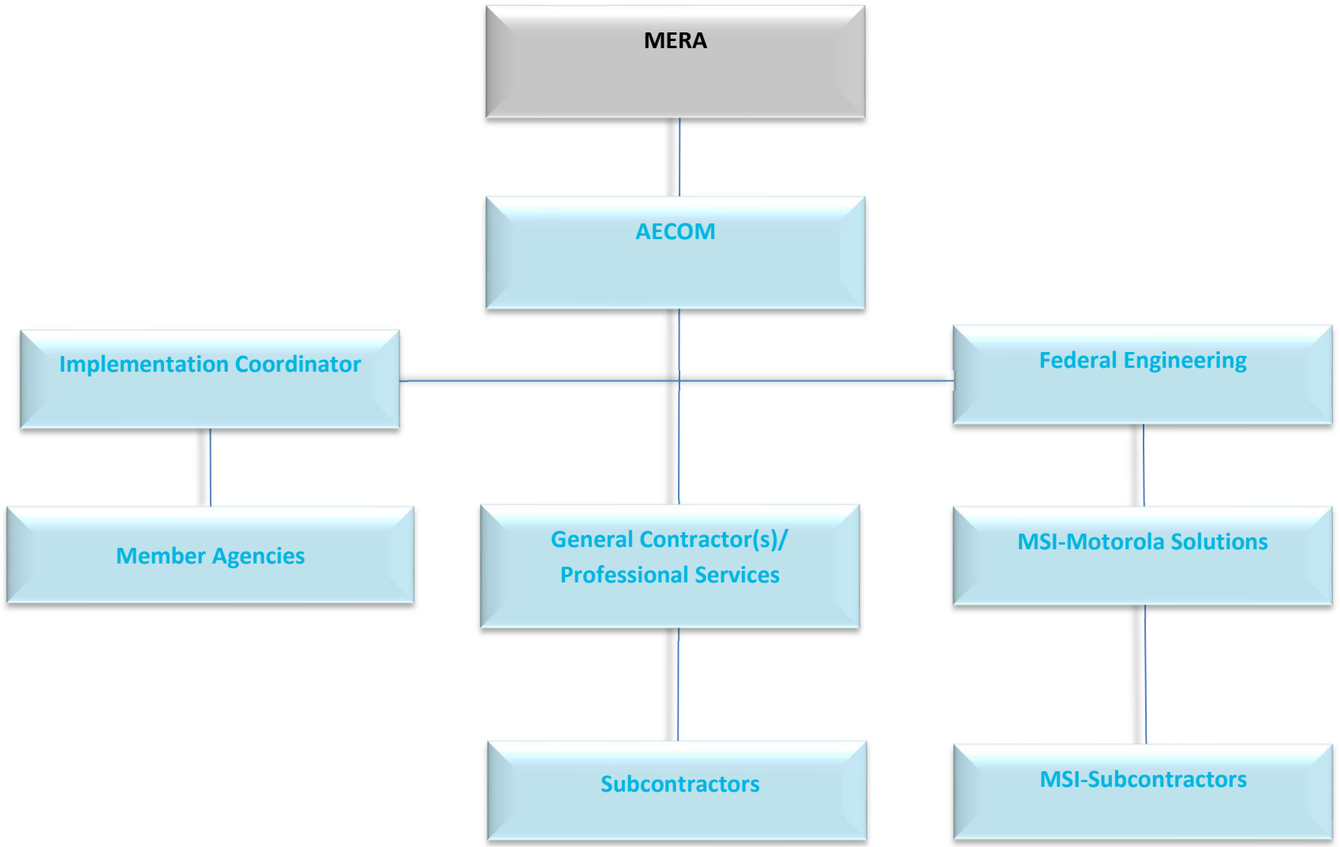


Figure 3. Construction/Radio Equipment Team



PROJECT/CONSTRUCTION MANAGEMENT TEAM STAFFING

TEAM STAFFING

In addition to consultant PM/CM support, MERA has assigned in-house Project Directors to the site project team to gain experience with large design-build projects. In order to accomplish this, a "blended team" of MERA and AECOM personnel will staff the site project team.

AECOM staffing requirements were reviewed with Project Lead during scope and fee negotiations to confirm and agree upon AECOM staffing levels.

Table 1 reflects the planned allocation of AECOM personnel during the Pre-Construction and Construction delivery phases.

Table 1. Staffing Resources – MERA / AECOM Design-Build Phase Project Delivery Team

Labor Category	Name	Pre-Con	Construction
Regional Executive	Albert King	0	0
Program Manager	Mark Chase	0.5	0.25
Project Manager	Bruce Bagnoli	1	1
Construction Manager	Jonathan Sprague	1	1
Document Control	Madeline Goldaraz	0.1	0.1
Estimating	Corey Coleman	0.1	
Scheduling	Shree Arangabadkar	0.1	0.1
Engineering-as needed	Frank McBride		
Engineering-as needed	Shane Russell		
Total FTE's		**2.8**	**2.45**

MERA/AECOM POSITION DESCRIPTIONS

Table 2. AECOM Position Descriptions

Position	Roles and Responsibilities
Program Manager	Mark Chase, AECOM Program Manager will oversee the administration of AECOM's project deliverables, AECOM contract administration, provide oversight of all CM contract administration, support the MERA Project Team with delivery planning, resolution of key project issues, implementation of risk mitigations, and monitoring the project schedule and contingency.
Construction Project Manager	Bruce Bagnoli, AECOM Construction Project Manager has lead responsibility to oversee the site development construction and coordinating all stakeholders. In that role Bruce is responsible for monitoring onsite construction activities, provide input to mitigate and/or resolve contract disputes, schedule variances and change orders, support the MERA IOR in monitoring the Construction Contractor's conformance with quality control requirements, providing input regarding the adequacy of construction personnel, equipment, materials and supplies, and oversee AECOM's production of the monthly reports as well as ensuring all project documents are managed, finalized and archived for MERA's records.
Construction Manager	Jonathan Sprague, is responsible for monitoring the Construction Contractor activities and contract administration including all project documents from the Construction Contractor's project management system, review and distribution to the appropriate reviewers, proactively monitoring review times and responses by reviewers, assisting the Construction Project Manager with the tracking and management of submittals, monitoring Construction Contractor conformance with the submittal schedule, downloading and distributing submittals to reviewers, reviewing responses for turnaround time, uploading status to Construction Contractor's project management information system, assisting the team with PCO research, maintaining logs for all documents including but not limited to action submittals, payments, dispute issues, PCOs and COs and alerting the Construction Project Manager when indicators show negative trends with costs, schedule, and untimely turnaround of documents.
Estimator	The AECOM cost estimating consultant, Corey Coleman, under the general direction and oversight of the Construction Managers, is responsible for preparing cost estimates for both Construction Contractor and Owner initiated change requests and value-engineering proposals; and will participate in change negotiations with the Construction Contractor as required.
Document Management	Madeline Goldaraz, AECOM Office Manager is responsible to provide executive support, oversee administrative support to the project team including preparation of reports and presentations, oversight of document control and assist the team with entering documents into the MIS.

