PORT OF ALASKA MODERNIZATION PROGRAM

# Program Management Plan

Revised October 2022

*Prepared for*
Port of Alaska

Jacobs HDR

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# PMP Revision Control Log

| Revision | Date Issued | Description of Changes | Pages Affected |
|---|---|---|---|
| 1 | 09 SEP 14 | Global update for project name; updated Lindsey Whitt's title; revised flow charts; revised Sec. 7.2. 7.2.1, 9.1 per Executive Committee comments 6/30/14; deleted all "company confidential" | Cover page, all pages where Port Intermodal Expansion Project is referenced, 7-1, 9-1, A2-1, A2-2, A4-1 |
| 2 | 26 JUN 15 | Revised document to reflect changes in staff and organization and updated processes to reflect current program direction | |
| 3 | 17 OCT 22 | Significant revision to define program processes | All |

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# Signatures

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# Acronyms and Abbreviations

| | |
|---|---|
| A/E | Architectural/Engineering |
| CM | construction manager |
| CMAR | Construction Manager at Risk |
| CSRA | Cost and Schedule Risk Analysis |
| DAB | Design Advisory Board |
| D-B | Design-Build |
| D-B-B | Design-Bid-Build |
| EC | Executive Committee |
| GC | general contractor |
| GMP | Guaranteed Maximum Price |
| ITB | Invitation to Bid |
| MASS | Municipality of Anchorage Standard Specifications |
| MASSB | Municipality of Anchorage Standard Specifications Building |
| MCS | Master Control Schedule |
| MOA | Municipality of Anchorage |
| O&M | operations and maintenance |
| PAMP | Port of Alaska Modernization Program |
| PD-B | Progressive Design-Build |
| POA | Port of Alaska |
| PM | Project Manager |
| PMP | Program Management Plan |
| PMO | Program Management Office |
| POL1 | Petroleum, Oil, and Lubricants Terminal 1 |
| POL2 | Petroleum, Oil, and Lubricants Terminal 2 |
| QA | quality assurance |
| QC | quality control |
| QMP | Quality Management Plan |
| SOV | Schedule of Values |
| T1 | Terminal 1 |
| T2 | Terminal 2 |
| TO | task order |
| TOTE | Totem Ocean Trailer Express |
| USACE | U.S. Army Corps of Engineers |
| WBS | work breakdown structure |

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# Section 1. Introduction

## 1.1 Program Management Plan Agreement

The objective of this Program Management Plan (PMP) is to provide process guidance to the Municipality of Anchorage (MOA) and its contractors, the Port of Alaska (POA), and the Program Management Office (PMO) for the Port of Alaska Modernization Program (PAMP).

## 1.2 Program Introduction

The PAMP will modernize the port in multiple phases while it remains in operation. The program will replace the four main terminals: Petroleum, Oil, and Lubricants Terminal 1 (POL1), Petroleum, Oil, and Lubricants Terminal 2 (POL2), Terminal 1 (T1), and Terminal 2 (T2), demolish the old terminals, stabilize the North Extension, and relocate the POA Administration Building.

MOA has retained a collaborative Jacobs/HDR team as the PMO to provide professional program management and construction management services for the PAMP.

## 1.3 Team Charter

### 1.3.1 Mission

To serve the MOA/POA to build and maintain a modern, safe, and efficient facility with an adaptable, versatile plan to support the multimodal movement of goods throughout the state.

### 1.3.2 Vision

To have an integrated team, versed in POA planning and operations, that will collaborate to create an innovative, cost-effective, and efficient solution for the PAMP.

### 1.3.3 Goals

To improve operational safety and efficiency, accommodate modern shipping operations, improve resiliency to survive extreme seismic events and sustain ongoing cargo operations.

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# Section 2. Functional Organization

## 2.1 Functional Organization Structures

The PAMP organization structure is depicted on Figure 2-1.

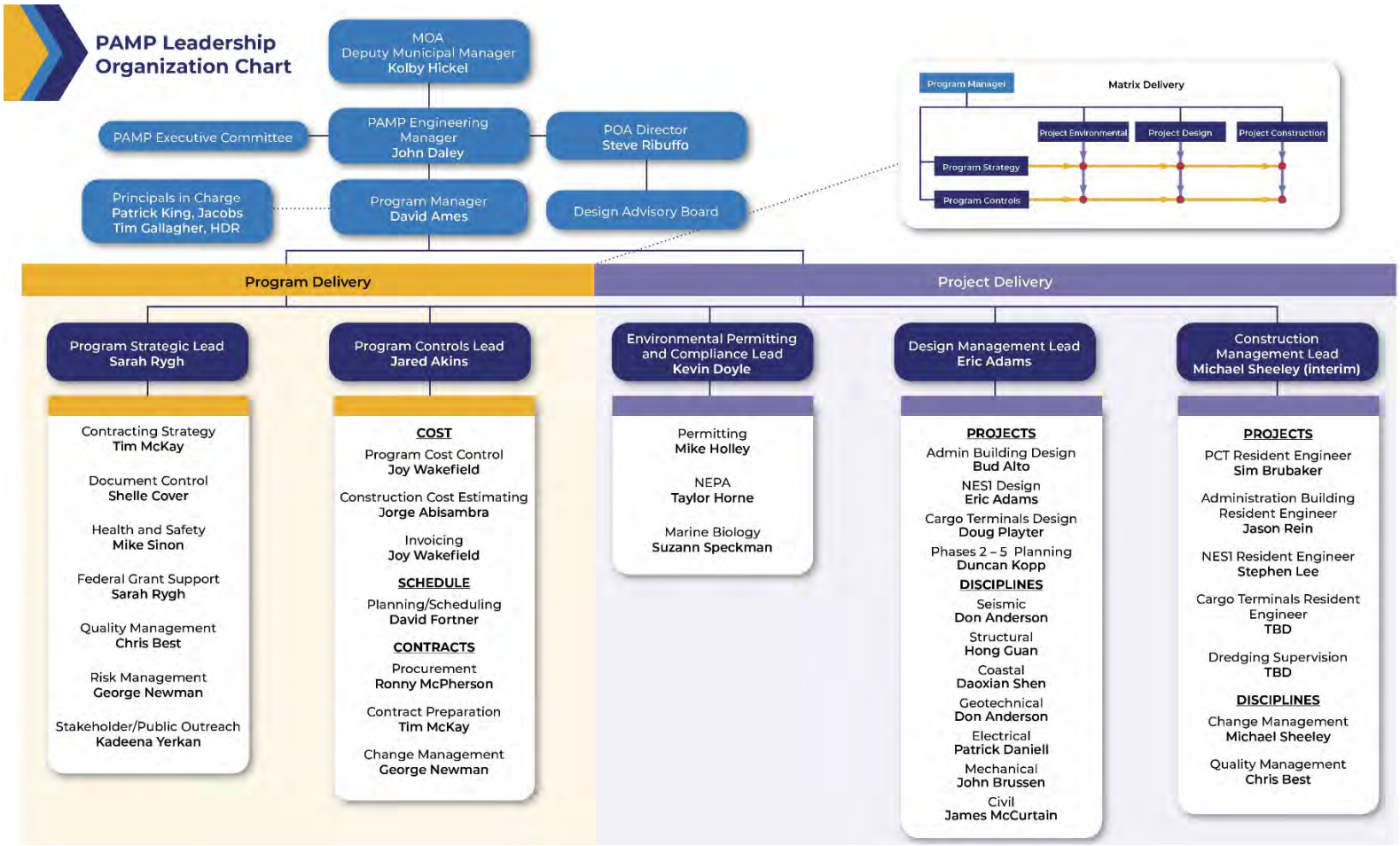


Figure 2-1. PAMP Leadership Organization Chart

### 2.1.1 Client Leadership

There are several levels of management and oversight for the PAMP. Program oversight includes Anchorage's Assembly and the Mayor, with more hands-on management through the Executive Committee (EC), the Design Advisory Board (DAB), and the Port Designated Representative.

The program is contracted through MOA and is overseen by the Municipal Manager and MOA staff. The program is managed at the POA office with the Port Designated Representative serving as the Project Manager (PM) for the program.

#### 2.1.1.1 Executive Committee

The EC supports the program and meets regularly to discuss program status, issues, and upcoming program work. The EC is led by the Port Designated Representative. EC members are defined in Table 2-1.

#### 2.1.1.2 Design Advisory Board

Assembly Ordinance No. 2020-81 established a Design Advisory Board led by the Port Director and is composed of an individual selected by the Mayor, a Matson nominee, a Totem Ocean Trailer Express (TOTE) nominee, and a member representing a petroleum user. The PAMP DAB's role is to discuss user functional requirements, seismically resilient dock designation, and overall needs for future cargo and fuel infrastructure and advise the Mayor on how these matters should be incorporated into the Basis of Design documents. The DAB's focus is intended to be on general infrastructure requirements than on detailed engineering specifications. Nevertheless, user operating requirements or equipment needs demand specific design considerations, users are expected to provide detailed equipment specifications and other relevant information to the DAB. The DAB submits their advice and recommendations as needed to the Mayor for consideration. The Mayor shall submit a resolution agreeing with those recommendations or offering an opposing opinion to the Assembly for consideration. After a public hearing, the Assembly shall rule on the narrative relevant to the recommendations that shall be incorporated in the Basis of Design, with changes it deems necessary or advisable.

The DAB meets at least twice per year. The POA will provide quarterly updates to the DAB, and more if requested.

#### 2.1.1.3 PAMP Change Management Board

The Port Designated Representative also leads the Change Management Board, which includes the Program Manager, the Program Delivery Lead, the Program Controls Lead, the Environmental and Permitting Compliance Lead, the Design Management Lead, and the Construction Management Lead. Decisions affecting the program baseline need to be approved through the PAMP Change Management Board, including those already approved through the DAB or EC.

These roles are filled by the people listed in Table 2-1.

Table 2-1. PAMP Program Leadership Roles

| Title | Name |
|---|---|
| MOA: Deputy Municipal Manager | Kolby Hickel |
| PAMP Engineering Manager | John Daley |
| ***MOA PAMP Executive Committee:*** | |
| Mayor | Dave Bronson |
| Municipal Manager | Amy Demboski |
| Deputy Municipal Manager | Kolby Hickel |
| Chief of Staff | Alexis Johnson |

Table 2-1. PAMP Program Leadership Roles

| Title | Name |
|---|---|
| Senior Policy Advisor | Larry Baker |
| Port Director | Steve Ribuffo |
| Director of Business Continuity and External Affairs | Jim Jager |
| Port Engineer | Brian Weigand |
| Project Management and Engineering Director | Kent Kohlase |
| Purchasing Director | Rachelle Alger |
| Purchasing Officer | Chris Hunter |
| Purchasing Officer | Amos Snoddy |
| Assistant Municipal Attorney | Robert Owens |
| Chief Fiscal Officer | Ross Risvold (acting) |
| Port Director of Finance | Cheryl Beckham |
| ***Design Advisory Board:*** | |
| Port Director | Steve Ribuffo |
| Mayor nominee | Larry Baker |
| Matson nominee | Vic Angoco |
| TOTE nominee | Art Dahlin |
| Petroleum user nominee | Bert Mattingly |
| ***Change Management Board:*** | |
| PAMP Engineering Manager | John Daley |
| Program Manager | David Ames |
| Program Strategic Lead | Sarah Rygh |
| Program Controls | Jared Akins |
| Environmental Compliance & Permitting | Kevin Doyle |
| Design Management Lead | Eric Adams |

## 2.2 Program Management Consultant Leadership

The PMO is led by the PAMP Program Manager. The Program Manager is supported by five leadership roles within a matrix organization composed of Program Delivery and Project Delivery. These five leadership roles work together to deliver the program under the guidance of the Program Manager. The leadership team is organized as a matrix organization with a program delivery focused on the program process supporting project delivery, which is focused on the specific projects within the program. Within Program Delivery, the Program Strategic Lead and Program Controls Lead deliver consistent, relevant, and reliable processes within the program. The implementation of these program processes supports Project Delivery led by the Environmental Permitting and Compliance Lead, the Design Management Lead, and the Construction Management Lead. These roles are depicted on Figure 2-1 and described in the following sections.

### 2.2.1 Principals-in-Charge

The Principals-in-Charge serve as liaisons with the MOA and POA so that the PMO delivers professional services that meet POA expectations in achieving the objectives of the PAMP. They support the Program Manager with oversight of PMO performance, governance, and guidance as required. They have the ability to bring additional resources to the work as required to deliver performance.

### 2.2.2 PAMP Program Manager

The PAMP Program Manager is responsible for delivering professional services to the client in accordance with various task orders (TOs) under the MOA Master Services Agreement for Professional Program Management Services, Vender Contract 4400000035. The PAMP Program Manager manages the projects of the PMO and directs the work in accordance with the contract. This individual leads the PMO located at the POA and is the primary senior contact for the POA while implementing the PAMP. The Program Manager is accountable to the POA for the active management of the PAMP scope, schedule, and budget. Responsibilities include providing leadership, organization, and quality assurance (QA) to the PMO portions of the PAMP team, along with recommendations and advice to the client based on individual experience and the input and experience of the team. The PAMP Program Manager is accountable to the Principals-in-Charge and, in a Jacobs administrative role, is responsible for governance in the implementation and oversight of Jacobs policies and procedures for Jacobs-assigned personnel.

### 2.2.3 Program Strategic Lead

The Program Strategic Lead is responsible for overall implementation of this Program Management Plan, making sure each team member is familiar with the processes described within it. This individual works closely with the Risk Manager to identify, quantify, and mitigate each risk, maintaining a risk register to be actioned by the team monthly. The Program Strategic Lead will also work closely with the Quality Manager to deliver the program according to the Quality Plan, implementing both quality control and quality assurance processes for the PMO-produced deliverables and contractors. This individual will lead the decision-making process to select a contracting strategy for each project. The Program Strategic Lead will work with the POA, its consultants, and the MOA lobbyists to identify, apply for, and plan for federal grants as well. This person will also oversee implementation of the document control plan, the health and safety plan, and the public outreach support to the POA. Successful implementation of these processes will set the team up well for successful delivery of PAMP projects.

### 2.2.4 Program Controls Lead

The Program Controls Lead is responsible for the program controls aspect of program delivery, including cost management, schedule management, invoices, procurement, contract preparation, and program change management. This individual is responsible to the PAMP Team for creating and updating the PAMP Master Schedule, including tracking activities and reporting earned value data. Responsibilities also include maintaining and reporting on the PAMP budget as per information provided by the client, including the funds managed under the PMO contract and external PAMP activities. In addition, the Program Controls Lead supports monthly invoice generation and the development of PMO tasks. Closely coordinating with various elements of the PAMP Team, the Program Controls Lead oversees the creation of various products used by the PAMP and PMO for external communications. The Program Controls Lead provides support to PAMP Team decision-making efforts associated with assessing schedule and budgetary effects of various execution strategies and potential changes.

### 2.2.5 Environmental Permitting and Compliance Lead

The Environmental Permitting and Compliance Lead guides permitting and environmental activities for the PAMP. This individual provides oversight to the PAMP Permitting Lead, National Environmental Policy

Act Lead, and Marine Biology Lead, directing the development and execution of permitting strategies, along with providing senior environmental engineering direction to the team.

### 2.2.6 Design Management Lead

The Design Management Lead is responsible for planning and design activities associated with the PAMP. Reporting to and working with the Program Manager in a leadership role, this individual aligns the efforts of those planning and design professionals assigned to the program with PAMP objectives, applicable laws, and regulations. Responsibilities include capturing PAMP requirements, advising the PAMP PM of planning and design issues, developing the overall strategy for design efforts, and leading and supporting the PAMP Team in the development of scopes of work. Design Management Lead duties also include supporting the PAMP Team in the development of schedules and budgets for design, contract documents for design and data collection requirements, and construction contract documents. Responsibility for monitoring the progress of TOs and design projects, assisting the assigned Project Managers as required toward achieving the delivery of design deliverables on time and within budget, and confirming that teams have the resources and ability to address technical issues also fall to the Lead, as well as providing professional advice on strategies to enhance PAMP execution.

### 2.2.7 Construction Management Lead

The Construction Management Lead is responsible for construction services for the PAMP. Working to support the efforts of construction professionals, the Lead aligns projects with PAMP objectives, applicable laws, and regulations. This individual is responsible for conducting bid-ability and constructability reviews and will work with the Design Management Lead to support the development of construction documents and procurement packages that protect the interests of the POA and can be administered under MOA contracting procedures. Keeping the scope of construction contracts within the budget and schedule is a key responsibility. The Construction Management Lead is accountable for oversight of PMO administration of PAMP construction contracts, verifying compliance of PMO construction teams and construction vendors with the terms of construction contracts, and construction change management, as well as providing professional advice on strategies to enhance the execution of the PAMP.

## 2.3 PMO Responsibilities

The PMO will provide services for the PAMP, including program administration and controls, planning and design phase services, and construction phase services. The scope of responsibilities are summarized in the following sections. The detailed scope of work can be found in the Master Services Agreement.

### 2.3.1 Program Administration and Controls

Responsibilities of program administration and controls include:

- Providing and staffing a PMO to actively manage the program. The PMO will be based in Anchorage, onsite at the POA. The PMO will be staffed with credentialed PMs in key positions.
- Developing and maintaining this PMP.
- Developing and maintaining an overall master control schedule (MCS) in Primavera P6 software.
- Developing and maintaining a program baseline and cash flow projection of financial needs based on the current schedule to assist MOA/POA with financing and cash management.
- Producing monthly schedule and budget status reports for the EC.
- Reviewing and advising the MOA/POA on interim cost estimates, invoicing, and pay requests by consultants and contractors.

- Assisting in development of a comprehensive risk management program.
- Assisting in the procurement of grants, when requested, through the preparation of environmental information documents, cost effectiveness analyses, value engineering studies, and other grant application data.
- Consistent with the communications management plan, assisting MOA/POA with customer and public outreach by coordinating the efforts of MOA/POA staff, design consultants, and construction contractors when conducting outreach meetings. Planning, attending, and presenting program information to interested stakeholder groups as requested by MOA/POA also is a charge.
- Developing and maintaining an electronic document management system. The PAMP uses Aconex as its primary document management system.
- Providing general administrative support for the program, including scheduling meetings, sending reminders, preparing agendas and minutes, and preparing presentations.
- Assisting and supporting the MOA to resolve claims with third parties under contract with MOA.

### 2.3.2 Planning and Design Phase Services

Responsibilities of planning and design phase services include:

- Advising MOA/POA on planning, design, and environmental requirements; identifying data gaps; and performing analysis to validate planning and design assumptions. Key subject areas include program phasing, navigation, berthing and mooring, sedimentation management, and seismic design and performance criteria.
- Advising the MOA/POA on regulatory permit processes and requirements, including application and processing times in the program schedule, identifying data gaps, and performing studies or other work needed to begin design and secure permits.
- Facilitating the permit application process with agencies, including the U.S. Army Corps of Engineers (USACE), National Marine Fisheries Service, and the MOA Community Development Department, Development Services Division.
- Assisting MOA/POA with selection of and contracting with Architectural/Engineering (A/E) consultants, general contractors (GCs), Design-Build (D-B) entities, construction management and contractor entities, or Progressive Design-Build (P-DB) entities. Develop procurement documents in coordination with the MOA Purchasing Department to secure these services.
- Coordinating and managing the work of MOA/POA consultants and contractors, including reviewing submittals. Conduct detailed engineering and bid-ability and constructability reviews, and make recommendations pertaining to material and equipment selection, installation, and integration.
- Performing peer review of design submittals, including plans, specifications, and cost estimates, and reviewing for completeness, accuracy, and consistency with the program plan, industry and MOA standards, and contract requirements.
- Developing and implementing a standard procedure for cost estimating in coordination with Program Controls.
- Providing technical expertise when needed to advise MOA/POA on key decisions during design.
- Facilitating value engineering reviews when required by MOA/POA.
- Developing a logical sequence of construction procurement packages that allows the POA to remain operational and in regulatory compliance during construction.

- Coordinating commissioning requirements in both design and construction contracts to identify, develop, and document obligations of the designers and contractors during the commissioning process to the satisfaction of MOA/POA.

### 2.3.3 Construction Phase Services

Responsibilities of construction phase services include:

- Assisting in site management (logistics) at the POA, particularly as it relates to minimizing disruption of POA services because of increased construction activity onsite.
- Supporting the MOA construction services procurement process by conducting bidder site visits and assisting in pre-bid conferences, responding to bidder questions, and issuing addenda.
- Serving as Owner's Representative to administer construction contracts in accordance with MOA standard specifications.
- Conducting and documenting preconstruction conferences and progress meetings.
- Overseeing the provision of construction support services by the A/E during the construction phase of tasks.
- Reviewing, approving, and facilitating timely processing of submittals, requests for information, deviation requests, payment requests, and change orders. Maintaining logs of program documents and formal correspondence.
- Assisting with addressing issues during construction. Provide advice and recommendations pertaining to proposed equipment and material substitutions, field installation problems, and so on.
- Assisting MOA Legal with negotiating change orders, claims, and other areas of dispute, and providing a recommended course of action.
- Coordinating with POA staff, tenants, users, public utilities, and construction contractors to minimize disruption caused by utility shutdowns. Ensuring construction bid packages clearly identify the obligations of contractors to plan and coordinate shutdowns and transfer activities.
- Ensuring construction contractors comply with permits; monitor, document, and report compliance with permits.
- Providing routine, special, and jurisdictionally required inspections during construction. Maintain field journals and prepare daily reports. Maintain photo records of the program.
- Managing development, updates, and completeness of record drawings and operations and maintenance (O&M) manuals for the POA.

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# Section 3. Stakeholder Management Plan

## 3.1 Introduction

This Stakeholder Management Plan identifies internal and external stakeholders and outlines protocols for communication and conflict resolution. It is an important foundation of PAMP delivery because effective communications benefit the program in the following ways:

- Building and maintaining support of PAMP sponsors, team members, and other key stakeholders
- Keeping team members up to date and informed on the progress of the PAMP, achievements, and major issues or challenges
- Providing consistent information and messaging to partner and regulatory agencies
- Monitoring and managing follow-up on action items
- Ensuring timely communication of critical issues to PAMP management and affected team leads

## 3.2 Stakeholder Management Plan

Identifying internal stakeholders and partners is the first step in successfully implementing the Stakeholder Management Plan. The primary internal stakeholders for the PAMP include the MOA, the POA, and the Design Advisory Group.

Stakeholders include:

- MOA Elected Officials
  - Mayor
  - Assembly
- State of Alaska Elected Officials
  - Governor
  - State legislators
  - Federal delegation
- Tenants and Operators
  - TOTE
  - Matson
  - ABI
  - Petroleum users
  - Department of Defense
  - Public utilities
- Regulators
  - USACE
  - National Marine Fisheries Service
  - U.S. Environmental Protection Agency
  - U.S. Coast Guard
  - U.S. Fish and Wildlife Service
  - Alaska Department of Environmental Conservation
  - Alaska Department of Fish and Game

  - Alaska Department of Natural Resources
  - MOA Public Management & Engineering
  - Flood Hazard
- MOA Community Development Department/Development Services Division
  - Building Safety
- MOA Department of Health and Human Services/Administration Division/Environmental Services
  - Noise
  - Air Quality
- MOA Boards and Commissions
  - POA Commission
  - Geotechnical Advisory Commission

## 3.3 Protocols for PMO, POA, and MOA Communications

Effective and efficient team communications are essential to success. This program will require direct involvement from POA and MOA staff. Regular communication is encouraged across the PMO, POA, and MOA by the people performing the work. Communications should always be in a professional tone. Avoid speculation, arbitrary statements, and judgmental statements that reflect personal opinions or views.

Internal communications will be documented through email and Aconex software communication. The standard protocol will be to copy the Program Manager on communications that the PMO exchanges with internal MOA and POA staff. Additional lead contacts may be identified as needed for the program.

Team communications are founded around regular, planned contact between the PMO, POA, and MOA, as indicated in Table 3-1.

Table 3-1. Communication Frequencies

| Daily | Weekly | Monthly | As Needed |
|---|---|---|---|
| • Engage on developing issues | • PAMP Leads meeting | • Executive Team meeting<br>• Submit monthly report | • Engage on developing issues<br>• Program changes |

To facilitate effective, efficient communications and disseminate information, the following tools are provided to aid team communications:

- **Executive Team Meetings—**The Program Manager (and key staff and key subconsultant staff as necessary) leads a monthly meeting with the EC to discuss program status, issues, and upcoming project work. Members of the EC were defined in Section 2.
- **Team Progress Meetings—**The PMO team and the POA Designated Representative meet weekly to update each other on progress made during the week, upcoming work, and issues to discuss. Meeting summaries are published for these meetings.
- **Project Meetings—**As needed, appropriate members of the PMO team, contractors, and the POA Designated Representative will meet to coordinate various aspects of project delivery. Specific examples include the weekly permitting meeting held with USACE, weekly construction meetings with the construction contractor, and weekly design team meetings.
- **Log Use—**The PMO maintains an Action Item Log on the Jacobs SharePoint site providing a centralized location for PAMP action items. This log also records decisions, providing a record of the actions taken

to arrive at a decision. Members of the PMO and the POA Designated Representative are expected to contribute to the log. The Program Delivery Lead manages this log.

- **Change Management**—Potential changes in scope, schedule, or budget are discussed within the team, proposed to the Program Manager, and then discussed with the POA Designated Representative. Changes are documented in accordance with Section 5.6, Change Management Plan.

## 3.4 Protocols for External/Public Stakeholder Communications

External, or public, stakeholder communications are undertaken with care and professional judgment. MOA, as PAMP owner, leads communications with external parties where direct PMO communications are not allowed. When the need for such a communication is identified, the Communications Plan located in Appendix A should be consulted.

## 3.5 Conflict Resolution Protocols

Conflict may occur for a variety of reasons, including differing priorities, differing expectations, role ambiguity, program changes, interpersonal issues, and other causes. Excessive conflict can adversely impact the program schedule, quality, budget performance, and team cohesiveness. This PMP, coupled with program initiation activities, seeks to address and reduce potential sources of conflict by clarifying team roles, responsibilities, protocols, and expectations.

The PAMP conflict resolution strategy consists of the following steps:

- Identify the issue and determine its impact on the program.
- Discuss the issue with those involved, listen to their concerns, and look for areas of common interest.
- Investigate potential solutions and commit to a solution.
- Follow up on the solution to help confirm that the conflict has been addressed and that it will not resurface as a recurring issue.
- If the conflict results in a change to either the program or a contract, the change should be documented in accordance with Section 5.6 Change Management Plan.

## 3.6 Suggested Tools for Reduction of Conflict

The following tools may help reduce conflict and deal with conflict when it does arise:

- Minimize conflict before it arises. Work at developing good relationships with colleagues founded on mutual respect.
- Look for win/win approaches or outcomes: how can problems be solved as partners rather than as opponents?
- Think situations through before speaking out or acting on them, particularly areas of known sensitivity or potential conflict.
- Work on your communication and presentation skills when discussing a sensitive topic that may be prone to conflict.
- When conflict arises, avoid email and other written communication. Communicate verbally, ideally in person.
- Apologize when appropriate; for example, when a misunderstanding has occurred.

- Engage an independent review where possible.

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# Section 4. Communications Management Plan

The Communications Management Plan is developed as a separate document and is included as Appendix A.

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# Section 5. Project Delivery Approach

## 5.1 Scope Management Plan

The term “scope” refers to the sum of products, services, and results that will be provided by the PAMP. The purpose of a Scope Management Plan is to set forth the plans and procedures for developing, defining, verifying, controlling, and changing the program scope. The intent of scope management is to complete the work required, and only the work required, to finalize the PAMP successfully.

The overall PAMP scope will modernize the POA in multiple phases while it remains in operation. The program will replace the four main terminals (POL1, POL2, T1, and T2), demolish the old terminals, stabilize the North Extension, and relocate the POA Administration Building. To support the delivery of the overall PAMP scope, the MOA will issue the PMO TOs identifying the specific services.

The PAMP scope is defined under the program baseline and continuously managed using the Work Breakdown Structure (WBS).

### 5.1.1 Work Breakdown Structure

The WBS provides a clearly defined hierarchy of work at the core of integrated management control as the framework to organize, plan, estimate, and schedule PAMP activities. The WBS for the PAMP has been established and agreed upon by the PMO and POA and is reflected in the WBS of the MCS and further incorporated into the Cost Breakdown Structure (CBS). The WBS encompasses the project’s work scope and successively subdivides that work scope into increasingly detailed and manageable subsidiary work components and products. All scopes of work, associated work tasks, and deliverables are included in the PAMP WBS by specific assignment to a WBS element and they support decision making for the duration of the PAMP. Project work products are linked, cross-referenced, or associated through a numerical index with a WBS element. The integration of the WBS into the MCS and CBS is critical for providing accurate, comparable data and it generates consistent information to measure performance, analyze options and changes, evaluate earned value and produce meaningful reports for decision makers. Figure 5-1 illustrates the PAMP WBS.

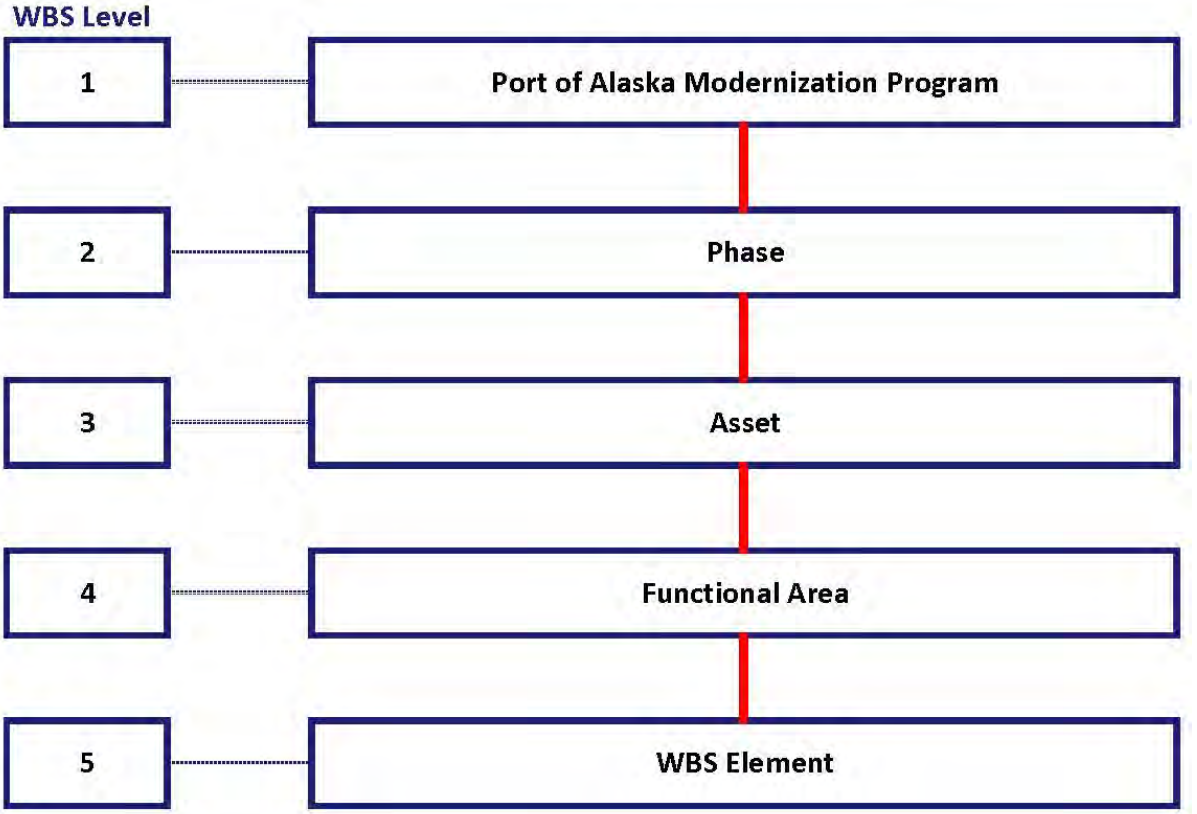


Figure 5-1. Port of Alaska Modernization Program Work Breakdown Structure

### 5.1.2 Program Baseline

The program baseline is the roadmap for delivery of the PAMP and integrates schedule and cost data across the program projects and contracts. This integration allows decision makers to quickly identify required resources and interproject interfaces and to recognize potential risks early enough to mitigate impacts on delivery. Integration of data via the program WBS is used to confirm that critical milestones, activity detail, logic, duration, and resources fully represent the program and related project work scopes. This integration also allows for clear identification of interproject interfaces and links through logical dependencies.

Work is monitored against the program baseline to determine progress, performance, and projected expenditures. Because the program baseline contains the program scope, it allows for a comprehensive review process to confirm schedule accuracy. Measurement against the program baseline also provides a means for forecasting and an ability to identify trends, deviations, upcoming activities, and pending changes while calling attention to the need to adjust plans to mitigate negative effects on the PAMP.

The program baseline is currently maintained as the MCS in Primavera P6 and an Excel-based program budget report. Detailed breakdowns of both the MCS and the program budget report are included in the PAMP Rebaseline Basis of Schedule and PAMP Rebaseline Basis of Estimate documents.

### 5.1.3 Changes to the Baseline

Changes to the baseline are continuously controlled through the change management process defined in Section 5.6, Change Management Plan. The baseline does not change without an approved change.

In the event that the PAMP baseline no longer provides the ability to adequately track the work, the Program Controls Lead will recommend that the MCS baseline be revised. Upon approval by the PAMP

Engineering Manager, the rebaseline process will be completed by the Program Controls Lead. After approval of the revised baseline, it will serve as the new baseline for the PAMP.

In the event that a PAMP contractor project schedule no longer provides the ability to adequately track the work, the Program Strategic Lead or the Program Controls Lead will recommend that the contractor's project schedule be rebaselined with new milestones. Upon approval by the PAMP Engineering Manager, the contractor will be directed to rebaseline its project schedule. The revised baseline will be provided to the Program Strategic Lead and Program Controls Lead for review and recommendation of approval to the PAMP Program Manager, prior to submission to the PAMP Engineering Manager for final approval. After approval of the contractor's revised baseline, it will serve as the new baseline for the contractor's project schedule. All contractor work will be evaluated against the baseline.

### 5.1.4 PMO Task Order Scope Development

The PMO manages its work through Task Orders authorized by the MOA and under the direction of the PAMP Engineering Manager. Prior to beginning the development of the TO scope, a kickoff meeting is held between the applicable Delivery Lead and the Program Controls Lead to review the following sources:

A. PMO Master Services Agreement
B. Applicable codes, regulations, statutes, and laws
C. Defined requirements for the work
D. PAMP MCS and funding availability

The Delivery Lead will lead the initial development of the draft TO scope, cost estimate, and schedule information (to include development of a P6 schedule fragment that will be supported by the Program Controls Lead) using PMO template files provided by the Program Controls Lead.

To maintain independence of functions, self-performance of TOs by the PMO will be rare and only used in extreme circumstances. Self-performed TOs by the PMO will not be reviewed by firms that the PMO is overseeing on another aspect of the PAMP. Proposed self-performed TOs will be reviewed by the Municipal Attorney and the PAMP Engineering Manager.

### 5.1.5 Task Order Scope Definition

The Delivery Lead and the Program Controls Lead will work together to draft the TO scope, cost estimate, and schedule definition. The Program Controls Lead will provide the relevant PAMP scope, budget, and period of performance requirements shown in the following sections.

TO scope definition begins at WBS Level 4, Functional Area, with further decomposition to WBS Level 5, WBS Element (refer to Figure 5-1, PAMP WBS Levels).

TO cost estimate alignment is achieved as specific resources are assigned to each WBS Element. Estimated quantities and WBS Element time phasing are incorporated to provide the final estimated TO value. The TO level of effort will be matched to the PAMP's budget for the portion of work.

TO period of performance is determined based on a review and analysis of requirements of the PAMP MCS.

## 5.2 Schedule Management Plan

The Schedule Management Plan details the processes to plan work over time considering the costs and resources for that work. The Schedule Management Plan establishes the management activities by which program time is measured, reported, and controlled through the use of the MCS and WBS.

The Schedule Management Plan contains information regarding the activities, procedures, and roles and responsibilities for these processes.

This Schedule Management Plan will identify:

- Methods for schedule definition
- Methods for schedule control, updating, and reporting
- Methods for schedule change control
- Who has the authority to approve updates, changes, and rebaselines

### 5.2.1 Schedule Definition

Effective time management of program activities and milestones is essential to successful delivery of the PAMP and requires coordination among the program team members. Milestones indicate when major activities are to be completed so that plans can be implemented and resources coordinated appropriately.

The level of detail of schedules and milestones develops as the program progresses (Figure 5-2). Overall program baseline expectations have already been set in terms of schedule and cost. As the scope for each project is defined, project milestones will be identified and approved by the PAMP Program Manager and PAMP Engineering Manager; this will form the project baseline. These project milestones then will be further refined and finalized as the project construction contract is awarded and the contractor schedule is obtained, resulting in project baselines. Milestones will be entered into the appropriate level of schedule (program, project, or control).

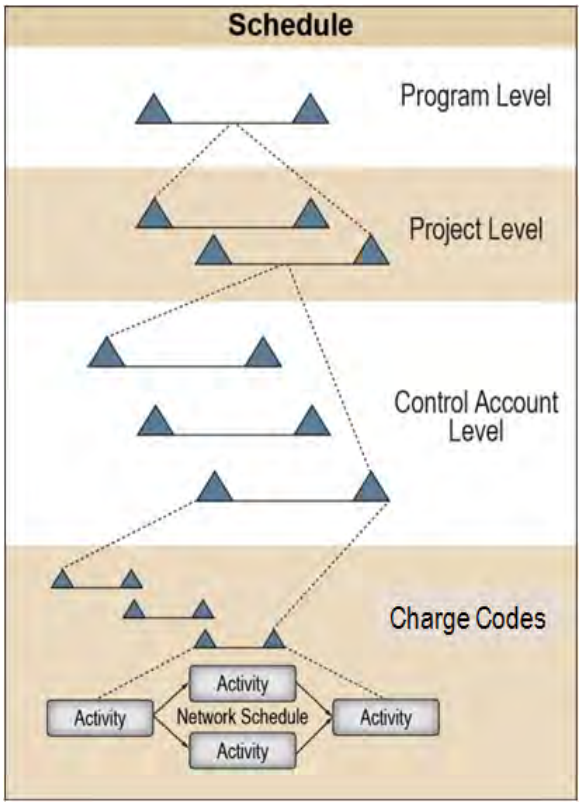


Figure 5-2. Schedule Development

Milestones are reported in detail that is progressively summarized from project to program to executive level, as shown on Figure 5-3. Interface milestones, where one project is reliant upon another project or an external party, will also be identified and coordinated by the PAMP to enhance integration and communication across the entire program. Interim completion milestones are used to define the completion of a task within a project. Final completion milestones refers to the overall end date of a project.