LEGEND

C -	Cognizant/Aware	LP -	Lead/Provide
AP -	Approve/Accept	I -	Input/Support
RC -	Recommend	RV -	Review
P -	Participate		

RESPONSIBILITY MATRIX

This matrix identifies key design-build phase activities and assigns primary and support responsibility roles to the members of the Project Team.

Table 3. Design-Build Phase

Activity	Description	MERA Exec Ofc	MERA Dep Exec Ofc	FE	Implem. Coord	GC	AECOM Prog Mgr	AECOM Construction PM	AECOM CM	AECOM Radio/ Technical	AECOM Est	AECOM Schedule	AECOM Admin
Document Control:	Provide a real time web-based document management system as identified in the Project Definition Phase.	**C**	**P**	**P**		**I**	**C**	**LP**	**LP**				**I**
Project Management Plan:	Submit to the Client any changes or revisions to the Project management plan with regard to: (1) organization, (2) schedule, (3) budgetary control, (4) communications; and, (5) Design-Build phase procedures.	**RC**	**RC**				**I**	**AP**	**I**		**I**	**I**	**RV**
Performance Criteria Compliance and Design Review:	Review the Construction Contractor's design for compliance with the Request for Proposal, design guidelines, performance criteria, and codes; review the design for constructability, coordination of the constituent parts, operations and construction phasing; and report any discrepancies.	**C**	**C**	**P**	**C**	**I**	**LP**	**I**	**I**	**RC**	**I**	**I**	
Observation:	Prepare daily field notes - The field notes shall be summarized into monthly reports and submitted to the Client no later than the week following the report period.	**C**	**I**	**I**		**P**	**C**	**LP**	**LP**		**C**	**C**	
Materials Testing:	Coordinate activities of the Materials Testing Company with the Client, and the Master Architect; receive, distribute and monitor testing results, and report on non-compliance issues.	**C**	**C**	**C**		**P**	**RC**	**LP**	**LP**	**C**	**C**		
Reports	1. Prepare and distribute (1) PDF copy of monthly project status report to summarize project scope, budget and schedule issues; 2. Prepare and distribute one PDF copy of other report(s) as requested. 3. Provide electronic copies of the report in MS Word and PDF file format. (Discuss)	**C**	**C**	**C**	**C**	**P**	**RV**	**LP**	**I**	**C**			**I**

Activity	Description	MERA Exec Ofc	MERA Dep Exec Ofc	FE	Implem. Coord	GC	AECOM Prog Mgr	AECOM Construction PM	AECOM CM	AECOM Radio/ Technical	AECOM Est	AECOM Schedule	AECOM Admin
Activation:	Develop, monitor, and assist with a move-in program upon completion of construction.	**C**	**I**	**I**	**I**		**RC**	**RC**	**RC**	**C**			
Meetings:	Progress Meetings: Contractor shall lead weekly project meetings with MERA and prepare meeting agendas and minutes for distribution to all attendees and others as requested by MERA's representatives.	**C**	**P**	**P**	**C**		**LP**	**LP**	**LP**	**I**	**C**	**C**	**C**
Owner Meetings	Contractor shall lead separate weekly project meetings with MERA's team and prepare meeting agendas and minutes for distribution to all attendees and others as requested by MERA's representatives.	**C**	**P**	**P**	**C**		**LP**	**LP**	**LP**				**I**
Miscellaneous Meetings: (Principal Meetings: monthly meetings between the principal parties to the design and construction)	Attend and prepare minutes of Project meetings upon request. Prepare meeting minutes, which at a minimum, shall: • identify the persons in attendance, • items discussed, • action required to be taken prior to the next meeting, • persons required to take the action, • a time-line for the accomplishment of the action, • items from prior meetings that have been completed; • a separate weekly notification to MERA of any parties which have fallen behind in the performance of their assigned tasks.	**C**	**P**	**P**	**C**		**LP**	**LP**	**I**	**C**	**I**	**I**	**C**
Documentation:	a. CEQA Mitigation Monitoring: Monitor and document compliance with mitigation measures defined in the Final EIR and SEIR. b. Agreements: Monitor and document compliance with agreements with other agencies and utilities.	**C**	**C**	**C**		**C**	**C**	**I**	**LP**	**C**	**I**	**I**	**RV**

Activity	Description	MERA Exec Ofc	MERA Dep Exec Ofc	FE	Implem. Coord	GC	AECOM Prog Mgr	AECOM Construction PM	AECOM CM	AECOM Radio/ Technical	AECOM Est	AECOM Schedule	AECOM Admin
Photographs:	a. Take weekly digital photographs of the Project. Take additional Project photos as required or as directed by the MERA. The photographs shall be for the purpose of documenting the progress of the work and/or documenting potential problem issues and shall be identified by date and time when the photos were taken. Organize the photographs into an electronic photo album and store the images on two portable hard drives. b. At the completion of the Project, deliver the hard drives to MERA. Provide two professional, high quality, framed, 20" x 24" photos of the completed project.	**C**	**C**	**I / P**	**C**	**C**	**LP**	**LP**	**LP**				**I**
Schedule:	Provide construction scheduling support to monitor the progress of design and construction. Review in detail all the Construction Contractor's schedules and monthly updates; compare in detail the Construction Contractor's schedules to the Contractor's master schedule. The result of such review(s), in conjunction with input from other interested parties, shall be reported to the Slate within 10 days of receipt of the schedule.	**C**	**C**	**I**	**C**	**P**	**RC**	**LP**	**LP**	**C**	**I**	**LP**	**C**
Shop Drawings and Submittals:	Receive and log Master Architect identified construction submittal and closeout documents.	**C**	**C**	**C**		**C**	**C**	**I**	**LP**	**C**			**C**
Notices and Correspondence:	Review, electronically scan, and store all incoming notices or other correspondence. Maintain an electronic log of all incoming and outgoing notices and other correspondence indicating, at a minimum, the date, to, from, and subject.	**C**	**C**	**C**		**C**	**C**	**I**	**I**				**I**
Requests for Information (RFI):	Maintain an electronic log of all RFI's indicating the status, question, date received, answer, date answered, time from initial receipt to conclusion of the request, and the dates and times required for each party to act on each request.	**C**	**C**	**C**		**C**	**RC**	**I**	**LP**	**RC**			
Proposed Change Orders (PCO):	Estimate the cost and schedule implication of PCO's; assist in preparing and issuing PCO's; maintain an electronic log of all PCO's indicating the subject, status, related documents, date issued, and time from issuance to receipt of a change order request. Include pending PCO's in Budget projections.	**AP**	**AP**	**I**		**P**	**RC**	**RV**	**LP**	**I**	**I**	**I**	**C**