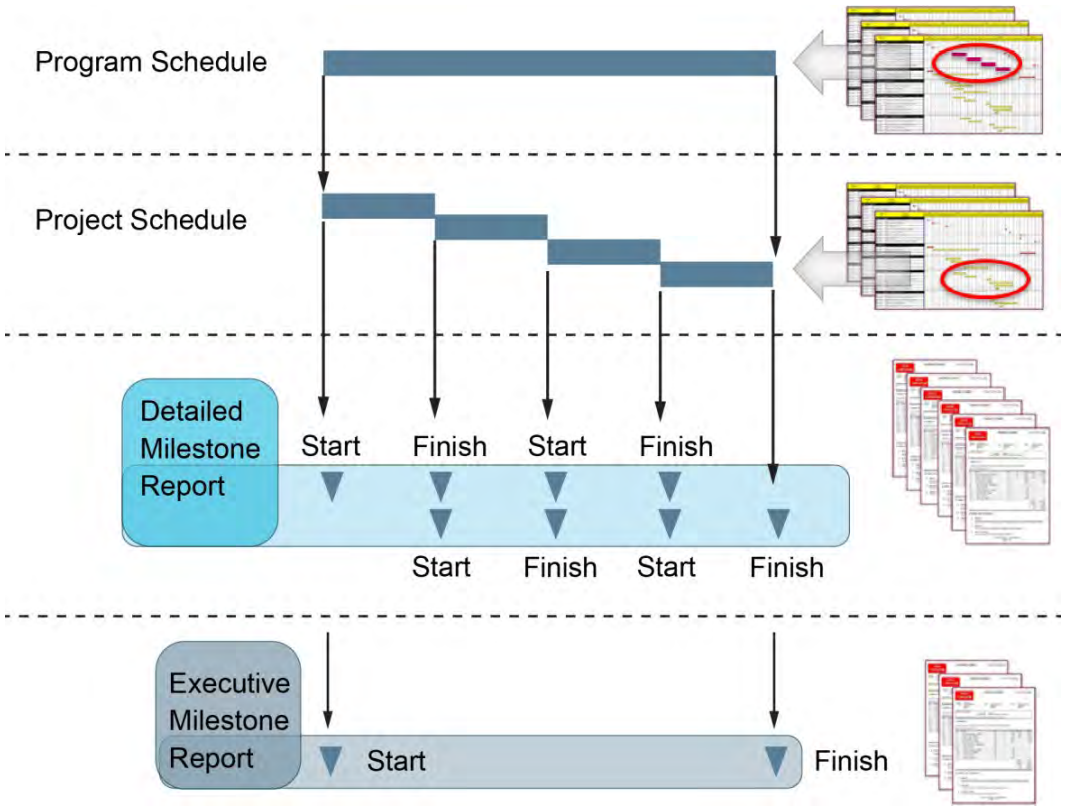


Figure 5-3. Hierarchy of Milestone Reporting

### 5.2.2 Schedule Control and Updates

Maintaining status of an integrated schedule requires coordination among the program team members. This starts with the program controls team in developing standards and requirements that then are flowed down to relevant parties and through contract requirements. Phase, asset, and functional area milestones will be finalized as the program progresses and design, construction, and other major contracts are awarded. Contract specifications will include requirements for the PAMP's WBS; schedule format information such as working calendar, required activity codes, data transfer methodology, and requirements; and the types and frequency of schedule updates required. Program schedule data will be stored or provided in P6 format (schedule data such as WBS, activities, milestones, logic, and cost will be provided to the program). This integrated collection of schedule information across the program WBS allows schedule updates to be performed at different levels and also summarized to appropriate levels.

During the procurement phase, bidders will be required to develop and provide a proposal schedule with an accompanying basis of schedule. Upon completion of negotiation and contract award, the proposal schedule and basis of schedule will be refined further to satisfy the baseline schedule contract requirements. Upon approval by the PAMP, the contractor baseline schedule and subsequent updates will be used and aligned with the MCS.

The PAMP MCS will be updated by the Program Controls Lead biweekly (schedule data date will be set for Monday), with progress updates from the Delivery Leads for communication and control of deliverables on the PAMP.

PAMP contractor schedule updates will be provided throughout the course of contract execution and reviewed for compliance with the contract requirements by the applicable Delivery Lead. The Program Controls Lead will review and provide final approval of schedule updates. Upon approval of the contractor's schedule update, the schedule will be incorporated into the MCS.

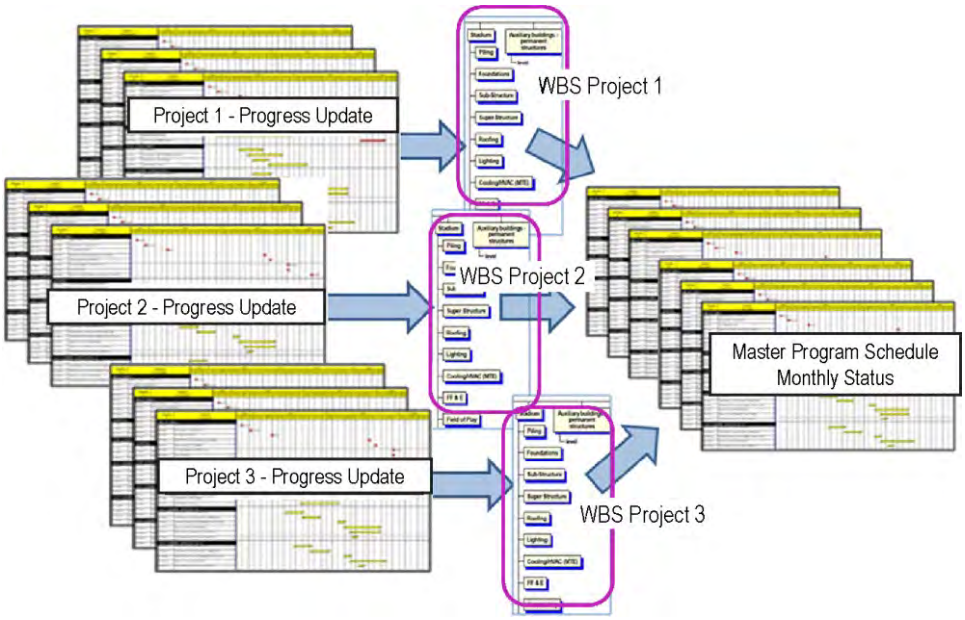


Figure 5-4. Program wide Schedule Updates

### 5.2.3 Schedule Reporting

P6 displays schedule information in many ways. Traditional views of schedules present data in a manner that is easy to follow and understand. This view can be set up to display different variables depending on the needs of the viewer.

Conventionally, Gantt charts are used. These show the logical connections between activities, which illustrate the sequencing and logical relationships between activities, with further options for filtering and sorting data to enable focus on specific scope.

Tabular views show information for each activity, such as the program WBS, in which project activities are associated with each activity's identification number (Activity ID), the activity description, and related columns of data. This includes start date, finish date, original duration, remaining duration, and total float. This view can be configured to show other data such as baseline, forecast, and variance for a given month, and to reveal changes in float, which can be useful for determining how well specific activities are proceeding. Total float is defined as the time available in the schedule before the project end date will be delayed. Activities with zero total float are on the critical path and will be monitored closely.

Progressed schedule updates will be provided to the PAMP team on a biweekly basis. This update will include a schedule showing all active work, a 4-week look-ahead schedule and a variance report showing changes to both the last update as well as against the baseline. The 4-week look-ahead schedule focuses the team on schedule achievement of near-term work. It spurs coordination and planning to make sure all required program processes (for example, quality control) have been completed prior to delivery. The variance report provides the information necessary to show how a change to one activity affects another (for example, a permitting delay may delay a construction start date). Discussion of the variances is necessary for proactive program management. Each of the variances will be discussed in terms of schedule mitigation to achieve the identified critical path.

Output data from the PAMP MCS will also be included in the monthly status report to the MOA. The most applicable MCS update (as determined by the Program Controls Lead) will be included as an appendix to the monthly status report to the MOA. The goal will always be to include the most current schedule update possible for reporting to the MOA.

### 5.2.4 Schedule Change

The PAMP MCS will be updated following approval and execution of the PAMP Program Change Request process. For PAMP contractor change orders, the contractor's project schedule will be updated to include approved contract change orders. These change orders will be incorporated into the PAMP MCS following approval of the next contractor schedule update.

For additional information, refer to Section 5.6, Change Management Plan.

## 5.3 Cost Management Plan

The Cost Management Plan details the processes for managing program financial resources that are followed throughout the program. The Cost Management Plan establishes the management activities required to confirm that project activities can be completed within the defined budget. The plan includes information regarding the activities, procedures, and roles and responsibilities for these processes and establishes the management activities by which the program costs are measured, reported, and controlled.

The key processes in cost management are as follows:

- Estimate Costs – Estimation of the monetary resources needed to complete the project
- Determine Budget – Aggregation of costs and activities to determine a cost baseline
- Control Costs – Monitoring project status to update budget and manage changes to the cost baseline

The purpose of this Cost Management Plan is to define the methodology by which costs associated with the PAMP will be managed throughout the program lifecycle. To confirm the successful completion of the program within the allotted budget, this plan sets the format and standards by which the program costs are measured, reported, and controlled. Metrics, cost variance considerations, and reporting activities will be outlined in this plan. To complete this program successfully, all key program members and stakeholders must adhere to and work within this Cost Management Plan and the overall program plan it supports.

This Cost Management Plan will:

- Outline the overall program cost management approach
- Outline how the program cost, budget, and source of funding will be determined
- Identify the methods to be used for quantitatively measuring and reporting on cost performance
- Identify the reporting formats, frequency, and to whom they are presented

### 5.3.1 Cost Management Approach

The Cost Management Plan approach requires that the program resources assist in establishing and managing the total cost of ownership of the program. This includes establishing the estimated budget and measuring actual spending against the planned budget for the items of the WBS.

Program costs that are self-performed by the PMO TOs are managed at WBS Level 5. Control accounts (CAs) are created at this level to track cost. The Program Controls team will receive progress information from the applicable Delivery Leads on a monthly basis. Earned valued percent complete calculations for the CAs will measure the financial performance of the individual TOs.

Program costs performed by PAMP consultants and contractors are also managed at WBS Level 5 through an approved Schedule of Values (SOV). Each PAMP contractor's monthly invoice submittal will be

validated against field observations of the physical percent complete and then incorporated into the cost reporting system. Earned value percent complete calculations included on the SOV measure and manage the financial performance of the PAMP consultants and contractors. SOVs will be submitted after contract award and will be reviewed and approved by the Delivery Lead, with final approval by the Program Controls Lead.

### 5.3.2 Performance Reporting

The purpose of performance reporting is to facilitate management decisions and communication about resource allocations to achieve cost and schedule performance objectives. Analysis of cost and schedule performance variances and forecasting final cost and schedule results provides the PAMP information needed to help control and improve work performance.

At the beginning of the performance reporting process, program costs are evaluated by the PAMP and the progress of work performed is measured. This results in an updated schedule reflecting the status of all work performed as of the end of the financial period. Using the progressed schedule, earned value analysis is calculated and incorporated into cost reports. Significant cost variances are identified, with corrective actions to follow. This process is depicted on Figure 5-5.

PAMP TO earned value cost reports are sent to the Delivery Leads on a biweekly basis. The overall PAMP budget report is included in the monthly PAMP status report.

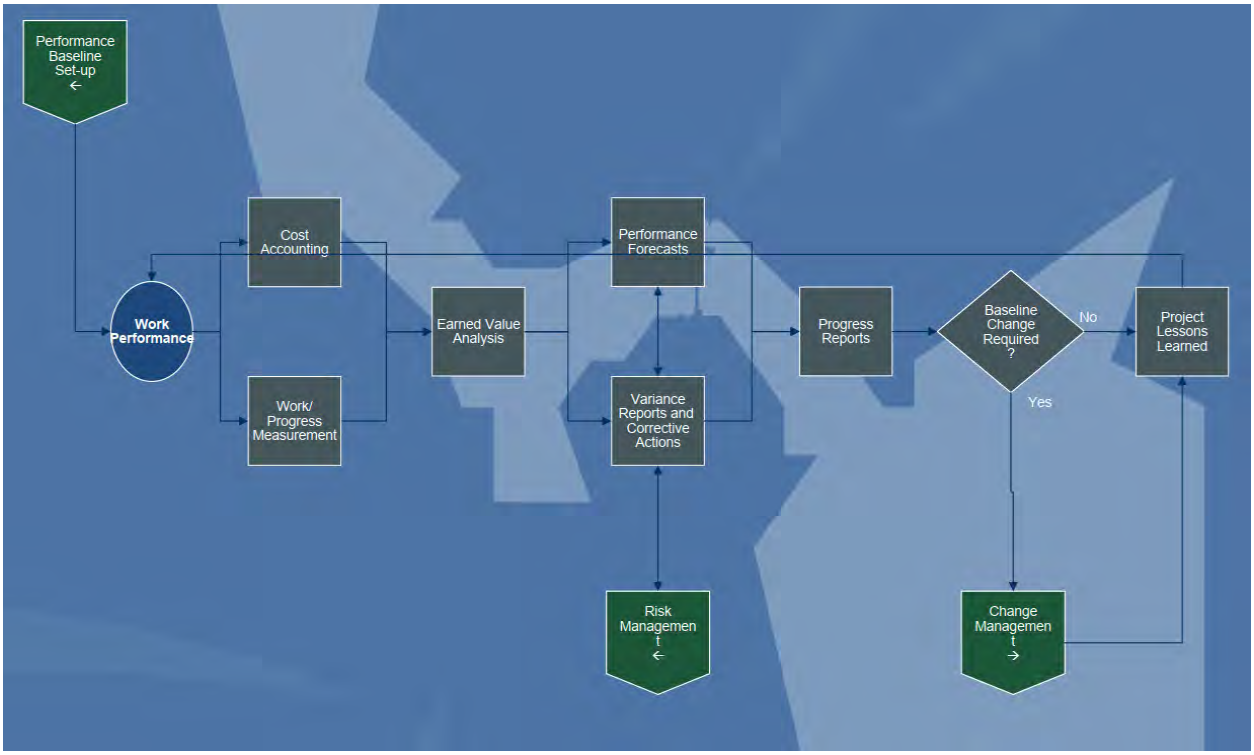


Figure 5-5. Performance Reporting Process

### 5.3.3 Cost Estimating

Cost estimating involves developing an approximation of the monetary resources needed to complete program activities. Costs are estimated for resources that will be charged to the program, including labor, expenses, materials, and equipment.

The PMO provides cost estimates using preliminary engineering designs for each project. As the PAMP progresses and contracts are awarded to a Designer of Record (DOR), the DOR will continue to provide

cost estimates at each design milestone. For estimate development, an appropriate ASTM International class construction cost estimate and basis of estimate will be provided (ASTM 2019). This estimate is developed using the design, the program schedule, the project risk register, and the permitting constraints known at the time. The Design Management Lead and the Program Controls lead will work together to provide this information to the cost estimator. The cost estimate will include cost estimates by work activity and documentation of the basis of the estimate. The design team, Risk Manager, and Program Controls staff will review the cost estimate prior to forwarding it to the Program Controls Lead, Program Manager, and PAMP Engineering Manager for approval.

### 5.3.4 Budget Determination

Budget determination involves the process of aggregating the estimated costs of individual projects to establish the program budget. The program budget consists of the total of the monetary resources necessary to successfully execute the entire program.

A key part of the program budget determination is the Cost and Schedule Risk Analysis (CSRA) process, which is completed after specific construction cost-estimating milestones. The CSRA is the process of determining the risks associated with the project and attempts to quantify the project risks in terms of cost and schedule. The results are expressed as contingency cost and time amounts with reflective confidence levels. The CSRA process is based on Monte Carlo principles and will use the 70% confidence level for CSRA deliverables.

The PAMP will plan to use the CSRA process twice prior to the award of a construction contract. The first CSRA will begin following the completion of the preliminary engineering construction cost estimate for the purposes of finalizing MOA funding requirements. This process will be led by the Program Controls Lead, with final review and approval of the deliverables by the Program Manager.

The second CSRA will begin following the completion of the 95% design construction cost estimate for the purposes of establishing final project contingency amounts. This process also will be led by the Program Controls Lead, with final review and approval of the deliverables by the Program Manager.

The PMO maintains a Budget Basis of Estimate document inclusive of the entire PAMP budget. This document provides specific detailed information on the basis of the PAMP budget.

### 5.3.5 Funds Allocation

The goal of allocating the funds in the budget is to allow for implementation of the approved program baseline. The PAMP cost report reflects the approved budget. The MCS maintains funding need by dates.

## 5.4 Resource Management Plan

Resource management for the PAMP will entail identifying the right team members, subconsultants, contractors, technology, and equipment for each TO or contract. Resource availability considerations, including other local large projects, seasonal construction period limitations, limitations of local resources, and fabrication and shipping lead times will be considered as a part of the PAMP projects delivery strategy.

## 5.5 Human Resources Management Plan

The PMO is committed to staffing the PAMP with the right staff and has identified its key project staff. As TOs are developed, additional staff resources may be needed (for example, if a special technical expertise is needed outside of the current project team). The PMO will develop the means to include the right number of staff, technical expertise, and level of effort to deliver the work on schedule and budget.

For project staff designated as “as needed,” the PMO will coordinate with the PAMP Engineering Manager for approval of the proposed project support and level of effort. Expenses and level of effort will be scoped

for each new TO. The PMO will work with the PAMP Engineering Manager to develop costs that are acceptable to the EC and sufficient to complete the task.

Where possible, staff resources from Alaska will be used to support the PMO. Two qualified candidates will be presented for interviews with the PAMP Engineering Manager when possible. Final approval of changes in key personnel will be in writing by the PAMP Engineering Manager. Cost, qualifications, and operational efficiency will be considered on a case-by-case basis to determine if use of a local resource is effective and desired. Remote workers will be used as specific expertise is identified.

## 5.6 Change Management Plan

The purpose of formalizing change control is to provide a mechanism for changes to the scope, schedule (including milestones), or budgets that affect the program baseline to be adequately documented, appropriately approved, and correctly implemented. A formal program change management process is necessary for the following reasons:

- The need for the change is documented as early as possible.
- The change recognizes WBS, scope, technical, cost, and schedule alignment for affected program areas and projects.
- Interdependencies among affected program areas and projects are adequately detailed.
- The change identifies the source of required funding.
- The change is properly authorized.
- The change is properly disseminated and communicated.
- The change is uniquely identified.
- An adequate record is made, both for project and program management and purposes, as to how and why the change was made and implemented.

The baseline is modified, as required, through the program change management process. Baseline changes may be required as a result of changes in program WBS or program scope, including contractual changes or modifications, a schedule change, discovery of a pre-existing condition, equitable adjustments, obstructive conditions, rejected work, or the identification and need for additional unfunded work. Baseline changes must be proposed, negotiated, and authorized or approved in accordance with the change management process.

### 5.6.1 Program Changes

The PAMP Change Management Board will document the approval of each change. Board members will thoroughly analyze the impact with respect to project and program scope, requirements, schedule, budget, quality, and risk. The Change Management Board includes the PAMP POA Designated Representative, the Program Manager, the Program Strategic Lead, the Program Controls Lead, the Environmental and Permitting Compliance Lead, the Design Management Lead, and the Construction Management Lead.

The Change Management Board must be responsive to changes as they occur, paying attention to aspects of the PAMP that are affected. PMO Leads will work with their team members to make sure that change analysis activities are prioritized and resourced.

### 5.6.2 PAMP Change Request Form

Properly documenting project changes is a critical aspect of change management and the project record. The PAMP will use a standardized format to facilitate that documentation, driving a workflow that documents potential impacts on project and product scope, requirements, schedule, budget, and quality. The requirement to document these impacts forces the project team to analyze what issue is requiring the change, which is a risk management process that protects project scope, requirements, schedule, budget, and quality and is accordingly supportive of protecting the project quality objectives.

The change cannot be executed without the signature of the Change Management Board.

The Change Request Form template is included as an attachment.

### 5.6.3 PAMP Change Log

The PAMP Change Log provides the change title and identification number, the description, project impact, status, and approver, along with tracking dates (Table 5-1). The log serves as a management tool to view the changes as a whole. The PAMP Change Log will be updated as changes are processed and will be included in regular reporting.

Table 5-1. Program Change Log

| Change ID | Category | Description of Change | Submitted by | Submission Date | Status | Budget and Schedule Impact |
|---|---|---|---|---|---|---|
| | | | | | | |
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### 5.6.4 Contract Changes

Changes to the PMO TOs are addressed in Section 5.1, Scope Management Plan.

Changes to Professional Services and Construction Contractors are addressed in the Design Management Manuals and the Construction Management Manual included in Appendix B.

## 5.7 Risk Management Plan

### 5.7.1 Introduction and Purpose

Managing risks to support the mission of the PAMP at the lowest possible cost and according to the defined schedule is a critical aspect of successful project implementation. The purpose of project risk management is to have a process in place to guarantee that risk events are identified and appropriately mitigated and

managed to help achieve PAMP goals and project objectives. Managing overall risk should be a structured and systematic process. Risks and opportunities need to be identified, their potential impact on performance predicted, and strategies developed to avoid, accept, transfer, and mitigate them.

The Risk Management Plan will be implemented for each project within the PAMP. The purpose of this Risk Management Plan is to document and provide standardized processes, program consistency, and uniform approaches in treating risk and opportunities. The risk management process will be integrated into each aspect of program management. Risks identified and quantified during the risk process will be used by the PMO when developing scope of work, by Program Controls for developing cost and schedule contingencies, and by the Project Delivery team in determining the appropriate contracting strategy for each project.