Activity	Description	MERA Exec Ofc	MERA Dep Exec Ofc	FE	Implem. Coord	GC	AECOM Prog Mgr	AECOM Construction PM	AECOM CM	AECOM Radio/ Technical	AECOM Est	AECOM Schedule	AECOM Admin
Change Order Requests (COR}:	a. Receive and review all change order requests and prepare a report which includes a determination of entitlement for a change order based upon the contract requirement; an independent estimate of the cost of the change; a summary of variances from the costs indicated on the received COR; an independent analysis on the schedule impact of the change; a summary of variances from the schedule impact indicated on the received COR; the reason(I) why the change is needed; and the Contractor's recommended action by MERA. Assist with resolution and negotiation of change requests. b. Maintain an electronic log of COR's indicating the subject, status, related documents, amount, date received, and the date returned for each party in the review and approval process for Change Orders. Include pending COR's in Budget projections.	**AP**	**AP**	**I**		**P**	**RC**	**RV**	**LP**	**I**	**I**	**I**	**C**
Change Orders (CO):	Prepare and track Change Orders; maintain an electronic log of CO's indicating the subject, scope, status, related documents, dollar amount, time extensions, and dates issued and executed; create a change order file including the related documentation which led to the change order; modify the budget and/or schedule if required.	**AP**	**AP**	**I**	**C**	**C**	**RC**	**RV**	**LP**	**RV**	**I**	**I**	**I**

Activity	Description	MERA Exec Ofc	MERA Dep Exec Ofc	FE	Implem. Coord	GC	AECOM Prog Mgr	AECOM Construction PM	AECOM CM	AECOM Radio/ Technical	AECOM Est	AECOM Schedule	AECOM Admin
Claims:	During the contract performance period, if a claim or potential claim arises, review all claim documentation and prepare a report which includes a determination of entitlement for a change order based upon the contract requirements; an independent estimate of the cost of the claim issue; a summary of variances from the cost indicated on the claim; an independent analysis on the schedule impact of the claim issue; a summary of variances from the schedule impact indicated on the received claim; the history of the claim; and the Contractor's recommended action by MERA. Create a claim file including relevant documentation which led to the claim; assist with resolution and negotiation of the claim. Maintain an electronic log of claims indicating the date received and the date(s) of actions taken regarding the claims. Include pending claims in Budget projections.	**AP**	**I**	**I**		**P**	**RV** **RC**	**RV** **RC**	**I**		**I**	**I**	**C**
Payments:	Receive and review the Construction Contractor's monthly requests for payment. Coordinate the reviews with the inspector and submit to MERA, along with the request, the Contractor's recommendation as to the appropriateness of the amounts indicated in the request. Maintain a log of Construction Contractor payments.	**AP**	**AP**	**C**	**C**	**P**	**RC**	**LP** **RV**	**LP** **RV**			**I**	**I**
Quality Assurance:	Provide onsite personnel to review daily construction activities of the Design- Builder and their Subcontractor to determine adequacy of the work and compliance with approved plans and specifications, deficiencies in the installed work are noticed, provide oral notification immediately and a written report to the MERA within forty-eight (48) hours of first noticing the deficiency.	**C**	**C**	**I**	**C**	**P**	**LP**	**LP**	**I**	**C**	**C**	**I**	**I**
Project Closeout:	Compile and maintain contractual deficiency list. The MERA inspector and the Master Architect will contribute items to deficiency lists.	**AP**	**I**	**C**	**C**	**P**	**RC**	**LP**	**I**			**I**	**I**
As-built drawings, Operation and Maintenance Manuals (O&M), Warranties, Spare Parts:	Document and transmit deliverable to MERA.	**C**	**C**	**I**	**C**	**P**	**I**	**LP** **RV**	**LP** **RV**	**I**			**I**

Activity	Description	MERA Exec Ofc	MERA Dep Exec Ofc	FE	Implem. Coord	GC	AECOM Prog Mgr	AECOM Construction PM	AECOM CM	AECOM Radio/ Technical	AECOM Est	AECOM Schedule	AECOM Admin
Project Files:	Files: Closeout all Project files maintained during Design-Build Phase in a manner acceptable by MERA, and transmit to MERA. Provide two electronic copies of all electronic files on portable hard drive.	**C**	**C**	**C**	**C**		**C**	**LP**	**LP**				**I**
Final Report	At the conclusion of all corrective actions for all punch list items, make a final comprehensive review of the project and develop a report for MERA. The final report shall indicate whether the Contractor finds the work performed acceptable under the terms of the Design-Build agreement. This report shall make recommendations as to the final payment and preparation of the Certificate of Project Acceptance by MERA	**AP**	**AP**	**C**	**C**		**RV** **RC**	**LP**	**RV** **RC**	**I**	**C**	**C**	**I**

PROJECT TEAM FACILITIES PLAN

The AECOM project delivery team will be working remotely due to new COVID restrictions. In the event provisions are needed for conference facilities, printing needs, group activities, remote overnight stays, personal protective equipment (above standard) or other costs unusual to the contract terms, these costs be itemized by AECOM and reimbursed by MERA.

RISK MANAGEMENT

AECOM will work closely with MERA to identify and implement project risk mitigations.

The Risk Register will be reviewed regularly with MERA, the Program Manager and Construction Project Manager.

Risks with high probability and high impact will be prioritized at the top of the risk register.

Risks with high probability and moderate impact or greater will be monitored.

Risk evaluation will include longevity, maintainability, collaboration, innovation, sustainability, local hiring and constructability.

RISK LOG

Identify and track project risks throughout the project.

Assemble the contingency report that encompasses all risks identified.

Properly code and prioritize risk potential.

See Risk Log - Appendix C.

PRE-PLANNING

Bid packaging is a key consideration while developing the project schedule. The schedule approximates how the individual project sites will be grouped into bid packages. The schedule/bid packages follow a logic in that the non-greenfield sites will precede the greenfield site projects. This logic is based on that the fact that the greenfield sites are much more complicated in their design and scope and will take longer to have their constructability reviews completed. Correspondingly, Arcadis will need more time to absorb the comments and to revise the drawings based on AECOM and third-party design reviews. In addition, the greenfield sites involve design coordination with PG&E new service drawings which adds to the complexity of the design. Finally, the greenfield sites have complicated and time-consuming lease negotiations since MERA is negotiating with new owners with which they have not had previous business experience with.

In general, the bid package sequencing is based on sites that have less complicated lease negotiations, based on MERA feedback. The goal is to allow site leases to be finalized well ahead of the associated bid phase so the sites that have relatively easy lease negotiations will precede those with more complicated lease negotiations. Second, project sites are roughly grouped by geographic area to minimize contractor mobilization costs.

Finally, each project site is designed so that it can be moved from one bid package to another in case an unexpected design or lease issue prevents the site design to be finalized in time for bidding. The bid packaging and associated schedule is designed for optimal flexibility to address any sites that are being delayed without causing the entire project to have its overall duration extended.

Bid Packages may include (final packaging to be determined at bid time):

- Design Documents
- Project Manual-General Conditions, Special Provisions, Technical Documents
- Geotechnical Report
- CEQA report
- EIR Mitigation Plan
- Construction Schedule
- Engineers Estimate (Summary)
- Logistics document-Right of Entry, EIR requirements by site, owner contacts etc

SCHEDULE MANAGEMENT

The Schedule Management will include site development activities as well as be coordinated with radio system installation. The master schedule will be detailed to include the overall construction durations as well as pre-planning, bidding, contract award and pre-construction activities that will be updated as new information becomes available. The detailed construction schedule is a contract requirement for the general contractor to provide and will be coordinated with master schedule.

DELIVERY MILESTONES

The project schedule has been developed to meet the following key milestones.