Risk treatment will focus on: (1) threat avoidance and threat reduction to minimize impacts and consequences, and (2) opportunity enhancements through effective risk identification and mitigation practices. To achieve overall success, this approach must be in continuous alignment with the goals of the program.

The PMO's approach to risk management starts at the earliest stages of a specific project by detecting, identifying, and managing risks that have a likelihood of negatively impacting safety, quality, budget, and schedule. This approach establishes a framework that will be implemented across the program. In addition, opportunities will be identified, tracked, and managed using a similar approach to risks.

Effective risk management is guided by a set of principles that represent current "best practices." Regardless of the size or complexity of a project, risk management should reflect these principles:

- **Global Perspective:** View each phase of the program or a project as a means to the overall program or project success. View each project and its success in relationship to other projects.
- **Forward-Looking View:** Look ahead to anticipate risks and their potential impacts. More importantly, anticipate potential risks in time to successfully address them.
- **Open Communications:** Encourage a free flow of formal and informal information to make each individual a part of effective risk management.
- **Integrated Management:** Integrate risk management within the overall project management process.
- **Continuous Process:** Identify and manage risks routinely throughout the lifecycle of the program or project.
- **Shared Project Vision:** Maintain a shared vision of the expected outcome of the program and projects based on common purpose, shared ownership in results, and collective communication.
- **Teamwork:** Pool talents, skills, and knowledge to work cooperatively to identify and manage project risk.

### 5.7.2 Roles and Responsibilities

The risk management process is implemented by the Risk Manager, as overseen by the Program Strategic Lead. The Risk Manager is responsible for the development, review, and maintenance of the risk management process and information systems. The Risk Manager supports PAMP projects with the tools and resources defined by the program. The Program Strategic Lead is responsible for implementation of the risk management process.

The Risk Manager will work with the overall PAMP Team. The Program Controls Lead will use the identified risks and mitigation strategies for development of cost and schedule contingencies. The Design Management Lead and the Construction Management Lead will use the identified risks and mitigation strategies to better manage their projects.

### 5.7.3 Risk Management Approach

Risk is defined as an uncertainty that potentially could have a negative impact on achieving one or more project objectives if it occurs. The upside to risk is opportunity that may present a positive outcome as a result of the mitigation process. The two major components of assessing risk and opportunities are: (1) the probability of occurrence, and (2) the severity if it occurs (cost and schedule).

To manage risks, the program will use an organized, systematic, decision-making process that identifies, assesses, evaluates, and prioritizes risk uncertainties identified as a threat to program or project objectives. The risk management process will be at conceptual stages of projects. The availability of data can be limited at this early stage of planning; therefore, the results can yield considerable unknowns in cost and schedule, which is an indicator in setting budgets and project completion milestone dates.

At the onset of the project, the impact of project risk is at its lowest. Through time, the ability to adjust without substantially impacting scope, schedule, quality, or budget decreases. Simultaneously, the magnitude of adverse impacts to these components increases. Because these adverse impacts can increase over time, ongoing monitoring, and response to eliminate or mitigate risk-related events are the best weapon against scope and budget creep, time extensions, and the erosion of quality.

The risk management framework aids in early detection of uncertainties in costs, delays, business, and technical elements. The framework also provides a proactive approach to managing projects by forecasting future uncertainties before they occur. To be successful, the risk management process requires collaborative participation from everyone on the program. Participants should use a general approach that begins with project planning; requires a thorough development of project concept, scope, and level of effort; and identifies key uncertainties and risks associated with the project. Reporting on risk issues is established as a standing agenda item at team meetings.

The approach to risk management will follow the following five basic steps:

1. Risk identification
2. Risk scoring, ranking, and prioritization
3. Risk mitigation and action plan
4. Risk management and identification of the risk owner
5. Risk reporting, communications, and integration

### 5.7.4 Risk Management Plan

This Risk Management Plan outlines the basic steps and specifics of how the risk management process is implemented for each project within the PAMP. Certain risks will be applicable at the program level. These risks will be repeated for each project risk register to accurately capture risks for each project. The risk management process is dynamic and will be modified as needed to improve the overall program risk management process to achieve the program goals.

The risk process outlined in the following section will be implemented for each project within the PAMP. It will begin during the early planning stages of the project, continue through early concept planning and then design, be incorporated into project construction, and finish after the project has been commissioned.

The initial plan typically is based on the risks and opportunities identified in the initial project risk analysis. As the program and projects progress, the potential impact, probability, and response needs will change. As the work progresses, “new” potential risk and opportunity elements will be identified and managed using the following process:

1. Program team members are charged with the responsibility to continuously review program and project work and conditions and to identify “new” potential risks and opportunities.

2. "New" potential risks and opportunities always should reported to the Risk Manager first and then documented.
3. Program team members will identify and evaluate the probability of occurrence, the potential impact, and the appropriate signals and indicators to track and monitor.
4. Program team members will establish the risk owner and preliminary responses to each risk and they will monitor the status of each risk. The risk owner is determined by who is best equipped to manage it.
5. Program team members will be encouraged to report the potential risks and opportunities they "encounter," regardless of how likely they are to occur. It is better to identify and discuss possible risks than to ignore one that may be important.

#### 5.7.4.1 Step 1: Risk Identification

Risk identification is a systematic review of each project to identify potential risks to schedule, cost, safety and quality. Risk identification will be performed as needed throughout the life of the project, particularly whenever a significant change occurs to an aspect of the program.

The program will practice one or more of the following processes when facilitating risk identification workshops. This concept will help identify risks at an early stage and prevent the risks from worsening and causing uncontrollable budget and schedule conditions.

The general approach for the workshops is as follows:

1. At an early stage, facilitate a brainstorming session involving parties associated with the outcome of the project.
2. Facilitate smaller brainstorming sessions at the program and project level in smaller groups such as environmental, permitting, outreach, real estate, procurement, design, construction management, or project controls. The smaller groups will be integrated. For example, environmental will involve design because of potential delays and rework. This forum also is used during periodic risk reviews or when a project goes through a phase change.

During these workshops, participants will consider the potential consequences to the project if a given risk event occurs.

**Risk Categories.** Risk will be identified from one of four categories described as follows:

- **Technical:** These are risks associated with the design and construction of the program components. Types of technology risk can include equipment selection, construction risks, inadequate design and resulting issues, and system failures (as a result of poor design or construction).
- **Management**: These risks are associated with MOA processes, personnel and staffing, skills shortage, O&M strategies, outdated procedures, internal approvals at the city or program level, or other functions within the city's area of responsibility.
- **Commercial:** Procurement risks are those associated with advertising, selection, and performance of design consultants and contractors, and implementation of individual projects. Finance risks are those that deal with program and project funding and financing and usage rates.
- **External:** External risks are those that may be caused by stakeholders outside of the MOA's area of responsibility or control, such as the public, utility owners, laws or regulations, approvals from external agencies, or permitting processes.

The initial risk identification workshop brainstorms potential scenarios based on uncertainties that could negatively impact the program or its projects. Risks recorded at this stage are called qualitative risks and usually are empirical in nature without conclusive data or a cause to fully support the identified risk.

To fully understand the extent of impact of a potential risk event, a quantitative analysis is required. Further brainstorming and discussion will define qualitative risk through a quantitative risk analysis process, in which each risk is analyzed by a team of experts to better understand the risk.

**Inherent Risk.** During the risk identification process, there are certain inherent risks that are found, regardless of size, type, or complexity. Table 5-2 presents a checklist to use during risk identification workshops to confirm that areas have been thoroughly examined for potential risk.

Table 5-2. Program-Level Inherent Risks

| Site Conditions | Schedule Delays | Preconstruction Planning |
|---|---|---|
| Procurement (contracts) | Procurement (materials) | Weather |
| Price Escalation | Cost Overruns | Shop Drawings |
| Design Changes | Rework | Communications |
| Early Works | Mobilization | Standby Time |
| Resource Management | Safety | Political |
| Permitting | Internal Approvals | Organizational Structure |
| Community Relations | Environmental | Geotechnical |
| Internal Support Functions | Compliance | Labor |

As the PAMP and projects evolve, new risks will be identified and it will be necessary to properly document and develop them through the steps outlined in the risk management workflow. The person that identifies the new risk should immediately report the risk to the Risk Manager or Program Delivery Lead.

#### 5.7.4.2 Step 2: Score, Rank, and Risk Impact

During the risk identification workshop, careful consideration must be placed on determining the value of each single-occurrence risk. At this stage, values are speculated in ranges indicating the impact of the risk if it occurs. These ranges will become more definitive as the project progresses. The objective is to eventually determine single values in cost and schedule for each risk.

The Probability Table presented in Table 5-3 is used to score the likelihood that the risk will occur. Empirical and historical information along with available data can be used to determine the probability of occurrence. This is for a single occurrence, but when multiple occurrences are projected, this must be noted.

Table 5-3. Probability Table

| Description | Probability | Expectations |
|---|---|---|
| No Risk | 0-10% | Not likely to occur. |
| Low | 11-30% | Still not likely to occur but lack of action may increase likelihood. |
| Moderate | 31-50% | Slightly more likely to occur based on similar project experience, given current circumstances. |
| High | 51-70% | Relatively good chance it will occur. |
| Very High | 71-100% | Will probably occur. |

The risk impact is estimated in dollars for cost and days for schedule. A best case, worst case, and most likely value are estimated. An expected risk impact is calculated using the three values and weighting the most likely value.

The Risk Priority Matrix presented on Figure 5-6 is used to rank the risk using probability and severity to determine the level of risk.

| Probability | Severity | | | | |
|---|---|---|---|---|---|
| | Very Low | Low | Medium | High | Very High |
| Very High | | | | | |
| High | | | | | |
| Medium | | | | | |
| Low | | | | | |
| Very Low | | | | | |

Figure 5-6. Risk Priority Matrix (Qualitative)

Risks are prioritized by level of importance as an outcome of the risk scoring and ranking process. At this early stage of the risk identification process, risks are categorized as red, yellow, and green or as high, medium, and low.

#### 5.7.4.3 Step 3: Risk Mitigation and Action Plan Process

Risk mitigation and action plan workshops will be facilitated at two levels:

1. **Project** – Project-level risk mitigation workshops will be facilitated by the consultant and involve the PM, design and construction management teams, contractors, equipment suppliers, fabricators, and others posing a threat to meeting critical schedule and budget milestones on each individual project. These workshops will be performed at the onset of a project and during a project phase change such as final design completion/preconstruction meeting.
2. **Contractor-specific risk workshops** – Contractor risk mitigation workshops may be valuable for some projects and should be facilitated by the consultant and PM directly with each major contractor. The project consultant should be able to project budget concerns as an outcome of the process.

Responses to each risk that are developed in these workshops will be entered and updated in the risk register. Possible response options to these risks include the following:

- **Avoid** – Take action to change conditions so the event cannot occur. Change the project plan to eliminate the risk or to protect the project objectives from its impacts.
- **Transfer** – Take action to place the risk with another party (making them responsible), shifting the consequence of a risk to another party together with the ownership of the risk. This does not eliminate the risk, it just transfers it.
- **Mitigate** – Take action to lessen/reduce the potential impact or probability of occurrence. This action modifies the probability and consequence of an adverse risk event to an acceptable threshold.
- **Accept** – Recognize the risk, but do not take action. Because the risk cannot be controlled or influenced, the risk owner must be prepared to respond if the risk occurs. This action involves deciding to not change the project plan to deal with a risk or being unable to identify another suitable response strategy.

- **Exploit** – Take action to use the risk to the risk owner's benefit, changing the potential impact or probability of occurrence. This action involves changing the consequence of an adverse risk event to a favorable risk event.
- **Share** – Take action to partially place the risk with another party (share the risk between parties), partially shifting the consequence of a risk to multiple parties together with the ownership of the risk. This action does not eliminate the risk, it just shares it.
- **Enhance** – Take action to increase the probability of occurrence or impact of a risk opportunity.

Risk response planning includes a number of activities. In general, it requires review of each risk and opportunity element and determination of the specific actions to be taken, prior to the commencement of work and during the performance of work, should the risk or opportunity be realized or to prevent the risk event from occurring. Alternative approaches to the affected work and alternative uses of resources must be looked at to devise and maintain response plans – workarounds, changed methods or sequences, offsets – to manage risks and to maximize opportunities before planning the use of contingency funds.

The following questions can help determine the status of current risk activities and the potential of emerging risks:

- Are the project assumptions still valid?
- Are policies and guidelines being followed?
- Have new risks been identified?
- Have triggering events occurred?
- Have risk responses been implemented as planned?
- Were the resulting response actions effective? Were they recorded (to capture the learning experience)?
- To what extent has the risk exposure changed since the last review?

#### 5.7.4.4 Step 4: Risk Management

When risks have been identified and evaluated, and action plans have been developed, each risk is monitored throughout the lifecycle of the PAMP and projects. For active projects, project risk registers will be reviewed monthly. For other yet-to-be completed projects, project risk registers will be reviewed at major milestones in the project, including 15% design, contracting strategy development, and contract award. Risks will be evaluated to determine if the risk status has changed or if the probability or impact should be updated.

Attitudes of stakeholders may differ across the various projects within the PAMP. Understanding stakeholder risk attitudes is an important part of effective risk management. It is important for the risk management team to communicate to stakeholders that risks and opportunities need to be managed proactively to enable project success.

#### 5.7.4.5 Step 5: Risk Reporting, Communications, and Integrations

Reporting and communications in managing risk uncertainties will be an integrated process. Reports will be developed at the program level addressing risk impacts on the PAMP projects. Updates regarding status of risk will be provided as part of the PAMP progress reports.

Risks will be managed throughout the life of each project. The PMO and the POA will be responsible initially for mitigating risks. As contracts are awarded for design and construction, risks may be transferred. Quantified risks will be used as a basis for the CSRA to be used in contingency development. This process is described further in the Cost Management Plan, Section 5.3. Risk also will be considered in recommending an appropriate contracting strategy.

### 5.7.5 Risk Register

The risk register identifies the risk and opportunity elements that are deemed important enough to merit tracking. The key functions of the risk analysis spreadsheet are as follows:

1. **Risk Register** – The risk register is the backbone of the risk management process. It is critical to maintain a historical risk database that will be used for reporting and forecasting. Each project's risk will be housed and maintained in a risk register, a sample of which is presented in Tables 5-4 through 5-6.
2. **Uncertainty Loading** – The risk register allows for the ability to track three-point estimates of cost and schedule impact based on individual risks. A three-point estimate is a best-case, most likely, and worst-case scenario.
3. **Mitigation Assignment** – The risk register records a strategy, risk owner, actions to be taken, and the current status for each risk.

**Table 5-4. Project Risk Register**

Scoring Matrix

| | | | Impact | | | | |
|---|---|---|---|---|---|---|---|
| **Risks** | | | **Very Low** | **Low** | **Medium** | **High** | **Very High** |
| **Project Objectives** | **Safety** | | Increase of near misses to employee injury or property damage | One or more first aid cases to employee or minor property damage | One or more recordable injuries or property damage <$100K | One or more lost-time injuries or property damage <$500K | One or more permanent disabilities or property damage >$500K |
| | **Cost** | | <1% of contract value increase | 1-5% of contract value increase | 5-10% of contract value increase | 10-15% of contract value increase | >15% of contract value increase |
| | **Schedule** | | <1% of critical path duration or 1 week increase | 1-5% of critical path duration or 1 month increase | 5-10% of critical path duration or 2 months increase | 10-15% of critical path duration or 3 months increase | >15% critical path duration or >3 months increase |
| | **Environmental** | | No significant consequences, no impacts; low regulatory burden | Limited and correctable environmental damage; average regulatory burden | Correctable environ-mental damage; high regulatory burden; low to average enforcement penalties | Significant environmental damage; high enforcement penalties | Substantial environmental damage; remediation, enforcement, and/or litigation |
| | **Quality (Technology)** | | Nuisances in end product | Minor deficiencies in end product | Major deficiencies in end product | End product does not satisfy all requirements | End product is unusable |
| | **Reputation** | | Internal negative attention | Special interest group negative attention | Local negative attention | National/regional negative attention | Global negative attention |
| **Most Likely Probability** | 70-100% | Very High | **Medium** | **Medium** | **High** | **High** | **High** |
| | 51-70% | High | **Low** | **Medium** | **Medium** | **High** | **High** |
| | 31-50% | Medium | **Low** | **Medium** | **Medium** | **Medium** | **High** |
| | 11-30% | Low | **Low** | **Low** | **Medium** | **Medium** | **Medium** |
| | 0-10% | Very Low | **Low** | **Low** | **Low** | **Low** | **Medium** |

| | | | Impact | | | | |
|---|---|---|---|---|---|---|---|
| **Opportunities** | | | **Very Low** | **Low** | **Medium** | **High** | **Very High** |
| **Project Objectives** | **Safety** | | Decrease of near misses by 10% | Decrease of first aid case metric by 10% | Decrease of recordable injury metric by 10% | Decrease of lost-time injury metric by 10% | Project recognized by peer group/industry |
| | **Cost** | | <1% of contract value decrease | 1-5% of contract value decrease | 5-10% of contract value decrease | 10-15% of contract value decrease | >15% of contract value decrease |
| | **Schedule** | | <1% of critical path duration or 1 week decrease | 1-5% of critical path duration or 1 month decrease | 5-10% of critical path duration or 2 months decrease | 10-15% of critical path duration or 3 months decrease | >15% critical path duration or > 3 months decrease |
| | **Environmental** | | Full compliance with environmental requirements | Minor reduction of adverse environmental impacts | Project conforms to environmental standard; major reduction of environmental impacts | Project registered to environmental standard; enhanced environment; recognized by client | Project certified to environmental standard; recognized by peer group, industry, or media |
| | **Quality (Technology)** | | Minor improvement in end product | Major improvements in end product | Innovative end product | Project recognized by client | Project recognized by peer group/industry |
| | **Reputation** | | Internal positive attention | Special interest group positive attention | Local positive attention | National/regional positive attention | Project recognized by peer group/industry |
| **Most Likely Probability** | 70-100% | Very High | **Medium** | **Medium** | **High** | **High** | **High** |
| | 51-70% | High | **Low** | **Medium** | **Medium** | **High** | **High** |
| | 31-50% | Medium | **Low** | **Medium** | **Medium** | **Medium** | **High** |
| | 11-30% | Low | **Low** | **Low** | **Medium** | **Medium** | **Medium** |
| | 0-10% | Very Low | **Low** | **Low** | **Low** | **Low** | **Medium** |

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**Table 5-5. Project Risk Register: Qualitative**

**Project Risk Register: Qualitative**

**Client:** _____

**Status Date:**

**Project:** _____ **Project No:** _____

**Location:** _____

| | | | | Qualitative Analysis | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Before Treatment | | | After Treatment | | | | | | |
| | | Control Dates | | Most Likely | | | | Most Likely | | | Action | | |
| Risk No. | Risk Description: | Identified | Closed | Impact Cat. | Prob. Cat. | Risk Ranking | Status | Impact Cat. | Prob. Cat. | Risk Ranking | Treatment Type | Treatment Plan | Risk Owner |
| 001 | | | | | | | | | | | | | |
| 002 | | | | | | | | | | | | | |
| 003 | | | | | | | | | | | | | |
| 004 | | | | | | | | | | | | | |
| 005 | | | | | | | | | | | | | |
| 006 | | | | | | | | | | | | | |
| 007 | | | | | | | | | | | | | |
| 008 | | | | | | | | | | | | | |
| 009 | | | | | | | | | | | | | |
| 010 | | | | | | | | | | | | | |
| 011 | | | | | | | | | | | | | |
| 012 | | | | | | | | | | | | | |
| 013 | | | | | | | | | | | | | |
| 014 | | | | | | | | | | | | | |
| 015 | | | | | | | | | | | | | |
| 016 | | | | | | | | | | | | | |
| 017 | | | | | | | | | | | | | |
| 018 | | | | | | | | | | | | | |
| 019 | | | | | | | | | | | | | |
| 020 | | | | | | | | | | | | | |

**Notes:**

**RBS Level 1:** T=Technical, M=Management, C=Commercial, E=External

**Treatment for Threats:** Avoid, Mitigate, Accept, or Transfer

**Treatment for Opportunities:** Exploit, Share, Enhance, or Accept

**For Opportunities:** Cost and Schedule Impacts need to be entered as negative values

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**Table 5-6. Project Risk Register: Quantitative**

**Project Risk Register: Quantitative**

**Client:** _____

**Project:** _____ **Project No:** _____

**Location:** _____

**Status Date:** _____

| | | | | | | Qualitative Analysis | | | | | | | | Required for projects with GR > XX and > YY months duration: Quantitative Analysis | | | | | | | | EAC | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Category | | | Control Dates | | Before Treatment | | | After Treatment | | | | | Estimated Cost and Schedule Impacts after Treatment | | | | | | | | | | Action | | |
| | | | | | | Most Likely | | | | Most Likely | | | | Cost Impact ($ 000's) | | | Schedule Impact (Days) | | | Expected Impacts | | | | | | |
| Risk No. | T/O | RBS Level 1 / 2 | Risk Description: | Identified | Closed | Impact Cat. | Prob. Cat. | Risk Ranking | Status | Impact Cat. | Prob. Cat. | Prob. % | Risk Ranking | Best Case | Most Likely | Worst Case | Best Case | Most Likely | Worst Case | Cost ($ 000's) | Sched. (Days) | Amount of Expected Cost Impact included in EAC ($ 000's) | If 100% of the Expected Cost Impact is not included in the EAC, provide explanation | Treatment Type | Treatment Plan | Risk Owner |
| 001 | | Management | Long Lead Item: Concrete Girder | | | Very Low | | #N/A | | Very Low | | | #N/A | | | | | | | 0 | 0 | | | | | |
| 002 | | | Long Lead Item: Piling | | | | | | | | | | | | | | | | | 0 | 0 | | | | | |
| 003 | | | Crane procurement by Matson - Matson responsible for delivery to dock and off-loading. | | | | | | | | | | | | | | | | | 0 | 0 | | | | | |
| 004 | | | Design will change enough to impact the Section 10/404 after Public Notice (Fall 2022) thus requiring a re-notice. | | | | | | | | | | | | | | | 180 | | 0 | 0 | | | | Permitting will in a buffer on the number of piles. Bundle the changes into a single modification. Weekly meeting with USACE. Weekly meeting with design. | |
| 005 | | | DOR changest the design requiring a second Public Notice. | | | | | | | | | | | | | | | | | 0 | 0 | | | | | |
| 006 | | | T1 | | | | | | | | | | | | | | | | | 0 | 0 | | | | | |
| 007 | | | | | | | | | | | | | | | | | | | | 0 | 0 | | | | | |
| 008 | | | | | | | | | | | | | | | | | | | | 0 | 0 | | | | | |
| 009 | | | | | | | | | | | | | | | | | | | | 0 | 0 | | | | | |
| 010 | | | | | | | | | | | | | | | | | | | | 0 | 0 | | | | | |
| 011 | | | | | | | | | | | | | | | | | | | | 0 | 0 | | | | | |
| 012 | | | | | | | | | | | | | | | | | | | | 0 | 0 | | | | | |
| 013 | | | | | | | | | | | | | | | | | | | | 0 | 0 | | | | | |
| 014 | | | | | | | | | | | | | | | | | | | | 0 | 0 | | | | | |
| 015 | | | | | | | | | | | | | | | | | | | | 0 | 0 | | | | | |
| 016 | | | | | | | | | | | | | | | | | | | | 0 | 0 | | | | | |
| 017 | | | | | | | | | | | | | | | | | | | | 0 | 0 | | | | | |
| 018 | | | | | | | | | | | | | | | | | | | | 0 | 0 | | | | | |
| 019 | | | | | | | | | | | | | | | | | | | | 0 | 0 | | | | | |
| 020 | | | | | | | | | | | | | | | | | | | | 0 | 0 | | | | | |
| | | | | | | | | | | | | | | | | | | | | **0** | **0** | **0** | Active items only | | | |

**Total Expected Impacts of Active Risks for Cost ($ 000's) and Schedule (Calendar Days)**

**Notes:**

**RBS Level 1:** T=Technical, M=Management, C=Commercial, E=External

**Treatment for Threats:** Avoid, Mitigate, Accept, or Transfer

**Treatment for Opportunities:** Exploit, Share, Enhance, or Accept

**For Opportunities:** Cost and Schedule Impacts need to be entered as negative values

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# 5.8 Closeout Management Plan

Proper closeout of PMO TOs, individual construction projects, and other contracts within the PAMP is critical to the program's success. Closeout procedures will need to consider and be in accordance with MOA policies. The Closeout Management Plan starts at the beginning of the project and is managed to completion to provide the best available project documentation for the life of the project.

The PMO will support the POA and the MOA in closeout by assisting with:

- Preparation of the final performance or progress report
- Preparation of the Financial Status Report or Outlay Report and Request for Reimbursement for Construction Projects
- Preparation of the final request for payment
- Participation in the final audit

The PMO will transfer document control records, electronic files, and property purchased with PAMP funds to MOA/POA.

The PMO will maintain records for a 3-year period after the project is closed out.

## 5.8.1 Task Order and Construction Project Closeout

There are separate processes for the closeout of activities conducted in support of the PAMP. These processes will be updated as needed. The process for each activity is outlined in the following sections.

### 5.8.1.1 PMO and Subconsultant Task Order Closeout

The process for the closeout of TOs issued by the MOA/POA to the PMO is defined as follows:

- The PMO and subconsultants are required to submit deliverables as defined in each TO.
- Deliverables will meet PAMP and subconsultant QA/quality control (QC) requirements and follow the procedures as laid out in the PAMP Data Management Plan included as Appendix C.
- Deliverables are subject to contract compliance review.
- The method of submission of technical deliverables will be defined in the TO.
- Technical deliverables will include the consultant name, TO number, and deliverable task number.
- Final deliverables will be submitted to the PMO for final review and delivery to POA.
- Final TO closeout will commence with submission of the final invoice and Notice of Completion.

### 5.8.1.2 Design/Vendor Task Order Closeout

The PMO will be responsible for managing the closeout of design/vendor TOs issued by the MOA/POA. The process is defined as follows:

- The designer/vendor is required to submit deliverables as defined in each TO.
- Deliverables will meet PAMP and designer/vendor QA/QC requirements and follow the procedures as laid out in the PAMP Data Management Plan included as Appendix C.
- Deliverables are subject to contract compliance review.
- The method of submission of technical deliverables will be defined in the TO.
- Technical deliverables will include the consultant name, TO number, and deliverable task number.

- Final deliverables will be submitted to the PMO for final review and delivery to the client.

Final TO closeout will commence with submission of the final invoice and Notice of Completion.

#### 5.8.1.3 Construction Project Closeout

The PMO will be responsible for managing the closeout of construction contractor documents. The process includes:

- The PMO reviews contractor(s) closeout plans 45 days prior to completion.
- The Document Controls Manager receives and completes a final QA audit of project documentation, including construction submittals and regulatory reports. Documents are to be submitted based on MOA contracting requirements.
- The PMO makes sure Substantial Completion processes, including inspections, are in place in the required time frame and confirms that the contractor has met prerequisite actions as required by the contract.
- The PMO prepares documentation for final acceptance by MOA/POA. The PMO will complete final reconciliation of construction costs and payments and prepare Final Notice of Acceptance and Recommendation for Payment.
- The PMO provides contractor's red-lined drawings and documents to Project Engineer for preparation of final Record Drawings. The PMO will perform a QA check of record documents.
- Upon completion, the Document Controls Manager will transmit project documentation to MOA, as defined by MOA contract requirements.

# Section 6. Data Management Plan

The Data Management Plan is included as Appendix C to this PMP.

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# Section 7. Quality Management Plan

## 7.1 Introduction and Purpose

This section presents the Quality Management Plan (QMP) and establishes QA and QC guidelines and processes for work on the PAMP. This Program QMP will allow the PMO to manage the design consultants, construction management consultants, and contractor construction contracts to achieve work products and constructed facilities that comply with the MOA guidelines for quality.

The purpose of quality management is to establish a quality delivery system for PMO work; monitor adherence of PAMP delivery by designers, construction managers (CMs), and contractors to established processes and procedures; and provide a framework for continuous improvement.

Program consultants and contractors are responsible for the quality of the work they perform. The PMO will perform QA to confirm that appropriate QC processes have been established by consultants and contractors, and that QC is completed in compliance with Program quality standards. This Program QMP provides QA policy and guidance for work to be managed by the PMO, including contracts with designers, CMs, and construction contractors.

### 7.1.1 Quality Policy

The PMO's responsibility is to provide QA for contracts so that designs and constructed infrastructure accomplish the following:

- Comply with the quality and performance standards established for the PAMP.
- Comply with federal, state, and local regulatory requirements.
- Require the entire PMO to perform duties in accordance with the established procedures.

PAMP activities will have QA processes and procedures performed and documented by individuals filling specific functional positions to comply with this PAMP QMP. An independent review should be completed for PAMP deliverables. Lessons learned throughout the course of the PAMP are documented and compiled in a database. This will help continually improve quality management procedures and quality throughout the PAMP. Lessons learned are reviewed at the beginning of each project phase.

### 7.1.2 Definitions

**Audit:** Systematic, independent, and documented process to obtain supporting evidence and evaluate it objectively to determine the extent to which applicable criteria have been fulfilled.

**Project:** Unique process consisting of a set of coordinated and controlled activities with start and finish dates, undertaken to achieve an objective conforming to specific requirements, including the constraints of time, cost, and resources.

**Quality:** Degree to which a set of inherent characteristics fulfils requirements.

**QC:** The set of procedures defined in the project QMP to make sure that the final product or service meets or exceeds the requirements of the client.

**QA:** The act of confirming that QC was completed. A set of procedures intended to confirm that the product or service under development (before work is complete, as opposed to afterward) meets the specified requirements.

## 7.2 Quality Management Organization

The PMO maintains overall responsibility for quality of the Program deliverables. Successfully implementing quality management enables the organization to achieve the following objectives:

- Establish and maintain the quality policy and quality objectives of the project QMP.
- Promote the quality policy and quality objectives throughout the project and increase awareness, motivation, and involvement.
- Empower members of the PMO to identify and report areas where opportunities to improve quality exist.
- Make certain that appropriate processes are implemented to enable requirements of the MOA and other agencies to be fulfilled and quality objectives to be achieved.
- Make sure that an effective and efficient quality management system is established, implemented, and maintained to achieve quality objectives.
- Confirm the availability of necessary resources to achieve the desired outcome of quality deliverables.
- Review the quality management system periodically to verify processes and procedures achieve quality policies and objectives.
- Identify appropriate corrective actions to improve quality policies and objectives; decide on actions for improvement of the quality management system.

### 7.2.1 PMO QMP Responsibilities

It is important that, through leadership and actions, the PMO creates an environment that enables the QMP to be implemented effectively. In delivering the overall PAMP and individual projects, PMs and the Quality Manager have responsibility for ensuring that QA/QC activities are performed in accordance with this QMP. QC is the responsibility of the individual consultants under contract to the MOA to provide engineering, construction, and construction management services. The roles and responsibilities of these PMO members along with other key staff are summarized in Table 7-1.

Table 7-1. PMO Quality Management Roles and Responsibilities

| Role | Delivery Responsibilities | QMP Responsibilities |
|---|---|---|
| Designated Port Representative (Client) | Confirm successful PAMP delivery through routine communication with the PMO leadership team. | Conduct periodic reviews to confirm that the QMP is being enforced. |
| PAMP Program Manager | Overall responsibility for successful Program completion. | Communicate the importance of quality delivery to the team, review development of the QMP; establish adequate budget for completing the plan; and serve as the primary interface with the client. |
| Program Strategic Lead | Responsible for implementing the QMP. | Assist with development of the QMP; accountable for implementation of the QMP; assist with quality audits. |
| Quality Manager | Confirm that auditing, feedback, and recommendations for improvement for PMO quality management are performed systematically. | Support QA process and provide as-needed support to the PM who has primary responsibility for ensuring that QC activities are performed for internal deliverables.<br>Review and approve consultant and contractor quality plans. |

Table 7-1. PMO Quality Management Roles and Responsibilities

| Role | Delivery Responsibilities | QMP Responsibilities |
|---|---|---|
| Design Management Lead | Supervise PMO quality management for successful delivery of Program projects. | Responsible for implementing the QMP, endorsing staffing, monitoring and supporting implementation of the plan, and documenting results. Work in partnership with the PMO Quality Manager to resolve quality issues. |
| Design Leads and Resident Engineers | Supervise consultant PM regarding design scope, schedule, and budget. | Monitor design tasks to confirm design consultants are practicing continuous QC in accordance with the QMP. Review design deliverables for completeness and format prior to transmission to the client.<br>Assure adherence to QMP throughout the construction of projects managed. |
| Construction Management Lead | Supervise Resident Engineers and construction consultants regarding construction scope, schedule, change orders, and claims. | Monitor construction key indicators of each project to make sure construction-related QC policies and procedures are being observed; monitor the effectiveness of the project construction management team. |
| Environmental and Permitting Compliance Lead | Manage environmental and permitting activities. | Provide QA of program-related environmental documentation and permitting. |
| POA Staff | Establish safety, operations, and maintenance minimum standards and requirements. | Perform review of designs submitted by consultants to monitor conformance with POA-established operator safety requirements and standards for systems operations. |

### 7.2.2 PMO Quality Assurance Review Process

Reviews by the internal QA/QC team will be scheduled before draft deliverables are submitted to the POA Designated Representative. The Quality Manager will provide deliverable-specific review instructions to the QC reviewers in advance of the review, with more task-specific information regarding the budget, schedule, and logistics for the review. The review process will use either tracked changes in Microsoft Word or Bluebeam software that will be uploaded as a list to the project SharePoint site. The review itself will be recorded on a Technical Verification Form.

Quality review documents are stored on the internal project SharePoint site.

An important part of the quality review process is issue resolution. To be effective, the process should proceed as follows:

- For significant issues, the QC reviewer should discuss the comments directly with the design team member to confirm that the issue is clearly understood.
- If an individual assigned to respond to a review comment does not understand a comment or disagrees with it, then that individual should discuss the issue with the QC reviewer.
- For closure on the adequacy of review responses, the QC reviewer should review the responses and attest that the responses are sufficient.
- If the QC reviewer and responder cannot agree on an issue, then the Project Lead should review and help resolve the issue.

- Issues that cannot be resolved will be referred to the Program Manager and Quality Manager for resolution.

Task-specific QC instructions will be prepared to identify additional standardized processes, tools, standards, and guidelines to be followed for that particular task and provide additional detail beyond the overview in the QMP. Task-specific QC instructions will include the following information:

- The specific scope, schedule, and budget for the QC review.
- Instructions for recording comments.
- Unusual or particular standards or guidelines (client, regulatory, or internal) that the QC reviewers should be aware of (specific standards and code requirements should be identified by the Project Lead).

#### 7.2.2.1 Audits

The Quality Manager also will audit each deliverable. The purpose of these audits is to identify shortcomings and nonconformities and to verify the PMO team's compliance with the QMP in terms of clear documentation of the development and progress of each design document, adherence to industry standards and practice, and the application of thorough and comprehensive QC procedures.

#### 7.2.2.2 External Quality Assurance Review Process

The POA Designated Representative will review major deliverables and provide review comments to the PMO. These review activities provide direct feedback on how well client goals and requirements are being met and help identify client requirements that might not have been known previously.

External reviews by the POA Designated Representative are expected to be handled through a workflow in Aconex software. The POA Designated Representative will provide comments in written format – for example, using an excel tracking sheet for documentation – that includes page, section, and paragraph as applicable.

#### 7.2.2.3 External Review Issue Resolution and Documentation

If disagreements occur between the PMO team and POA reviewers or other external reviewers, direct discussions, including meetings if necessary, will be held to resolve the issues. These discussions will be led by the PM, with support as necessary from the Quality Manager. When agreement is reached, the final resolution of the issue will be documented in Aconex.

### 7.2.3 Quality Assurance for Subconsultant Work

Subconsultants will be required to complete internal review of deliverables before delivery of work products to Jacobs, and they will engage in the continuous QC process described herein. Subconsultants will provide copies of design calculations with documentation of the individuals who performed the calculations and who reviewed them. Copies of design calculations must be submitted to Jacobs for record purposes. These must be submitted when complete and reviewed, not at the end of the project.

### 7.2.4 Additional Jacobs Review Requirements

Because Jacobs is responsible for the quality of the entire Program, Jacobs staff must review the work that subcontractors perform. Review requirements will vary based on the qualifications of the subconsultant and the nature of the work, so the appropriate level of review should be established in the task-specific work plan. Jacobs reviews of subconsultant work will focus on content. Subconsultants are expected to perform their own technical editor reviews of deliverables. The following summarizes the minimum QA activities to be completed by Jacobs for subconsultant work:

- A senior staff member will be selected by Jacobs as a primary QC reviewer for the subcontracted work.

- The Project Lead and Quality Manager will interact with the senior staff member and the subconsultant's PM and will review a draft of the QMP.
- As a result of this activity, the need for involvement of additional QC reviewers will be established, and individuals will be assigned to meet those needs.

### 7.2.5 PMO Quality Control Schedule

An overall MCS has been developed and is updated on a biweekly basis. The schedule will include the following major QA/QC program activities:

- Schedule guidance for QC reviewers to establish continuous QC interface with delivery counterparts
- Dates for each major deliverable requiring quality review
- Major meetings or conference calls related to communication or coordination with QC reviewer participation
- When materials are made available to QC reviewers

### 7.2.6 PMO Quality Control Budget

A discrete budget will be established for QA/QC management activities, including the following:

- Coaching design team members on the QA/QC process
- Developing and maintaining a comment tracking system and other tools required for the internal QA/QC process
- Facilitating deliverable reviews, including preparing reports and resolving issues
- Facilitating QA/QC audits, including preparing reports and ensuring deficiencies are corrected

With respect to deliverable QA reviews by QC reviewers, the budget for these activities will be included in each TO. The budget will include time for continuous QC activities, review of specific work products, and follow-up and resolution of issues.

Requirements for the design consultant and contractor QMPs are described in more detail in the following section.

### 7.2.7 Consultant and Contractor Quality Management Plans

The best way to control program risks and potential liability is to deliver high-quality projects. Successful completion of consultant and contractor work is central to overall project quality. It is essential that consultants and contractors on the PAMP have the necessary resources to successfully perform their work.

Minimum requirements and standards established for consultants and contractors for the Program include the following:

- Employ appropriate engineering staff.
- Confirm that construction management professionals are properly certified and trained for their roles.
- Verify that staff is experienced in the type of work to be performed.
- Use appropriate design and construction management tools and software required for the project.
- Perform work in accordance with specified standards, including those adopted by the PAMP and state and federal agencies, for example, standards for surveying.
- Provide adequate staff to complete the work within the schedule.

- Develop QC procedures for which the consultant or contractor is ultimately responsible.

Each consultant and contractor will be required to develop a project-specific QMP that addresses the processes, procedures, and personnel engaged in QC. The project QMPs will identify the roles and responsibilities of the key quality staff, as noted in the following section.

#### 7.2.7.1 Consultant Roles and Responsibilities

Individuals working on the project will contribute to the overall quality of the final deliverables. As such, each individual is responsible for the quality of work products, whether for internal or external use. Individuals should not rely on others to catch mistakes or omissions. Before a work product is assigned to someone else for review or use as part of the design or construction process, the originator should make sure it is complete and the quality is acceptable. Overall project quality requirements will be met if team members take responsibility for the quality of their portion of the work.

Each project design consultant will be required to prepare and establish a working project QMP that establishes roles, responsibilities, and procedures for QC. The PMO will provide specific requirements for the designer QMPs to be included in the Request for Proposals for design services.

#### 7.2.7.2 Design Consultant Project Manager

The consultant PM will establish and monitor effective implementation of the quality requirements for the project. The Design Management Lead also will track compliance with the PAMP requirements to a level appropriate for the risk and significance of the activity to the project. Following preparation of the project QMP by the design consultant, the Design Management Lead will review and approve the document.

At each project milestone, deliverable, or gate, the consultant PM will be responsible for verifying reviewer comments have been input and addressed in the DrChecks software application. The Design Management Lead will review finalized DrChecks comments prior to approval to advance to the next phase of the contract.