- Construction Procurement
- Construction Notice to Proceed (NTP)
- Site Development
- Radio Equipment Start
- Radio Equipment Finish
- Closeout/Decommissioning Gen 1

PART 2 – CONSTRUCTION PROCEDURES

PROJECT COMMUNICATION PROCESSES & PROCEDURES

MERA team communications, both internally and with the Construction Contractor and other stakeholders, shall be governed by the following basic protocols:

Be formalized in writing when a key decision or agreement is reached

Focus on efficiency and clarity

Utilize typical contract administration tools – Requests for Information (RFIs), Memos of Concern (MOCs), Product Submittals, Proposed Change Orders (PCOs), Document Control Logs, Cost Proposals, Owner's Change Requests (OCRs), Meeting Minutes, Transmittal Letters, eMails, etc.

Avoid adversarial tones

Reference specific contract requirements where appropriate

FILE MANAGEMENT SYSTEM

Project SharePoint Site - MERA team communications will be supported by an AECOM maintained Project SharePoint Site that will be:

- Password protected
- Accessible by all MERA- team members and key stakeholders
- Accessible by the Construction Contractor team for specific content areas
- The central point of MERA project team communications and a repository for project information and official project records.
- Updated daily
- Used to house project dashboards, key project indicators, project exception logs, and project status reports, including, but not limited to:
    - Daily Reports
    - Monthly Reports
    - CEQA Mitigation Monitoring Report
    - Architect's Site Visit Reports
    - Meeting Minutes
    - Special Reports
- Design documents
- Closeout Documents
- House the "official" MERA project record/archives

Principal contract administration communications between the Construction Contractor and the project team shall be via SharePoint. It will:

- Be utilized on a daily basis to transmit/receive RFI's, RFC's, submittals, inspection requests, etc.
- Be password accessible to all MERA project staff
- Be accessible remotely
- Be a means of real-time access to project information

PROJECT EXECUTION

The project execution will consist of project teams from MERA, the design team, construction manager, construction contractors and vendors who will provide input for their area of expertise to ensure all team members have what is needed to collaborate and ensure the project(s) are completed in a timely manner, within the budget constraints and constructed to the level of quality as outlined in the contract documents.

MEETINGS

Project meetings will observe industry protocols to assure that meetings are calendared, efficiently administered, and key actions and decisions are documented. Meeting types shall include:

RISK MANAGEMENT MEETINGS (AS NEEDED)

Risk Management meetings will be scheduled as needed when risks in the Risk Register are predicted to exceed contingency, and will include:

Attendees:

- MERA Deputy Executive Officer
- AECOM Program Manager
- AECOM Construction Managers
- Other project stakeholders (As requested)

Review of the risks will include:

- Prioritization of risk so that risks are appropriately understood and discussed.
- Status of the risks – is the risk increasing or decreasing, has the risk moved to a PCO or been voided.
- Trigger conditions that may change the risk profile
- Mitigation strategies

High impact risks are to be assigned to a Risk Manager (Dave Jeffries, MERA / Mark Chase, AECOM) to take the lead on analysis, monitoring and tracking of the mitigation. High risk items will be elevated as needed.

PROGRAM UPDATE MEETINGS (WEEKLY)

The Program Update Meetings will include:

a. Led by the MERA Construction Project Manager or as delegated.
b. Provide updates of deliverables, field questions from MERA and other stakeholders related to design, procurement, contracting and construction

CONSTRUCTION PHASE KICK-OFF MEETING

The Construction Phase “Kick-off” Meeting will include:

a. Led by MERA Construction Project Manager prior to site mobilization of construction activities
b. Include key representatives of the Construction Contractor and the MERA Team

c. Review construction deliverables including schedule, communication protocols, invoicing, media requests, key upcoming events, RFP design feedback among others

OWNER-ARCHITECT-CONTRACTOR (OAC) MEETING (WEEKLY)

MERA's Construction Project Manager will lead the weekly OAC meetings and will be responsible for preparing and distributing meeting minutes.

Agenda Topics (typical)

- Safety & Site Security
- Site Utilization
- Schedule Progress
- Short Interval Schedule Review
- Submittal/RFC Log Review
- Quality of Work
- PCO's and Change Orders
- Significant Project Issues

POTENTIAL CHANGE ORDER (PCO) REVIEW MEETINGS

AECOM will be responsible to lead PCO Review Meetings with the Construction Contractor to ensure that all scope changes are being captured, and related PCO estimates and negotiations are being resolved in a timely manner.

QUALITY MEETINGS

Meetings will be chaired by the Construction Contractor's Quality Control Manager and attended by the Inspector of Record (IOR), AECOM and representatives. The Construction Contractor shall prepare and distribute minutes.

CONSTRUCTION CONTRACTOR SUBCONTRACTOR MEETINGS

The Construction Contractor will conduct regular meetings with their subcontractors. The MERA team is not required to attend these meetings but may periodically attend or be invited by the GC to attend specific meetings.

SPECIAL MEETINGS

Special Meetings may be held as needed to discuss project specific topics related to:

- Monthly Payment Application Review Meetings
- Transition, Occupancy and Maintenance Meetings
- Community Outreach Meetings
- Radio Installation and System Validation Meetings
- Other meetings as necessary

DOCUMENT MANAGEMENT

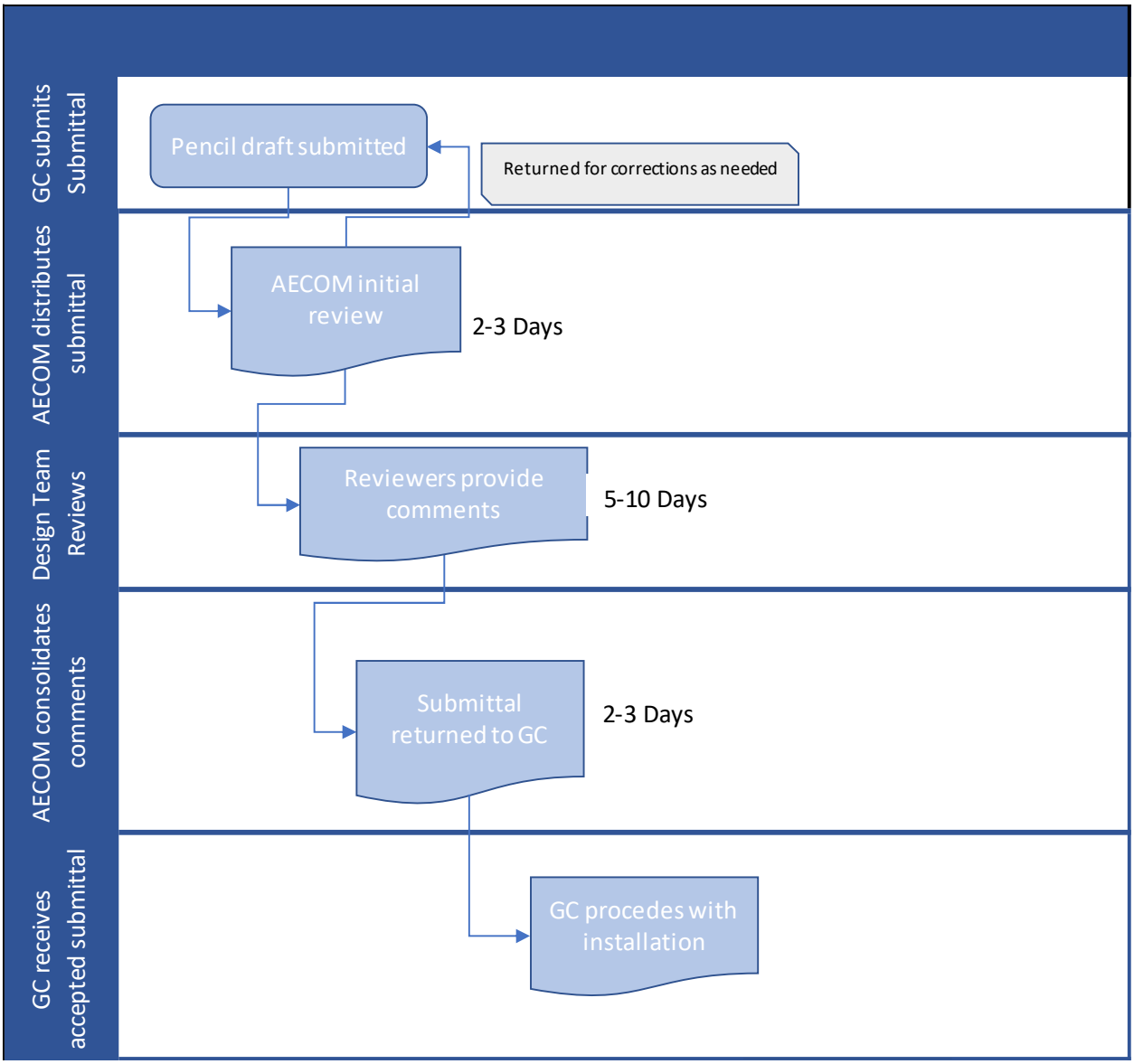
SUBMITTALS

1. AECOM shall document and maintain the flow of communications between the Construction Contractor and the MERA team and monitor on a weekly basis
2. AECOM shall reconcile MERA's information with the Construction Contractor's submittal log on a weekly basis.
3. AECOM will monitor the status of open submittals to confirm that the MERA team does not fall behind in its responsibility to provide timely and accurate reviews and will meet with the Construction Contractor weekly to confirm that the Construction Contractor's logs are consistent with the MERA team's records maintained at the Project SharePoint site.
4. Product Submittals

   This Submittal matrix designates the design, material and equipment submittals to be presented to the MERA project team for review and acceptance. AECOM with input from MERA and MSI shall confer to determine the appropriate submittal review designation and compile a master list for review and tracking with the GC.
5. Submittal Reviews Workflow (see Figure 7 below)

   AECOM is responsible for coordinating, collecting and reconciling all review comments, confirming the designation of approval actions and posting them in the Construction Contractor's system if applicable.
6. Large submittals with multiple stakeholders may require review meetings with multiple reviewers to facilitate timely and cohesive reviews.
8. MERA Submittal Review Team – Shall be responsible to review and comment on Submittals. The MERA Construction Project Manager will determine who will review submittals and will distribute accordingly.
9. Substitutions - The MERA Construction Project Manager, with input from the Criteria A/E and CM, is responsible for final approval of all Construction Contractor proposed substitutions.

Figure 7. Submittal Workflow Chart



REQUESTS FOR INFORMATION (RFI)

Construction Contractor will submit RFIs internally within its team if information and/or clarification is needed that does not require or warrant input by MERA or to provide internal clarification of an issue prior to the issuance of an RFI.

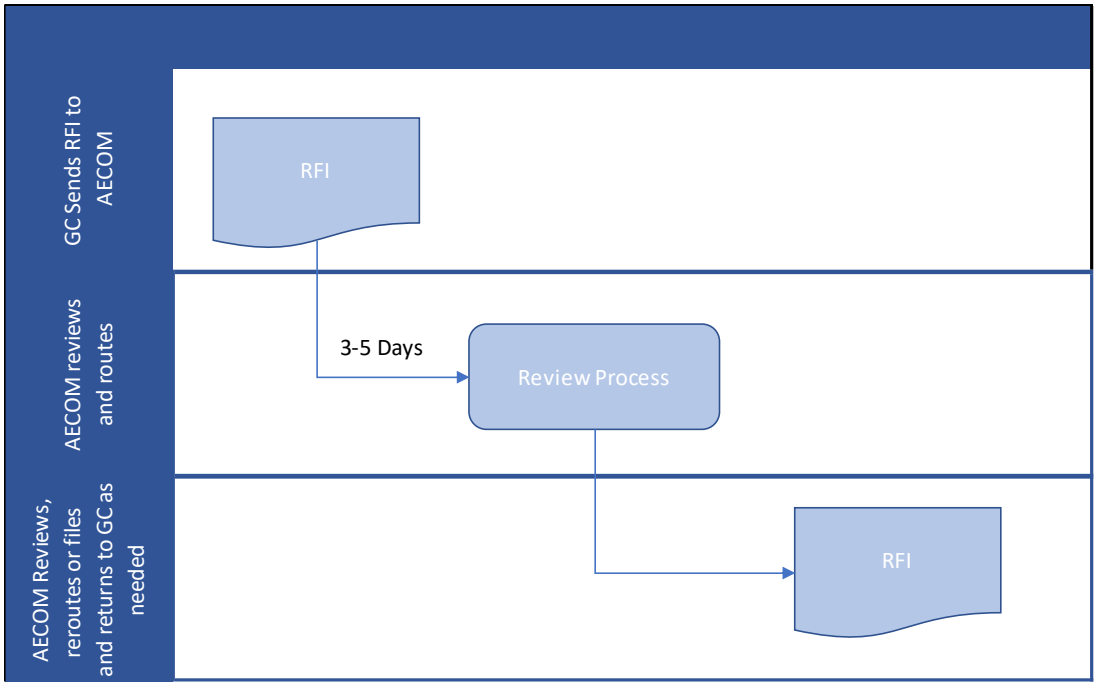
The Construction Contractor is responsible for examining all design and construction documents, and any Contract Document, and promptly reporting any ambiguity, error, inconsistency or omission through the internal RFI process.

All RFIs are administered internally to the MERA Project Management team.

RFIs are requests for internal clarification and information only. The Construction Contractor will allow MERA to access to all RFI documents, responses, and logs through PMIS, which will be necessary for MERA inspections

The workflow for RFI's will be processed in a timely manner and

Figure 8. Requests for Information (RFIs) Flow Chart



CHANGES

OWNER CHANGE REQUEST (OCR)

MERA Construction Project Manager approval is required with all OCRs.

Change Request Types:

- Acceleration
  - » Strategic Acceleration
  - » Directed Acceleration
- Design Changes

AECOM to analyze for cost and time impacts.

To be issued with Request for Quotation (RFQ) and Potential Change Order (PCO) forms as applicable.

CONSTRUCTION CONTRACTOR CHANGE REQUEST

The Construction Contractor may request a change (PCO) due to added scope, unforeseen site conditions, Act of God, Force Majeure or other relevant contract clause.