#### 7.2.7.3 Design Consultant Project Quality Manager

Each project consultant will identify a Project Quality Manager. For smaller projects, the consultant PM also may serve as the Quality Manager. The Quality Manager has the following minimum responsibilities:

- Prepare the project QMP.
- Assist the PM by monitoring the activities of the QC reviewers and senior technology consultants to verify that both continuous QC review and scheduled reviews occur in accordance with the project QMP.
- Assist in the resolution of quality-related issues and inform the PM of unresolved issues. The Project Quality Manager will verify that QC review comments are adjudicated.
- Complete the QMP Process Certification form.
- Approve updates to the project QMP as necessary. Confirm comments from the MOA are addressed and responses are documented.

#### 7.2.7.4 Design Consultant Project QC Reviewers

Each design consultant will identify project QC reviewers for applicable design disciplines. The QC reviewers have the following minimum responsibilities:

- Be familiar with the project scope and key staff by reviewing the project instructions and execution plan.

- Provide continual input to the project by assisting the Discipline Leads with developing concepts, evaluating/selecting alternatives, and making decisions, especially early in the project.
- Be proactive – meet and talk to the consultant PM, Quality Control Manager, and Discipline Leads on a continual basis.
- Perform thorough, timely reviews in accordance with the project schedule. Present review comments clearly.
- Verify with the Discipline Lead that required calculations and analysis have been prepared and checked.
- Meet with the Discipline Lead to discuss major review comments. Make sure that the Discipline Lead understands the comments and understands how to address them. Verify that major review comments are adjudicated and the resolution is documented and implemented.
- Lead and participate in the completion and adjudication of DrChecks comments.

#### 7.2.7.5 Design Consultant Project Senior Technology Consultants

Senior technology consultants will be required and identified by each design consultant for each discipline to assist in developing and approving the project approach. Senior technology consultants have the following minimum responsibilities:

- Review and approve the project approach.
- Review and approve proposed changes to the project approach, for example, program changes.
- Act as a resource to the Discipline Leads related to the project approach and its proper implementation during project execution.
- In conjunction with the QC reviewer, make sure that adequate reviews are performed.

#### 7.2.7.6 Design Consultant Discipline Leads

Design consultant Discipline Leads are responsible for the design of a specific portion of the project. They have the primary responsibility for producing high-quality deliverables on schedule and within budget. The Discipline Leads have these minimum responsibilities:

- Prepare documentation, including calculations and analysis made, that clearly defines the basis for the recommended design.
- Confirm that calculations are prepared and checked.
- Involve the QC reviewer (and senior technology consultant if applicable) in the analytical process on a continual basis. Solicit QC reviewer input when developing concepts, evaluating and selecting alternatives, and making decisions, especially early in the project.
- Obtain senior technology consultant input and approval for a proposed change to the project approach.
- Be proactive – meet or talk with the QC reviewer on a continual basis, with a goal of at least once per week.
- After each formal QC review, meet with the QC reviewer to review major comments and define how they will be addressed.
- Coordinate with the other Discipline Leads – communicate directly to make sure that each lead has the information needed to perform the work.
- Assist the consultant PM in addressing client comments and documenting responses in DrChecks.

## 7.3 Consultant Quality Management Process

Quality is an integral part of the deliverable review process. Quality of deliverables will be planned, executed, and monitored through the controlled document review cycle. The following are essential components of the deliverables review process:

- Deliverables list
- Distribution matrix (defining personnel responsible for the documents and support/review personnel)
- Document classification
- Document tracking sheet (set review date and track outstanding submittals)
- Periodic review of outstanding documents
- Project schedule with time built in to review each submittal
- Identification of changes and the current revision status of documents

At each stage of the design, the discipline leads present the QC reviewer with drawing, specification, and calculation packages for review. The senior reviewers carefully review the work packages and make notes and comments regarding the work. Comments should be documented in DrChecks. Following the package review, the reviewer will meet with the lead designer to discuss the comments and resolve issues noted by the reviewer. If there is disagreement between the lead designer and the senior reviewer on an issue, the Quality Manager acts to resolve the dispute. The Design Management Lead and PM also may be required to help resolve the issue.

The PMO review comment and backcheck process will be executed through the use of the DrChecks system. The PMO will distribute the plans and specifications to the appropriate PMO reviewers and provide review comments within 1 week of receiving the submittal using DrChecks software. The consultant will prepare a written response to compiled review comments and submit these responses through the DrChecks system. (ProjNet 1998) A review conference meeting will be conducted shortly after furnishing the comments to review the initial responses. Review comment adjudication must be approved by the PMO and incorporated in the next step of the design.

### 7.3.1 QMP Certifications

No deliverables will be considered complete until the Consultant QMP Process Certification has been completed and the PMO DrChecks comment resolution process has been accepted.

#### 7.3.1.1 Consultant QMP Process Certification

A signed Consultant QMP Process Certification must accompany each deliverable to the PMO. This form documents that the deliverable has successfully passed the quality management process established by the design consultant prior to submission to the PMO.

At minimum, the QMP Process Certification must include the name of the project, phase, date, and the names and signatures of the QC reviewers and senior technical consultants.

#### 7.3.1.2 Project Management Office DrChecks Comments

The PMO also will review and document its comments on the deliverables, using DrChecks for this process. PMO DrChecks review comments must be adjudicated for deliverables for each phase of the project.

### 7.3.2 Establishing Milestones for Design QA/QC

QA/QC is an ongoing process that should be occurring constantly by the design consultant's Discipline Lead and QC reviewer staff. At significant milestones as identified in the project scope of work and Consultant's Contract, the QA/QC process must be formalized. Minimum milestones for QA/QC are at the

end of each phase of the project. This will be documented by the PMO PM using the certifications, checklists, or other approved methods.

### 7.3.3 Acceptance of Project Design QA/QC

Design consultant QC will not be considered acceptable by the PMO until consultant and PMO DrChecks comments have been deemed complete by the Design Lead. Applicable checklists and deliverables must be considered complete by the Design Lead.

If there are a significant number of review comments by the PMO, the project QC process will be evaluated by the Program Manager and Quality Manager. If the Program Manager is not satisfied with the level of QC occurring on a project, work may be halted and an audit conducted of the consultant's QMP. The work stoppage may continue until the Program Manager and Quality Manager are satisfied that project QC deficiencies have been corrected.

### 7.3.4 Audit Process

To assure that the QMP is being successfully implemented, and to provide a systematic means of identifying needs and opportunities for improvements to the QMP, internal QA audit activities will be performed monthly, or on an as-needed basis.

The Quality Manager has the responsibility to verify that auditing, feedback, and recommendations for improvement are systematically performed. The Quality Manager will support and report to the Program Manager, who has primary responsibility for ensuring that QC activities are performed in accordance with the consultant QMP. The Quality Manager will meet periodically with the Program Manager and other project team members to discuss and assess the overall status of the program and specifically the status of QMP implementation. As a routine part of each quality audit, the Quality Manager will spot check the degree to which QMP processes and procedures have been completed and documented. The PMO Quality Manager also will spot check the completeness and quality of the execution of individual quality review activities.

Following initial audit activities, the Quality Manager will meet with the Program Manager and discuss the results and preliminary conclusions of the audit activity. This review will include consideration of the degree to which the PMO is accomplishing quality management relative to the goals established for the PAMP. The Program Manager and Quality Manager will agree on additional audit activity to be performed. This may include discussions with other PMO staff, and may involve focused audits by technical specialists if needed to determine the sufficiency of QMP results in certain technical areas.

Projects receiving federal funding need to conform to the audit requirements of 2 Code of Federal Regulations Part 200, Subpart F, as detailed in each Grant Agreement. The Quality Manager will support the MOA in compliance with this requirement. For projects receiving federal funding, annual audits as well as contract closeout audits are recommended. These audits should focus on the financial aspects of the contract, including labor hours, invoices, and reimbursement requests.

The results of each audit will be reported in writing and discussed with the Program Manager. Recommendations for action to be taken to correct deficiencies or improve the QMP and the achievement of its objectives will be included. The Program Manager is responsible for sharing the report with the project team, and for implementing appropriate recommendations. The report will be reviewed with the POA Project Representative during the next periodic audit, and an assessment made of the extent to which recommendations were completed.

Project audits may include the following:

- Audit plan or checklist
- Pre-audit and post-audit meetings

- Defined criteria used as measurement of compliance
- Audit observations with corrective or preventative actions
- Suggestions for improvements

Experienced and qualified personnel trained in the auditing process will perform project audits. Auditors will be selected for their impartiality and will not be allowed to audit their own work.

The Quality Manager and the Design Lead establish the frequency of the QA audit at the beginning of each project. In addition to these periodic audits, surveillance audits will be performed when deviations are noted or suspected. The purpose of surveillance audits is to determine compliance with stated objectives, defined procedures, and project requirements. Surveillance audits also determine adequacy of procedures, competency and knowledge of personnel, and compliance with appropriate defined procedures.

## 7.4 Program Standards

Projects quality will maintain consistency with established PAMP standards. These program standards include the following:

- **PMO Standards and Practices for Design.** Projects conducted within the program will follow established PMO standards for design; the most recent version of these standards will be provided to contractors working on the PAMP:
  - PAMP *Computer Aided Design and Drafting Standards Manual*
  - PAMP *Survey Manual*
  - PAMP *Seismic Design Manual*
  - PAMP *Ice Forces Manual*
- **Project Cost Estimates.** Project cost estimates will be performed in accordance with PAMP established cost-estimating guidelines. Each cost estimate will be subject to review by the PMO along with other deliverables required for each project.
- **PMO Templates.** Deliverables should follow the established templates for the PAMP. These program files are maintained in Aconex and will be provided to contractors working on the PAMP.

## 7.5 Project Closeout

### 7.5.1 Continuous Improvement and Lessons Learned

Continuous improvement is an essential management and quality strategy in addressing client satisfaction, service and product delivery, compliance, and cost savings. The PMO plans and manages the processes necessary to guarantee the QMP's continuous improvement. The PMO facilitates the QMP continuous improvement by using the quality policy, objectives, audit results, analysis of data, and client/stakeholder quality management review.

The Quality Manager examines data obtained from audits, lessons learned, and continuous improvement actions periodically to detect trends. When several deficiencies of the same type are observed within a given time interval, or the number of deficiencies per time interval increases significantly, an adverse trend is reported. When an adverse trend is detected, the Quality Manager analyzes it by examining the observed deficiencies and influencing factors, and notifies the responsible Lead, so that appropriate continuous improvement feedback can be initiated. Continuous improvement may include changes or additions in processes, procedures, policies, or work practices. Following the rollout of the continuous improvement feedback initiative, the Leads will follow up with team members to make sure processes are understood and consistently implemented.

# Section 8. Procurement Management Plan

## 8.1 Introduction and Purpose

This Program Procurement Plan outlines the strategy for identifying, sourcing, procuring, and managing external resources needed to complete the PAMP projects. This strategy seeks to achieve the value that the PAMP will deliver by providing the best value solution to program requirements through sustainable allocation of risk between the MOA and the supply chain. The procurement strategy explores schedule, risk, funding status, and project phasing, and implements the approaches that provide best value.

The strategy applies a collaborative, integrated approach and accounts for each phase of the program, from planning, design, and delivery, through operations with key procurement and supply chain opportunities being conceived, developed, and implemented through program completion. Initiatives will incorporate MOA needs, legislative changes, and stakeholder requirements. The procurement and supply chain challenges will evolve during delivery of the program and the procurement approach will be revised as each project is developed. Lessons learned will be applied to the approach throughout the program lifecycle.

## 8.2 Roles and Responsibilities

The procurement process is implemented by the Procurement Lead overseen by the Program Controls Lead. The Procurement Lead is responsible for the development, review, and finalization of the procurement deliverables. The Procurement Lead supports PAMP projects with the tools and resources defined by the program. The Program Controls Lead is responsible for implementation of the procurement management process.

The Procurement Lead will work with the overall PAMP Team and closely with the Design Management Lead, Environmental Permitting and Compliance Lead, and Construction Management Lead as applicable in development of procurement deliverables for each project.

## 8.3 Program Procurement Scope

The PMO will support the MOA Purchasing Department with PAMP contract actions. The PMO will evaluate and recommend a delivery method for each project within the PAMP. The PMO will assist in the selection of and contracting with the entities. The PMO also will develop the procurement documents to secure these services. The services of consultants and contractors may be procured as separate contracts by MOA for a specific task or they may be obtained through one of several term agreements currently held by the MOA.

The PMO also will work with the MOA to develop, update, and report on key procurement milestones in the PAMP MCS.

## 8.4 Procurement Processes

The PMO supports the MOA Purchasing Department for the procurement of services on the PAMP. The purchasing process is governed by the Anchorage Code of Ordinances – Title 7 – Purchasing Contracts and Professional Services.

The PMO will support the Purchasing Department with the following processes, at a minimum:

- Providing Chief Fiscal Officer certification of available funds for the MOA's performance under the contract.

- Providing Anchorage Assembly approval of contract values of more than $500,000 as original contract value or more than $30,000 as an amendment.
- Providing Anchorage Assembly notification of contract values of more than $50,000 and less than $500,000.
- Attending Community Workforce Agreement Board review meetings for construction projects over $3.5 million in contract value that evaluate if a Community Workforce Agreement will be used to advance important interests held by the MOA.
- Developing a Source Selection Plan outlining the method and approach to the source selection.
- Modifying MOA contracts for Professional Services and Construction Contracts. Developing specialty contracts for collaborative delivery (for example, D-B, PD-B, and CMAR) and coordinating contract development with MOA Legal.
- Verifying insurance requirements with the MOA Risk Department.

For contracts requiring Assembly approval, the PMO will prepare a Recommendation of Award for submittal to the Purchasing Department. The Recommendation of Award must include the negotiated contract amount, the project's account distribution number, and the funding source information. Financial information will be provided by the Chief Fiscal Officer. The Purchasing Department will prepare an Assembly Memorandum and have the Recommendation of Award placed on a future Assembly meeting agenda. The PMO also informs the Enterprise and Utility Oversight Committee prior to the Anchorage Assembly meeting. The MOA will issue Notice to Proceed after Anchorage Assembly approval.

### 8.4.1 Advertising

To attract the best-qualified bidders for both design and construction, the PMO will support the client in advertising upcoming projects through advanced notice on the MOA procurement website, professional organizations, and contractor publications. Example organizations include the American Council of Engineering Companies and *Engineering News Record*.

### 8.4.2 Contracting for Professional Services

Professional Services contracts will be used for work such as design, environmental expertise, cost estimating, and constructability expertise.

#### 8.4.2.1 Contracts for Professional Services

Procurement of professional services is a two-step process: (1) solicitation, and (2) contract negotiation/ award. Critical input to the contract development includes project goals and objectives, a summary of the proposed scope of work, a location map, the project schedule, and the total project development budget.

#### 8.4.2.2 Term Contracts for Professional Services

Term Contracts are for professional services tasks under $50,000, including survey, geotechnical, and environmental support actions. The Term Contracts offer a distinct benefit of speed and cost optimizations, where in the parent contracts are already in place with predefined and pre-priced scope elements that can be stitched together toward the development of a specific, definable, and severable task.

#### 8.4.2.3 Short Form Service Contracts

For those circumstances wherein a Sole Source seller of services is justified, a Short Form Service Contract can provide an efficient mechanism to support the requirement. The PMO will develop a fully supported and defensible Sole Source Justification that will be included in the documentation for authorization of the action.

Execution of this type of contract action will require close coordination with the MOA Purchasing Department, as this is not a standard method of contracting for services.

### 8.4.3 Traditional Design-Bid-Build Construction Contracts

The PMO will be responsible for assembling the MOA construction contracts with the following components.

#### 8.4.3.1 Contract Solicitation

Contract solicitations can be configured in the form of an Invitation to Bid (ITB). The MOA Purchasing Department construction contract consists of Division 00 Specifications (Bidding Requirements and Conditions of the Contract), Division 01 Specifications (General Requirements), and Division 02 and higher Specifications (Technical Specifications). These include, in order, the ITB, the General Conditions, the Supplementary Conditions, the Construction Documents, Contract Forms, Contract Submittal List, Bid/ Proposal Documents, and the Proposal Schedule. Other attachments may be required, including permits and permitting-related information, environmental investigations/information, and geotechnical investigations/information.

##### 8.4.3.2 ITB Sections

The ITB generally includes the following sections to complete the contract documents:

- 00 01 00 Cover Page
- 00 01 01 Project Directory
- 00 01 10 Table of Contents
- 00 11 16 Invitation to Bid
- 00 21 13 Bidder Checklist – Instructions to Bidder
- 00 41 13 Bid Proposal
- 00 43 13 Bid Bond
- 00 52 13 Contract
- 00 54 01 Escrow Bid Documentation
- 00 61 13 Contract Performance and Payment Bond
- 00 62 16 Certificate of Insurance
- 0062 39 Disadvantaged Business Enterprise Program Forms (if applicable)
- 00 65 13 Certificate of Compliance
- 00 72 13 General Conditions
- 00 73 00 Supplementary Conditions
- 00 73 36 Equal Opportunity Special Provisions
- 00 73 39 Disadvantaged Business Enterprise Program Specifications for Municipal Contracts (if applicable)
- 00 73 46 State of Alaska Labors and Mechanics Minimum Rates and Davis-Bacon Wage Rates
- 01 19 40 Special Items
- 01 22 00 Measurement and Payment Procedures

- 01 32 00 Schedule and Construction Progress Documentation
- 01 33 00 Submittal Procedures
- 01 35 43 Environmental Procedures
- 01 41 00 Regulatory Requirements
- 01 45 00 Construction Quality Control
- Technical Specifications (Division 02 and higher specifications)
- Construction Drawings
- Owner-obtained Permits
- Submittal List
- Other forms and information as needed, such as bid templates

#### 8.4.3.3 General Conditions

Section 00 72 13, General Conditions, is developed by the MOA and is included in the Municipality of Anchorage Standard Specifications (MASS) to support this requirement. These specifications are presented as MASS and Municipality of Anchorage Standard Specifications Building (MASSB). Generally, MASSB is used for PAMP projects.

- MASS. This document contains the MOA's standard contract General Provisions in Division 10. It also includes Divisions 20 through 80, which are Technical Standards, clauses, and details tailored to utility and road improvement used for horizontal construction projects in municipal rights-of-way. A conflict with MASS should be covered in the individual project construction documents under the Supplementary Conditions or Division 02 and higher Technical Specifications. MASS may be applicable to some of the horizontal work associated with the PAMP; however, because of the nature of the work and the nonapplicability of the majority of the Technical Standards, along with the limitations of the General Provisions, it is not likely to be the best tool for the marine structures. Accordingly, the applicability of MASSB will be determined on a project-by-project basis.
- MASSB. This document generally contains the same MOA's standard contract General Provisions; however, the formatting of the document follows Construction Specification Institute formatting (Section 4.3.2). As such, this document is considered more conducive for marine work and most PAMP projects.

#### 8.4.3.4 Supplementary Conditions

The Supplementary Conditions provide the opportunity for edits to the General Conditions of MASS or MASSB. Generally, there are templates for the Supplementary Conditions document that were used in previous projects and can provide a starting point for addressing known issues with the General Conditions. It is recommended that the POA Designated Representative be consulted on an appropriate template.

#### 8.4.3.5 Construction Documents

The Construction Documents attachment includes the Technical Specifications and the associated plans and drawings. This is the portion of the contract document that communicates the scope of the work in the level of detail required to assure that the client requirements and quality attributes are known by the contractor. It is generally assembled by the Designer of Record with the exception of Division 01 specifications, which are assembled by the POA Designated Representative with support by the Designer of Record.

#### 8.4.3.6 Contract Forms

Contract Forms contain sample forms that the contractor and contract administrator will use during construction. This includes the Submittal Transmittal Form, Request for Information Form, Substitution Request Form, Deviation Request Form, Certificate of Compliance Form, Partial Payment Form, Final Payment Form, and Contract Change Form. The MOA does not have complete standardization of these forms and some are different depending on the department requesting the work.

#### 8.4.3.7 Contract Submittal List

The Contract Submittal List attachment will be developed by the technical team and should include a list of technical submittals required in the construction documents.

#### 8.4.3.8 Bid/Proposal Documents

Bid/Proposal Documents are incorporated into the contract document by the MOA Purchasing Department and include a sample contract, performance and payment bond form, a bid bond form, an insurance declaration form, and a bidder's/ proposer's checklist.

#### 8.4.3.9 Proposal Schedule

The Proposal Schedule form will be used to capture the bidders'/proposers' commercial proposal. Moreover, consideration must be given to various issues, including mobilization and optional work. The document must be well synchronized with the rest of the contract documents.

### 8.4.4 MOA Collaborative Contracts

Collaborative Delivery Contracts (also known as Alternative Delivery) may be used for some project components based on the procurement strategy for that project. The PMO has developed collaborative delivery contracts for D-B, PD-B, and CMAR, which will be used as foundations for future collaborative delivery contracts. The PMO will coordinate with MOA Procurement and Legal to develop these contracts.

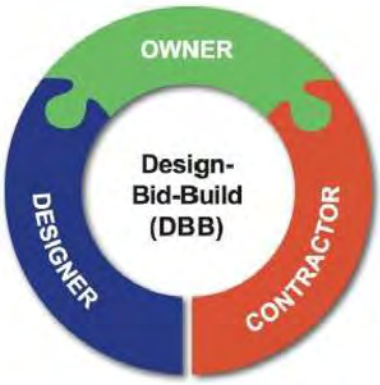
## 8.5 Contract Strategy

The procurement strategy is linked to the contracting strategy. The contracting strategy will be considered during the early planning stages of each project and should be reviewed as conditions change, including project funding and market conditions. The four basic contracting strategies will be evaluated for each PAMP project: Design-Bid-Build (D-B-B), D-B, CMAR, and PD-B. The PMO will provide a recommendation and basis of the recommendation to the MOA, which will make the final decision.

The following will be considered to recommend the most appropriate delivery method:

- **Master Control Schedule**. Evaluate PAMP schedule milestones and objectives to assure overall success of the PAMP.
- **Risk Associated with the Project**. Evaluate contracting strategies to allocate risks to the party best able to manage them, ultimately resulting in the lowest overall project price.
- **Project Funding Status**. Consider that D-B, CMAR, and PD-B perform best with full project funding when the project is first advertised. D-B-B has the greatest flexibility for incremental project funding.
- **Project Phasing**. Consider how the project construction is best broken out into project phases and how to best contract each phase.

### 8.5.1 Design-Bid-Build




D-B-B is the traditional delivery system for the public sector, in which an owner will use in-house staff (or, alternatively, consultants) to prepare fully completed plans and specifications that then are incorporated into a bid package. The design contract is awarded based on qualifications. Contractors competitively bid the project based on these completed plans and specifications. The owner evaluates the bids received, awards the contract to the lowest responsible and responsive bidder, uses prescriptive specifications for construction, and retains significant responsibility for quality, cost, and time performance.

| Design-Bid-Build | |
|---|---|
| **Advantages** | **Disadvantages** |
| • Well established and easily understood<br>• Owner involved throughout design<br>• Designer/Engineer selected on qualifications<br>• Construction risks can be transferred to contractor<br>• Owner has high level of influence during construction<br>• Extensive litigation has resulted in well-established legal precedents<br>• Competitive tender process<br>• Insurance and bonding are well defined | • Owner holds contracts<br>• Owner is in the middle of disputes<br>• Contractor selection based on price, although opportunity for prequalification<br>• Longer duration since design work must be completed prior to solicitation of the construction bids<br>• Low bid and other factors can lead to adversarial environment between different parties<br>• Owner subject to multiple change orders<br>• Schedule risks based on sequential procurement process and lack of financial incentives |

### 8.5.2 Design-Build


D-B is a single contract between the project owner and a D-B contractor covering both the design and construction of a project. The design-builder performs design, construction engineering, and construction according to design parameters, performance criteria, and other requirements established by the owner. The D-B process focuses on streamlining and enhancing project delivery by contracting with one entity to provide design, construction, and other pre- or post-construction services.

| Design/Build | |
|---|---|
| **Advantages** | **Disadvantages** |
| • Design/builder single point of responsibility during design and construction<br>• Opportunity for designer/contractor collaboration<br>• Performance-based prequalification<br>• Competitive procurement through Request for Proposal process maximizes potential for cost savings<br>• Promotes innovation<br>• Faster procurement and project delivery<br>• Cost and schedule known during design/builder selection<br>• Transfer of risk to design/builder | • High procurement costs for owner and respondents<br>• Complex evaluation process<br>• Limited ability for owner to adjust design after procurement without owner-initiated change orders<br>• No price certainty prior to bid<br>• Potential excessive risk and contingency cost<br>• Limited owner and design/builder collaboration |


### 8.5.3 Construction Manager at Risk

With CMAR, the owner engages a CM to act as the owner's consultant during the preconstruction phase and as the GC during construction (if agreement on pricing can be reached).

During the design phase, the CM acts in an advisory role, providing constructability reviews, value engineering suggestions, construction estimates, and other construction-related recommendations. At a mutually agreed upon point during the design process, the CM and the owner will negotiate a Guaranteed Maximum Price (GMP). The GMP typically is based on a partially completed design and includes the CM's estimated cost for the remaining design features, General Conditions, a CM fee, and construction contingency.

After the GMP is established, the CM can begin construction, allowing for the overlap of the design and construction phases to accelerate the schedule. Early works packages can be contracted for long lead items. When construction starts, the CM assumes the role of a GC for the duration of the construction phase. The CM holds the construction contracts and the risk for construction costs exceeding the GMP.

If a GMP is not established, the owner can off-ramp the CMAR process and package the bid-ready plans and specifications procured through a competitive design-bid-build process.

| Construction Manager at Risk | |
|---|---|
| **Advantages** | **Disadvantages** |
| • Early involvement in design and estimating is beneficial in the constructability review and in design and construction innovations<br>• Allows the CM to work with the designer to reduce the construction cost<br>• Owner, engineer, and CM can collaborate on design and project planning<br>• CM and owner have the opportunity to jointly identify, allocate, and mitigate project risk<br>• GMP is determined early in the project<br>• CM is responsible for delivery of the project on time and within budget<br>• Enables fast-track delivery because design and construction can overlap<br>• Good for large, complex, schedule-driven projects<br>• Owner and CM/GC can manage contingencies jointly<br>• Owner gets the most qualified designer and most qualified contractor | • Perception that there is a lack of competition during project cost development<br>• Lack of direct contractual relationship between the contractor and designer, placing the owner between those entities for the resolution of project issues<br>• Owner must be an active participant in management of the project, which usually requires technical resources and skill sets that the owner does not have in-house<br>• Owner still has ultimate risk of design; this is mitigated to some extent by input from contractor<br>• Schedule implications if a GMP cannot be agreed to |

## 8.5.4 Progressive Design-Build


PD-B is a single contract between the project owner and a D/B contractor covering both the design and construction of a project. Design detail and the construction estimate are developed progressively with the owner by this single entity or purpose-built team. The PD-B process focuses on gaining the benefits of a Design-Build contract while incorporating more owner input during design development.

| Progressive Design-Build | |
|---|---|
| **Advantages** | **Disadvantages** |
| • Owner has a single point of management contact with the PD-B team<br>• Early involvement in design and estimating is beneficial in the constructability review and in design and construction innovations<br>• Allows the contractor to work with the designer to reduce the construction cost<br>• Owner, designer, and CM can collaborate on design and project planning<br>• CM and owner have the opportunity to jointly identify, allocate, and mitigate project risk<br>• GMP is determined early in the project<br>• CM is responsible for design<br>• CM is responsible for delivery of the project on time and within budget<br>• Enables fast-track delivery because design and construction can overlap<br>• Good for large, complex, schedule-driven projects<br>• Owner and PD-B can manage contingencies jointly | • Perception that there is a lack of competition during project cost development<br>• Designer does not work directly for the owner<br>• Assignment of combined design and construction risk to the CM may result in a higher initial cost to compensate for that risk transfer<br>• CM will likely price additional cost for risk because of design responsibility<br>• Owner must be an active participant in management of the project, which usually requires technical resources and skill sets that the owner does not have in-house<br>• Does not guarantee that the most qualified designer will be teamed with the most qualified contractor |

## 8.6 Contractor Management

The PMO will use the Design Management Manuals and the Construction Management Manual as reference documents detailing design and construction management standards, procedures, and best practices to support the various delivery methods used by the PAMP.

These manuals are attached in Appendix B.

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# Section 9. Health and Safety Management Plan

The Health and Safety Management Plan is included as Appendix D.

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# Section 10. References

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# Appendix A
# Communications Plan

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PORT OF ALASKA MODERNIZATION PROGRAM

# Appendix A: Communications Plan

Revised October 2022

*Prepared for*
Port of Alaska

Jacobs HDR

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# Background and Purpose

The Port of Alaska (POA) is an essential piece of infrastructure that supports Alaska's economy. Annually, the POA serves 90 percent of the states' population, including some 75 percent of all inbound, non-fuel cargo (for example, food, consumer goods, building materials, cars, cement, and other goods Alaskans need and use every day to live, work, and thrive).[1]


Figure 1. Alaska Freight Distribution Map

*Courtesy of Municipality of Anchorage*

Engineers estimate that POA's aging docks will start reducing their load-bearing capacity due to corrosion in as few as 4 years if they are not replaced.[2] The POA is in the process of modernizing its facilities through implementation of the Port of Alaska Modernization Program (PAMP). The intent of the program is to provide a port facility that will efficiently meet demands for delivery of food, fuel, cement, and other commodities to Anchorage and the rest of Alaska over the next 75 years.[3] To accomplish these goals, the program aims to replace Anchorage's aging docks and related infrastructure before it fails by:

- Improving operational safety and efficiency
- Accommodating modern shipping operations
- Improving resiliency to survive extreme seismic events and sustain ongoing cargo operations4

# Goals and Objectives

There are goals and objectives for the PAMP, as well as the strategic communications program. From the planning phase to completion of construction, PAMP goals are at the heart of all that we do. Our goals are to:

[1] https://www.adn.com/opinions/2022/01/28/its-time-to-save-the-port-of-alaska/

[2] https://www.portofalaska.com/

[3] https://www.muni.org/Departments/Assembly/Documents/Prescriptive%20Information%20-%20Terminal%201%20%28T1%29%20and%20Terminal%202%20%28T2%29%20-%20Rev.%2001%20-%20Final.pdf

[4] https://www.portofalaska.com/

- Upgrade the POA to current seismic and climate resiliency standards.
- Deliver the modernization program on time and on budget.
- Consider input from stakeholders, neighboring communities, and the public.

The project's goals guide the work of the strategic communications and engagement team; however, the team also has their own goals that guide their work regardless of phase, tactic, or who is completing the work. Strategic communications staff will:

- Support regular communication with agencies, departments, and individuals that are working to deliver the PAMP.
- Align messaging across agencies and departments and create consistent materials.
- Proactively and regularly provide consistent and accessible information to elected officials, stakeholders, the public, and the media.
- Understand and clearly communicate project benefits.
- Be responsive in a timely manner to public questions, concerns, and feedback.
- Be accountable and transparent about how public input has affected project decisions.
- Ensure equity, diversity, and inclusion are incorporated into community outreach.
- Engage the greater PAMP team to help coordinate federal funding efforts.

# Target Audiences

The PAMP is a large, multibillion-dollar construction program adjacent to Upper Cook Inlet and the Municipality of Anchorage (MOA) and is anticipated to be financed by MOA, state, and federal funding sources. The POA is also a United States Commercial Strategic Seaport that support Department of Defense missions in Alaska, the Pacific, and the Arctic. As such, the program's messages must reach a diverse mix of constituencies:

- State residents
- Local businesses
- Port tenants, carriers and users
- Freight industry
- Petroleum industry
- Building industry (cement and building materials)
- Cruise industry
- Anchorage community/neighborhood councils/organizations
- Regional facilities and businesses with a special interest in the POA (such as Ted Stevens International Airport, Joint Base Elmendorf-Richardson, Alaska Railroad)
- Business organizations and business leaders
- Media

- Elected officials and staff:
  - Federal
    - Senator Lisa Murkowski
    - Senator Dan Sullivan
    - State Representative
  - State
    - Governor Mike Dunleavy
    - State senators and representatives
  - Local
    - Mayor Dave Bronson and staff
    - Anchorage Assembly
  - POA Commissioners
    - Kevin Mackey
    - Paul Mehler
    - Christopher Manculich
    - Mike W. Robbins
    - Peggy Jean Rotan
    - Scott Selzer
    - Aves Thompson
    - Ron Ward
    - Garret Wong
- Government agencies
  - Anchorage Water & Wastewater Utility
  - Alaska Department of Transportation and Public Facilities
  - U.S. Army Corps of Engineers
  - U.S. Coast Guard
  - Federal Maritime Commission
  - Maritime Administration
  - Federal Emergency Management Agency
  - National Marine Fisheries Services
- Alaska Native Corporations

# Key Messages

The PAMP team will incorporate the following key messaging in communications and public engagement planning to ensure information reaches target audiences; the team will review these messages and update them as project conditions change:

- The POA is the state's primary cargo facility, moving goods consumed by 90 percent of Alaska's population.
- The PAMP aims to replace aging port infrastructure to improve port operations, safety, and efficiency; accommodate modern shipping operations; and improve resiliency to earthquakes and other disasters.

- While it is impossible to predict the time and location of the next big earthquake, we need to take action now and invest in the POA's aging infrastructure.
- Replacing aging infrastructure at the port will ensure that there will not be an interruption in receiving goods and services following an earthquake event.
- The port provides food security for 90 percent of Alaskan's and half of those goods are transported outside of Anchorage. That is why it is crucial to the entire state that the port's cargo docks withstand intense earthquake shaking and remain open.
- In addition to the challenges associated with commercial trucking and traffic congestion, the Seward and Whittier Ports are vulnerable to tsunamis, making the POA the best option to invest in infrastructure improvement projects.

# Communications Staff

The following groups have a role in delivering internal and external communications for the PAMP:

- MOA Mayor and his team
- MOA Communications
- MOA Municipal Manager and her team
- POA Director and his team
- MOA State Lobbyists
- MOA Federal Lobbyists
- Program Management Office (PMO) Program Manager
- PMO Strategic Lead
- PMO Stakeholder and Communications Lead

# Key Dates

Figure 2 depicts PAMP projects divided into 5 phases.


Figure 2. Port of Alaska Modernization Plan Phase Diagram

# Communications Tactics

This section details the key strategic and tactical actions the PAMP Communications Team, larger PAMP team, POA, MOA, and state and federal lobbyists will take in support of its goals and objectives. By working together and in alignment with each other, these stakeholder groups will develop and implement consistent and effective project messaging. The communication strategic and tactical actions listed are not exclusive to any one audience, objective, initiative, challenge, problem, or opportunity. Rather, they will be used, alone or together with other communications activities, as strategically appropriate to achieve the desired result.

## Government and Media relations

- Support government relations by planning and coordinating effective program communications, strategic council, and written materials
- Support development of materials for media inquiries, briefings, and tours

## Community Outreach and Engagement

**Direct outreach** through supporting:

- Open houses (virtual or in-person) regarding project progress
- Presentations to community councils/organizations, business associations/organizations, Anchorage residents or other stakeholder groups
- Fairs and festivals
- Tours for select audiences (as appropriate)
- Ground-breaking and ribbon-cutting events

**Indirect outreach** through supporting:

- Email updates to subscribers, along with other targeted emails to narrower, industry subsets (freight, petroleum, cruise)
- Two-way correspondence (phone and email)
- Program-wide information line or voicemail for those who prefer the phone to communicate
- Direct mail (selectively)

**Online outreach** through supporting:

- Content on the POA and MOA websites
- Develop public-facing monthly reports detailing recent PAMP progress
- Fact sheets, folios, briefing papers, graphic illustrations, and other informational products presented via websites (print copies distributed in person)
- Program videos
- Program photographs

**Social media outreach** through supporting:

- POA's Facebook page
- Mayor Bronson's Twitter, Facebook, and Instagram feeds

For additional tactics and tools, refer to Appendix A.

# Metrics and Measurement

As the communication tactics are implemented on the PAMP, the PMO will develop metrics to validate their efficacy.

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# Attachment A1
# Communications Tactics and Tools

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Table A-1. Communications Tactics and Tools

| Tactic | Purpose | Key Audience(s) |
|---|---|---|
| **Public and media interviews**<br>Gather information from interviews with state residents, businesses, community groups, or other stakeholders with shared project interests to obtain input on the various elements of the project. Respond to media inquiries about the project and engage with trade and special-interest publications to deliver newsworthy project updates. | Gather and summarize feedback; share information; build community and media relationships | Interested and affected stakeholders, community members, organizations and businesses, media |
| **Public briefings/meetings**<br>Meetings with people who represent stakeholder interests expected to be affected by the project. | Gather and summarize feedback; share information; build community relationships | Interested and affected stakeholders, community members, organizations and businesses |
| **In-person or virtual project tours**<br>Tour the construction areas by foot to educate about project challenges and solutions and obtain input. | Gather and summarize feedback; share information; encourage community involvement | Media, select stakeholders and community members |
| **Open houses**<br>Present information and gain feedback about program development (such as cargo terminal designs, construction schedules, financing) at key milestones. | Gather and summarize feedback; share information; encourage community involvement | General public |
| **Online open houses with survey**<br>Provide same information online as at in-person open houses. | Gather and summarize feedback; share information; encourage community involvement | General public |
| **Videos**<br>Develop videos to generate awareness of the project and communicate key messages and talking points. Topics include: project overview and design, facts about the POA, environmental considerations (e.g., protecting endangered marine mammals). | Share information | General public |
| **Tabling events**<br>Distribute Program materials by hosting information tables at locations or events where people are already located or gathering. | Share information | General public |
| **Website**<br>Make project-related documents and information accessible online. Content will include project overview, project schedule, funding information, photos, videos, fact sheets, and other relevant materials. | Share information; encourage community involvement | General public |
| **Fact sheet and mailers**<br>Fact sheets, folios, briefing papers, graphic illustrations, and other informational products will be prepared about the project purpose, benefits, design, and ways to contact project staff, participate or get more information. | Share information | General public |
| **Frequently asked questions**<br>Project information and answers to frequently asked questions will be posted online and printed and distributed to interested community members and stakeholders during in-person tours, open houses, and tabling events. | Share information | General public |

| Tactic | Purpose | Key Audience(s) |
|---|---|---|
| **E-newsletters and newsletter mailers**<br>Distribute e-newsletters to provide community members and stakeholders with the latest project developments, upcoming work, and involvement opportunities. Distribute printed newsletter mailers to invite people to participate in the in-person and online community engagement events. | Share information | Newsletter subscribers, contacts collected through the stakeholder database |
| **Translation and interpretation services**<br>Print materials will be translated into commonly spoken languages in the Anchorage area. The project team will work with MOA for translations. | Share information, build community relationships | Community members, LEP speakers |
| **Social media**<br>Social media posts will be used to promote public open houses and events/presentations across various platforms by the POA and MOA. | Share information; encourage community involvement | Social media account followers |
| **Streaming through online platforms**<br>Use online platforms such as YouTube, Facebook, and Zoom to live-stream presentations and community events. | Share information; encourage community involvement | General public |
| **News media releases**<br>News media releases will be used to promote public open houses, events/presentations, and major project milestones (e.g., completion of PCT, ground-breaking for NES1). | Share information | General public |
| **Email/Voice mail**<br>A project email account and voicemail account will receive comments and questions from interested audience members. Comments and questions will be acknowledged and/or responded to within 3 business days. | Share information; encourage community involvement | General public |
| **Public Database and Comment Log**<br>The stakeholder database will track data on submitted comments and engaged stakeholders. This information will be used to inform and update residents, businesses, and other interested stakeholders affected by the project. | Data tracking | Interested and affected stakeholders, community members, organizations and businesses |

LEP = Limited English Proficiency

MOA = Municipality of Anchorage

NES = North Extension Stabilization Step 1

PCT = Petroleum and Cement Terminal

POA = Port of Alaska

# Appendix B-1
# Construction Management Manual

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PORT OF ALASKA MODERNIZATION PROGRAM

# Appendix B-1: Construction Management Manual

Revised October 2022

*Prepared for*
Port of Alaska

Jacobs HDR

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# Version History

The Version History table lists details about each revision of this document.

| Date Issued | Change Requested By | Document Version # | Change(s) Made | Affected Section(s) |
|---|---|---|---|---|
| 10/2016 | Jeff Bool | 01 | Post TPP Modifications | All |
| 08/2018 | Jeff Bool | 02 | Periodic update | All |
| 11/2019 | Scott Wharton | 03 | Internal Mods for PCT 2020 | All |
| 10/2022 | Sarah Rygh | 04 | Updated for new organization chart | All |

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# Acronyms and Abbreviations

| | |
|---|---|
| ARE | Assistant Resident Engineer |
| CADD | computer-aided design and drafting |
| CH2M | CH2M HILL Engineers, Inc. |
| CI | construction inspector |
| CGC | construction general conditions |
| CM | construction manager |
| CMM | *PAMP Construction Management Manual* |
| CPM | Critical Path Method |
| D-B | design-build |
| DOL | U.S. Department of Labor |
| DRB | Disputes Review Board |
| DWR | daily work report |
| EOR | engineer of record (same as designer of record) |
| HDR | HDR, Inc. |
| HSE | health, safety, and environmental |
| IFC | issued for construction |
| ISO | International Organization for Standardization |
| ITB | invitation to bid |
| Jacobs | Jacobs Engineering Group Inc. |
| MCS | Master Control Schedule |
| MOA | Municipality of Anchorage |
| NCN | nonconformance notice |
| NTP | notice to proceed |
| O&M | operations and maintenance |
| PAMP | Port of Alaska Modernization Program |
| PCT | Petroleum and Cement Terminal |
| PDF | Adobe Portable Document Format |
| PMO | Program Management Office |
| PMP | PAMP Project Management Plan |
| POA | Port of Alaska |
| PT | Petroleum Terminal |
| QA | quality assurance |
| QC | quality control |

| | |
|---|---|
| RE | resident engineer |
| RFI | request for information |
| RFP | request for proposal |
| T&M | time and materials |
| TAG | The Adherence Group |
| TOTE | Totem Ocean Trailer Express |
| TWIC | Transportation Works Identification Credential |
| U.S. | United States |

# Introduction

The Port of Alaska Modernization Program (PAMP) is a multiphase program initiated to modernize facilities at the Port of Alaska (POA). The POA is a vital component to the movement of industrial, consumer, and defense freight for the State of Alaska and a vital part of the local and state economy.