AECOM to analyze for merit, cost, and time impacts

AECOM to issue Potential Change Order (PCO) form and process as applicable

Figure 9. Owner Change Request (OCR) Flow Chart

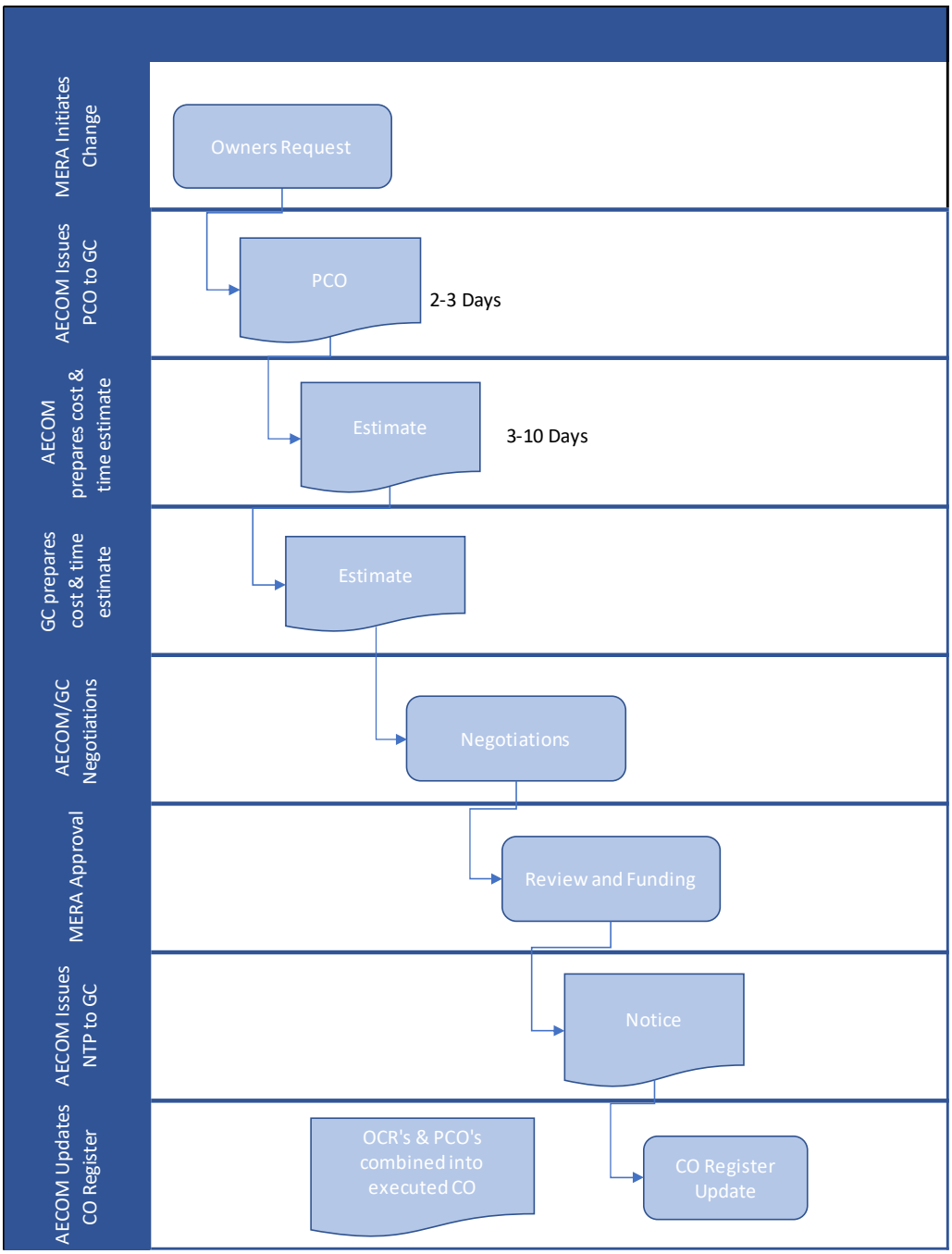
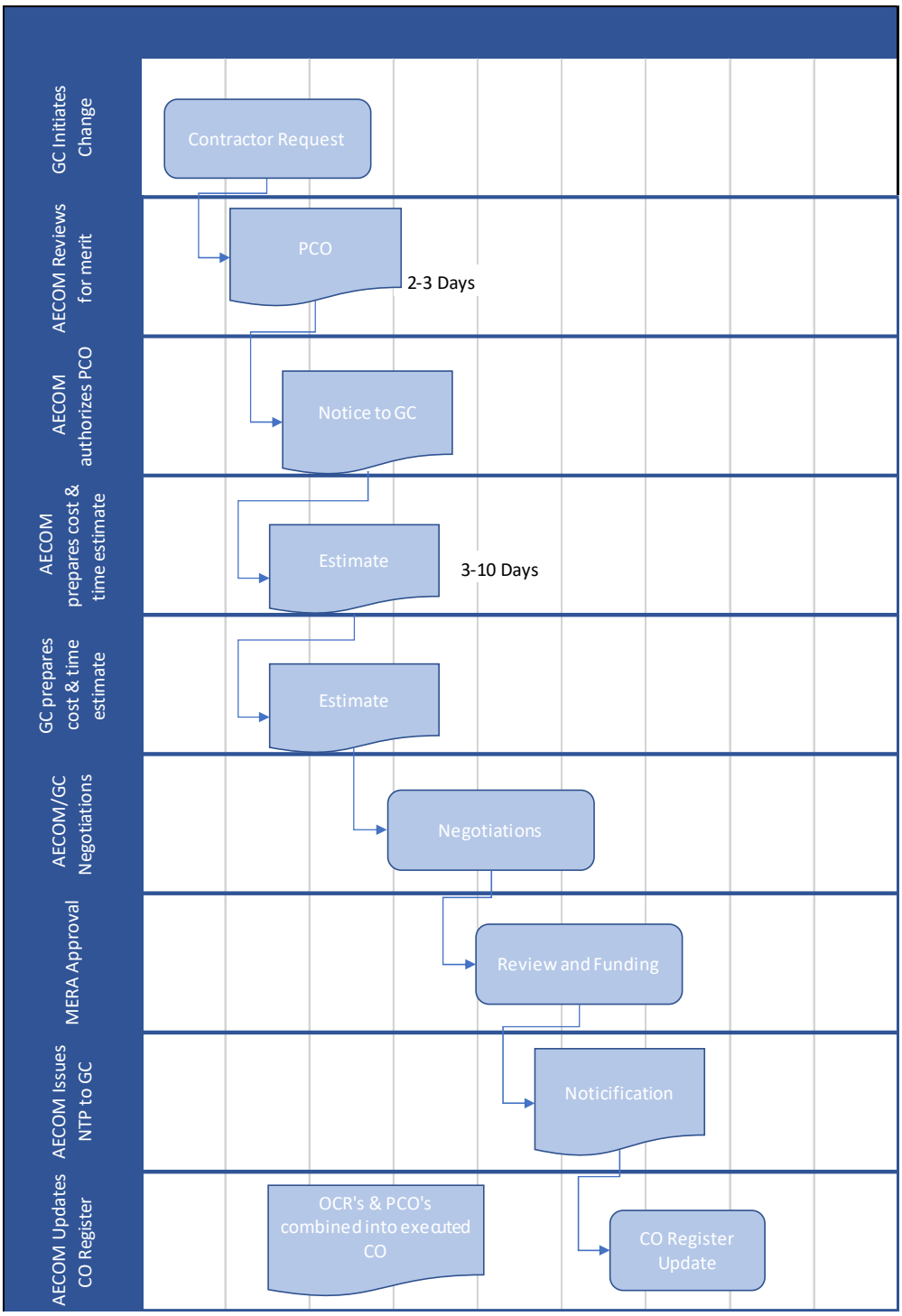


Figure 10. Construction Contractor Proposed Change Order (PCO) Flow Chart



REPORTING

PROJECT BRIEFINGS

Briefings to MERA will be held by the Construction Project Manager on a monthly basis. AECOM will provide narratives and photos in support of this effort as needed.

DAILY REPORTS

IOR, MERA inspectors, and Special Inspectors will submit their reports within 24 hours of inspections

The Construction Contractor will collect and submit daily reports in weekly intervals.

MERA Construction Project Manager confirms that separate Construction Project Manager Daily Reports will not be required. The Construction Project Manager will review the GC's daily reports of general activity on site and specific concerns or issues which may cause project delays or issues. The Construction Project Manager will note any inaccuracies related to the reports and require that corrected entries be submitted.

Daily Reports will be archived in SharePoint.

MONTHLY REPORT – AECOM

The MERA Project Team Monthly report will be drafted by AECOM and include information by Federal Engineering and the Implementation Coordinator presented to the MERA Deputy Executive Officer for review prior to distribution. It shall include:

Program Status including

- Program Milestones
- Current Activities
- Upcoming Activities
- Previously Completed Activities

Project Construction Status including:

- Narratives for Activities, Schedule, Issues, Safety & Inspection
- Contingency Report
- Progress Payment Applications
- Progress photos and status photos to be uploaded with the report
- Construction Schedule updates
- Quality Control

ARCHITECT/ENGINEER SITE VISIT REPORTS

The Criteria A/E will submit Site Visit Reports following each site visit

Reports to be submitted to AECOM

Distribution of reports is as follows:

MERA

Construction Contractor

IOR / Special Inspectors

Project Archive

PROGRESS PHOTOGRAPHS

All site visitors are encouraged to take photographs and archive them in the project document control system

STORAGE REQUIREMENTS

Photographs are to be taken on a weekly basis by the AECOM project team and stored on SharePoint.

LABELING AND FILING REQUIREMENTS

Photos will be logged and categorized by project location and date

ACCESS TO PHOTOS

Access to photos will be provided for MERA staff as well as other consultants and parties designated by MERA.

SCHEDULE

Scheduling Kickoff Meeting

AECOM to coordinate with the Construction Contractor to conduct a Kickoff Meeting to review Construction Contractor Preliminary Baseline Schedule

Construction Contractor will prepare a schedule detailing the key activities and deliverables during the first 90 days of the project

Preliminary Schedule Meeting

Full Schedule Review

Construction Contractor to provide full report narrative and specific layouts with the electronic schedule submittal

Narrative report with issues, constructability issues, contract phasing issues

Exhibits – technical reports

Suggested approval or rejection of schedule

One consolidated report back to the Construction Contractor with issues taken and changes that are required

Review of current status of activities and milestones as compared to baseline schedule.

Review of cost and resource loading status

Review of schedule logic, sequencing, and constraints

Monthly schedule update meetings concurrent with review of the monthly pay application process.

Short Interval Schedule – Short Interval Schedules (SIS) will be generated from the current CPM schedule, submitted weekly, and reviewed at the weekly OAC meeting scheduled, The Short Interval Schedule shall include the current week's projection and two weeks thereafter.

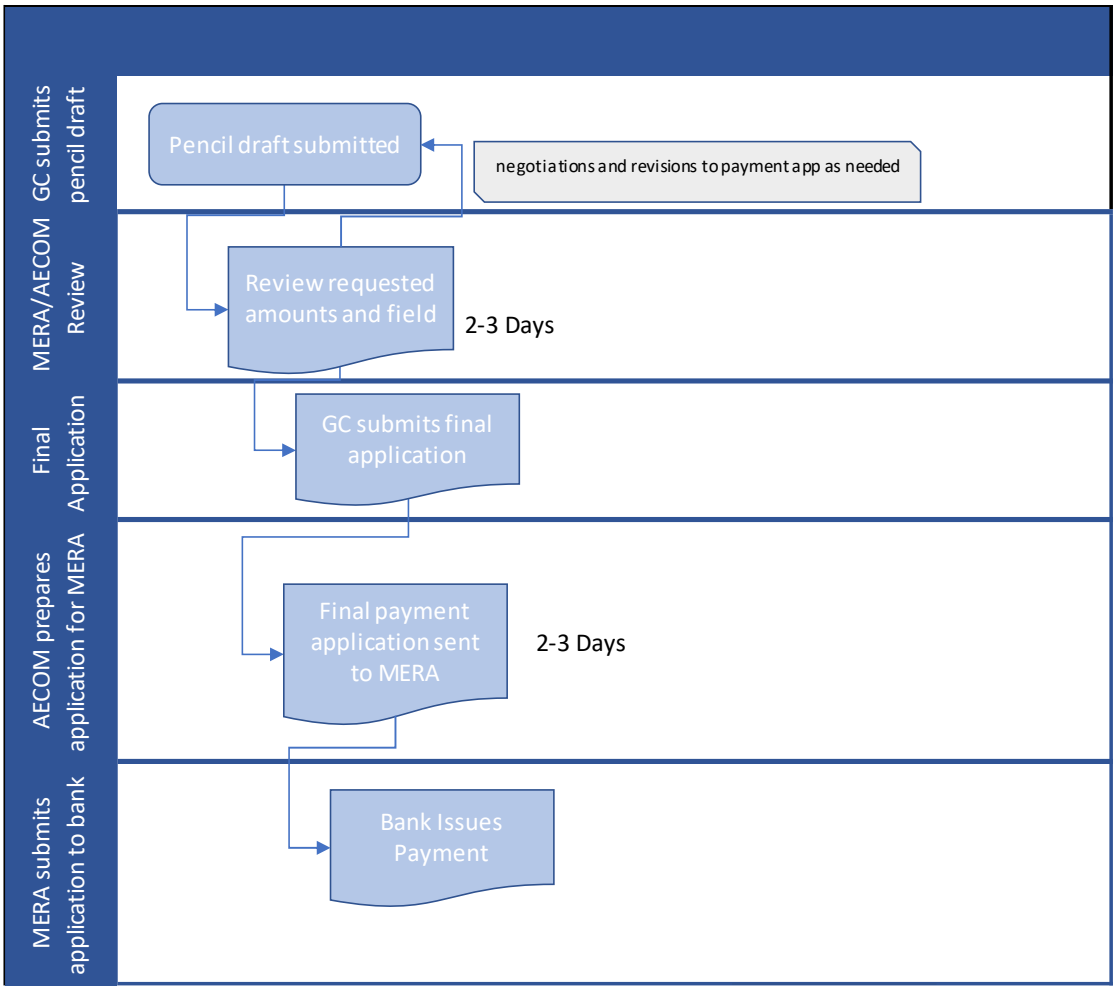
Recovery Schedule – If the updated monthly construction schedule submitted with each payment request shows the project to be behind schedule for any contract mandated milestone at any time during construction, the Construction Contractor must, within seven (7) calendar days prepare a CPM - Generated Recovery Schedule demonstrating its plan for returning to original schedule as expeditiously as possible.

PAYMENT APPLICATION

Payment Applications will be processed as follows:

1. Construction Contractor will submit a “pencil draft” of the pay application for review by AECOM and the inspection team, who will review and verify the requested percent completion of the activities.
2. Construction Contractor will revise the pay application based upon the revised percentage completion status and resubmit the “Final Payment Application” to AECOM.
3. AECOM will package Payment Application; which shall include:
    i. Updated Monthly Schedule
    ii. Confirmation of updated as-built documents
    iii. Completed Monthly Progress Payment Application Checklist
    iv. Stop Notices, Conditional Releases, and Unconditional Releases
    v. Certified Payroll documents upon request
    vi. A copy of the OCR (Opinion of Cost Reasonableness) for PCOs being billed
4. Payment Applications should include payment of encumbered PCOs from the current contract funds until the associated Change Order has been fully executed. (Caution should be taken when the project nears the completion stage to ensure that there are sufficient contract funds to disburse for billed activities and PCOs.)
    a. AECOM forwards to MERA Deputy Executive Officer with authority to recommend approval of the Payment. The MERA Executive Officer will review, sign and forward the Payment Application to the MERA financial institution for payment.
    b. MERA’s financial institution issues the check to the Construction Contractor.

Figure 11. Construction Contractor Payment Application Flow Chart



DISPUTED WORK

The Construction Contractor has ten (10) days to file a dispute after the rejection of a PCO or other project issue.

When responding to a dispute, or in the initial rejection, the MERA team must be clear on why the PCO is being rejected.

Disputes should be handled at the lowest level possible and be escalated.

Dispute numbers should only be issued once a formal dispute has been received. AECOM will not log a dispute into the Contingency Report until it has been formally received.

When the Construction Contractor is performing disputed work they must give notice and AECOM is to track the work on Time & Material (T&M) tickets for verification of labor hours and materials used.

Dispute File:

Keep information factual, do not document opinions

Use the Construction Contractor's position as written by the Construction Contractor. Construction Project Manager shall not reword

AECOM to document any resolutions

*****Urgency not to exceed 5 days and not delay the work:

CLAIMS

Reference the General Conditions for specific requirements. Any dispute issued prior to the contract being complete will be administered as disputed work. A claim submitted prior to the project completion will be returned noting the contract requirements.

The MERA Project Management team will make every reasonable effort to resolve disputed work to avoid the inefficiency and breakdown in team trust that accompanies.

EIR MITIGATIONS

Mitigation Monitoring and Reporting Plan (MMRP)

AECOM to:

- Use the Mitigation Monitoring and Reporting Program (MMRP) matrix developed from the Subsequent Environmental Impact Report (SEIR) prepared for the MERA Next Generation Radio Communications System.
- Monitor and report on the status of mitigations per the matrix requirements

PERMITS

The Construction Contractor shall be responsible to obtain applicable permits per the contract requirements.

AECOM Construction Project Manager with support by the Construction Manager will be responsible for monitoring the permitting process.

Payment for specific permits shall be per the contract requirements. (In some cases, the Construction Contractor shall be responsible for payment. In other cases, AECOM may pay permit cost with reimbursement by MERA.)

Project permits may include, but are not limited to:

- Grading Permit
- Storm Water Pollution Prevention Plan (SWPPP)
- Encroachment Permits
- Local Utility Service Permit
- PG&E Service Permit
- City Water Permit
- Air Quality Control Board Permit

INSPECTIONS

MERA Inspection procedures:

The Construction Contractor will assign inspection request tracking numbers and submit requests a minimum of 24 hrs. prior to the requested inspection.

The Construction Contractor is required to verify work is complete prior to inspection.

Inspectors will provide verbal approval or rejection at the time of inspection. A signed copy of the inspection request form will be available the following day.

The MERA inspection staff will attend pre-mobilization meetings for subcontractor trades.

If after receiving a failed test result, or an inspection of the Work by the MERA team determines that the work does not comply with the Contract Documents, the California Building Code, or other applicable code and regulatory requirements, AECOM will issue a Non-Compliance Notice (NCN) requesting corrective action.

SPECIAL INSPECTIONS & MATERIALS TESTING

A 3rd party special inspections & materials testing consultant (Krazan) will be retained by MERA to perform testing and inspection services as required by the California Building Code, the Contract Documents, and additional tests or inspections required by the CM and/or IOR.

MERA is responsible for the day-to-day management of the 3rd party special inspection & materials testing process.

SAFETY/SECURITY

Access to the site will be controlled by the Construction Contractor. All parties should refer to the Construction Contractor's procedures for site access which should include:

- Construction Contractor Requirements that all visitors must have appropriate Personal Protective Equipment (PPE) to access the site.
- Appropriate PPE is defined as closed toe shoes with substantial soles, long pants, shirts with sleeves, hardhat, high visibility vests and safety glasses. Hardhats, vests and safety glasses will be provided for MERA visitors at the MERA site office, if needed.
- Requirements that all visitors attend the mandatory site safety training and orientation; otherwise visitors must be accompanied by a team member who has participated in the site safety training and orientation.

AECOM will provide safety observations during construction activities and recommend actions for contractors to correct if a hazardous condition is observed.

- The County of Marin COVID-19 Health & Safety policy will be implemented at all work sites. It is the responsibility of the Construction Contractor to abide by the latest COVID Health & Safety protocols required by City, County, and State & Federal mandates.

PROJECT COMPLETION/CONTRACT CLOSEOUT

The plan for closeout of the Design Build contract includes:

1. Occupancy Tests as determined in lease agreements
2. Punchlist Inspections, Stakeholder Activation of radio system
3. Project Records Turnover
4. Attic Stock turnover
5. Site Office Demobilization
6. Final Project Report
7. Project Document Archives
    a. As-Built turnover
    b. Warranties
    c. Training
    d. O&M manuals

e. Construction record archives

f. Contract Closeout

PUNCHLIST INSPECTIONS

Punchlist Inspections will be provided as follows:

Plan Check Compliance for Motorola responsible contract work: Radio Project Manager

Plan Check Compliance for MERA responsible contract work: Construction Project Manager

Technical Design Compliance: Motorola Solutions

AHJ OCCUPANCY TESTS

MERA is the AHJ on this project and has authority over any occupancy tests needed. If any lease agreements with property owners determine that additional occupancy tests are required, they will be addressed at that time.

APPENDICES

APPENDIX A – SITE LOGISTICS

Site Logistics

APPENDIX B – ENVIRONMENTAL MITIGATION

Environmental Mitigation Measures Matrix and Descriptions

APPENDIX C - RISK REGISTER

Risk Register