Specific work elements of the PAMP include the following:

- A test pile program
- Demolition and removal of older terminal area improvements and the Transit Warehouse
- Construction of pipe piling foundation elements, wharf structures, and a new terminal administration building
- New cranes for lift-on/lift-off container operations
- Land-side roadway and other upland improvements

The existing Transit Warehouse houses the following specific operations, which require several land-side buildings:

- Port Administration
- Port Maintenance
- Port Warm Storage
- Horizon Crane Maintenance
- The Adherence Group (TAG) operations for Totem Ocean Trailer Express (TOTE)

The POA has retained Jacobs Engineers, Inc. (Jacobs) and HDR, Inc (HDR) as the PAMP Program Management Office (PMO) to provide professional project and construction management services for the program. This *PAMP Construction Management Manual* (CMM) summarizes the procedures and best practices to be used by the PMO in providing construction management services for the program.

This CMM is written as the umbrella document controlling activities for the entire construction program to develop the PAMP. The required forms are attached to this CMM (refer to Attachments B1-1 through B1-5 for PAMP forms and templates).

## 1.1 Scope

This CMM is an extension of the *PAMP Project Management Plan* (PMP). It is programmatic in nature and will guide construction management activities associated with elements of the PMP. The CMM is a controlled document—the PMO has revision responsibility and POA has approval authority for changes.

This CMM addresses the following topics:

- Communications – Addresses PMO communication protocols, as well as communications with the Municipality of Anchorage (MOA), POA tenants and stakeholders, and construction contractors and their subcontractors. Guidelines for timely project communications and dissemination of project information, as defined by the PMO, will be established to assist in maintaining orderly operations of the POA during construction operations.
- Project Controls – Includes cost control.
- Data and Document Control – Defines roles for data and document management for the PMO, the construction contractors, and POA tenants and operators. Data and Document Control will be developed and implemented with the closeout plan from the PMP in mind, documenting progress from design concept to final as-built drawings and project records.

- Quality Control and Quality Assurance (QA/QC) – Describes the quality documentation process for each contract that conforms to POA requirements and is administered by the PMO. The details of QA/QC for the project will be addressed in the project-specific work plan for each contract.
- Heath, Safety, and Environmental (HSE) – Describes the construction contractor's HSE work approach within the overall POA safety program. This important element will help the PMO successfully complete the project while maintaining regular POA functions in conformance with established health and safety procedures for marine and uplands construction. It also includes project environmental and regulatory permits and mitigation measures. The PMO will work with a "safety first" mind set and be in compliance with the PAMP Field Safety Instructions. In addition, PMO staff will attend the POA Security Awareness Training seminar and obtain the appropriate POA security credentials. Whether a person obtains a Transportation Works Identification Credential (TWIC) card will be determined on an as-needed basis.

This CMM covers PMO roles and responsibilities through the various phases of project development, including the following:

- Constructability reviews
- Specification writing support
- Utility and tenant coordination
- Pre-proposal and preconstruction activities
- Project execution through project closeout, including the acceptance and commissioning stages of the specific contracts

Space in the POA is at a premium, and it is necessary to avoid disrupting POA tenant activities; therefore, work flow between the construction contractor and POA tenants will be coordinated based on the efficiency of each party, with the goal of avoiding unplanned disruptions.

While some PMO roles and responsibilities will vary based on the contract type, the general composition of the team is depicted in the PAMP Construction Management Organizational Chart (Figure 1-1). The PAMP organization structure showing entities outside of the PMO is found in the PMP.

Construction contracts expected for the PAMP include the following:

- Test Pile Program – completed
- North Extension Stabilization Step 1
- South Backlands Stabilization – completed
- Petroleum and Cement Terminal (PCT) comprised of the following:
  - Soil Improvements – completed
  - Transitional Dredging – completed
  - 2020 Scope of Work – completed:
    - Trestle foundations, abutment, approach slab and deck
    - Platform foundations, deck and seismic span
  - 2021 Scope of Work – completed:
  - Mooring and breasting dolphins
  - Topside finishes and mooring equipment
  - Petroleum Piping and cement offloading equipment
- Terminal 1
- Land-side Buildings
- Terminal 2
- Petroleum Terminal (PT)

- Terminal 3 Demolition
- Northern Extension Stabilization Step 2

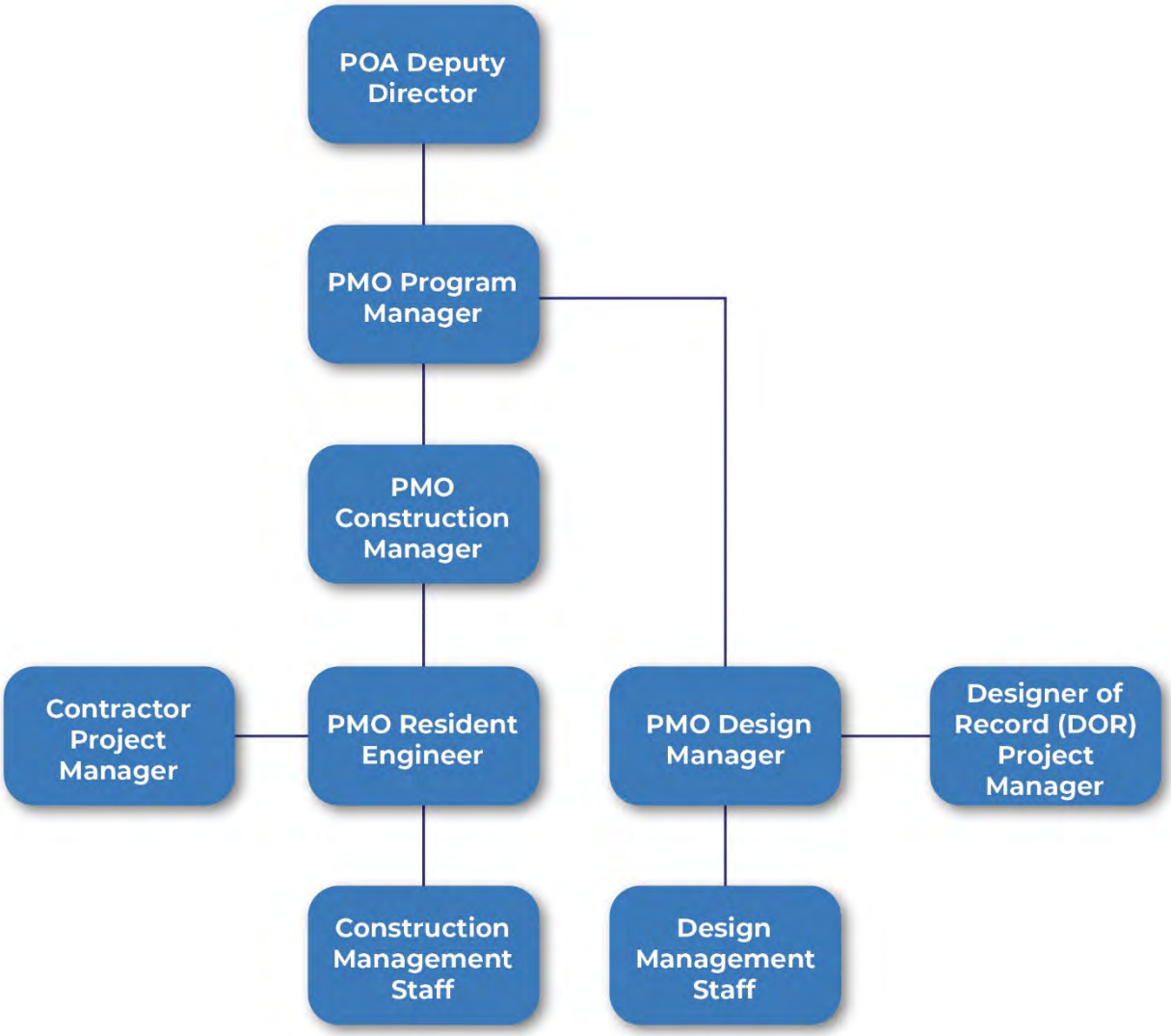


Figure 1-1. Construction Management Organizational Chart

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# Roles and Responsibilities

The PMO staff will work in an integrated manner with other stakeholders to discharge their construction administration duties. PMO roles are discussed in this section to emphasize areas of responsibilities and limitations of authority in the discharge of duties.

## 2.1 Program Manager

As indicated in the organizational chart (Figure 1-1), the PAMP Program Manager reports directly to the POA Designated Representative. The Program Manager's roles and responsibilities are set forth in the PMP.

## 2.2 Construction Manager

The PMO Construction Management Lead (CM) reports directly to the Program Manager; however, as manager of construction tasks, the CM will have direct interaction with the POA Designated Representative and others (for example, the POA Safety Officer and POA Operations Director) as required to coordinate construction activities. The CM will be accountable for the following tasks:

- Documenting that the project is constructed in accordance with plans and specifications, using sound engineering and construction practices
- Documenting that the contractor's work is being completed in accordance with the approved construction schedule and within the overall budget
- Reviewing the contractor's pay requests in a timely manner, in accordance with the contract, and making recommendations to the POA for payment
- Documenting that claims and changes are appropriate and properly documented
- Interpreting contracts using sound engineering practices
- Expediting the overall construction process (that is, taking a proactive rather than reactive approach), and working with the stakeholders to understand challenges and concerns and develop solutions to expedite the construction work
- Overseeing and coordinating the various construction phase activities, both with a single contract and between multiple contractors working in the POA at a given time
- Providing document, schedule, and plan reviews during both the preconstruction (design) and construction phases of the contract
- Participating in the bid and award process
- Addressing and monitoring change on projects
- Participating in briefing a Dispute Review Board (DRB), if used
- Managing the claims and conflict resolution process
- Coordinating with tenants, other outside agencies, and stakeholders as directed and authorized by the POA
- Coordinating closeout services for each project
- Before award, assisting in pre-proposal conferences and participating in pre-award meetings

## 2.3 Resident Engineer

Each construction effort is assigned a specific Resident Engineer (RE). The RE reports directly to the CM. The RE will coordinate and assist with the day-to-day activities of staff involved in each phase of construction administration work. The RE will discharge delegated tasks and responsibilities as assigned by the CM.

The RE will be accountable for the following tasks:

- Performing document reviews and final bid document reviews
- Providing input to the PMO-controlled overall Master Control Schedule (MCS)
- Providing the primary contact person for the contractor during the construction phase of the contract
- Managing Construction Management staff observing and documenting project activities
- Monitoring the contractor's work to document that it is performed in accordance with the agreed-upon schedule
- Receiving and resolving requests for construction document information and clarification, as well as documenting the field conditions that may represent a change to the contract conditions
- Processing requests for changes, either from the contractor or the POA, including changes in the contract price or schedule that result from such changes
- Responding professionally, quickly, and courteously to concerns about construction (the RE will not interact with the media)
- Taking reasonable steps to minimize the impact of construction on the affected POA tenants and local businesses, including attending weekly meetings with POA and its tenants and operators to coordinate POA operational schedules and contractor activities and providing weekly summaries of these meetings
- Coordinating the review and approval of the contractor's baseline schedule
- Monitoring the contractor's monthly schedule updates to determine the project status and provide directive(s) to the contractor to recover a negative schedule impact, if necessary
- Reviewing and verifying progress and final contractor payment requests for the work, and maintaining a comprehensive document record, which includes quantities and payments for changes in the work; the document record will also include supporting documents required for payment, such as material certifications, affidavits for payments to subcontractors and suppliers, insurance certificates, and invoices for stored materials
- Checking and approving the input of these quantities (refer to previous bullet), and producing a payment recommendation to be reviewed by the CM before submittal to the POA for approval
- Reconciling final payment quantities and requests
- Monitoring the quality of work performed to confirm that it meets specifications and industry quality standards, including processing shop drawings and other submittals, monitoring testing, and recording nonconforming work and completion of corrective action
- Managing QA inspection and materials testing activities
- Bringing observed safety violations to the attention of the contractor and PMO. (Note: The PMO is not responsible for the safety of the contractor's staff or operations.)
- Managing staff assisting in the administration of construction contracts

- Reporting weekly to the CM on the progress of the work
- Maintaining electronic files in accordance with approved document control processes and procedures, including uploading files to the document control system
- Receiving, distributing for review, and monitoring the return of submittals to the contractor
- Maintaining a log of submittals and resubmittals
- Providing submittal status reports to the PM for construction projects
- Receiving and processing requests for information (RFIs), deviation requests, and resulting changes to the contract, if applicable, as follows:
  - The RE will determine the routing for responses to RFIs
  - Changes resulting from RFI clarification will be processed through change documentation
- Conducting weekly Progress Meetings with the contractor, and providing meeting notes in accordance with procedures outlined in the contract
- Monitoring and documenting results of testing, as well as maintaining testing, certifications, and other quality records
- Reporting safety incidents
- Reviewing and implementing project closeout plans, and producing or collecting required construction contract closeout documentation including as-built and record drawings, warranties, operations and maintenance (O&M) manuals, permits, spare parts and spare parts inventories, progress photographs and videos, record documents, and electronic files
- Coordinating and conducting final inspections and closeout activities with the engineer of record (EOR) and the POA
- Maintaining and archiving contract files and as-built information in an orderly file structure
- Managing the documentation process for submittals, RFIs, substitution requests, deviation requests, certificates of compliance, and other submittals as defined in the construction contract
- Monitoring environmental permit compliance and mitigation requirements
- Coordinating tenant equipment installation and commissioning
- Documenting the timely completion of post construction activities
- Issuing Nonconformance Notices to the contractor when out of compliance work is observed

## 2.4 Assistant Resident Engineer

Depending on the size of the construction effort, an Assistant Resident Engineer (ARE) may also be assigned. The ARE reports to the RE and will combine a field and office role to assist the RE in their duties. The ARE may be delegated RE duties by the RE that do not weaken the responsibility or control of the RE over contract administration. The ARE will assist the RE by providing special emphasis and detail on the following administration duties:

- Reviewing and verifying progress and final contractor payment requests for the work, and maintaining a comprehensive document record, which includes quantities and payments for changes in the work; the document record will also include supporting documents required for payment, such as material certifications, affidavits for payments to subcontractors and suppliers, insurance certificates, and invoices for stored materials

- Reconciling final payment quantities and requests
- Monitoring the quality of work performed to confirm that it meets specifications and industry quality standards, including processing shop drawings and other submittals, monitoring testing, and recording nonconforming work and completion of corrective action
- Managing QA inspection and materials testing activities
- Maintaining electronic files in accordance with approved document control processes and procedures, including uploading files to the document control system
- Maintaining and archiving contract files and as-built information in an orderly file structure
- Receiving, distributing for review, and monitoring the return of submittals to the contractor
- Initial processing of submittal reviews

In no case will ARE review or documentation efforts change the RE responsibilities.

## 2.5 Construction Inspector

Based on the size and technical specialties of each construction effort, one or more construction inspectors (CIs) will be assigned. CIs serve as observers of field activities and are responsible for inspecting and reporting on work in progress. The CIs report to the RE or the ARE. As shown in the organizational chart (Figure 1-1), functions listed as “onsite inspections,” “offsite inspection,” “specialty inspection,” and “materials testing” are CI functions. The CIs are responsible for performing inspection of the construction activities as assigned by the RE and documenting that the work is in compliance with approved contract plans and specifications. In some limited cases, the POA or other third party having jurisdictional authority (for example, the fire marshal, building official, utility company representative, or tenant representative) may observe construction activities. The RE and CIs will coordinate with third-party observers in accordance with POA and contract requirements.

Article 5.14 of Section 10.05 of the Construction General Conditions discusses the CI’s authority. CIs will be authorized to inspect work and materials. Such inspection may extend to every part of the work and to the preparation, fabrication, or manufacture of the materials to be used. CIs will not be authorized to alter or waive the provisions of the contract, issue instructions contrary to the contract documents, or serve as supervisors for the contractor.

The CIs are expected to bring to the RE’s attention discretionary matters that may require investigation, such as difficulties or questions about the following:

- Materials suitability and approvals, such as structural concrete, concrete mix designs, rebar certifications, and steel shop drawings
- Deep foundation installation, such as piling installation, completeness of pile driving logs, driving to the acceptance criteria established by the EOR, the pile driving analysis consultant’s questions, positioning of pile, pile template placement and positioning, and contractor’s certified welding inspectors for ultrasonic or X-ray testing of pile splice welds
- Excavations, lines, and grades
- Riprap placement tolerance, rock quality testing results, riprap yield monitoring, and placement to lines and grades per plans
- Sheet pile removal practices

The CIs will be accountable for the following tasks:

- Observing the contractor's work, and recommending approval of the inspected work to the RE based upon QA tests conducted in accordance with published procedures and industry standard construction practices
- Maintaining inspection records and recording pertinent contractor data (for example, equipment, material, labor, and progress of the works) in bid item lists or the work breakdown structure
- Preparing daily inspection reports, and keeping the RE advised of inspection results, construction conditions, and anticipated changes to the work (refer to Attachment B1-2, Daily Work Reports); and verifying and maintaining, on a daily basis, quantity data for use in processing progress payments
- Inputting daily quantities data into the quantity book (electronic)
- Maintaining a current set of contract documents; and posting RFIs, design clarifications, field directives, and other design modifications onto a field set of drawings that will be used to verify the contractor's as-built drawings
- Promptly bringing access, operational, or other tenant accommodation issues to the attention of the RE to facilitate smooth operations at the POA
- Verifying material conformance with approved submittals
- Inspecting and verifying field conditions and conformance of the work
- Evaluating existing conditions
- Evaluating the effectiveness of traffic control

## 2.6 Additional Staff

Depending on the scope and magnitude of a specific project, the CM and RE may be supported by the following additional staff:

- Planner, scheduler, and cost control specialist
- Field engineer and assistant RE
- Administrative assistant
- Document control manager and submittal coordinator
- Health and safety compliance manager
- Environmental compliance monitoring specialist

The titles listed are indicative and generic only; roles will be further defined in the work plan for specific contracts. These staff members will work under the direction of the CM, RE, or both, and will be assigned specific tasks based on responsibilities described in this CMM.

## 2.7 Summary of Roles and Responsibilities

The roles and responsibilities of the various entities and positions are depicted in Table 2-1, which is organized as follows: columns include the various entities involved in the PAMP, and rows include activities and procedures.

The entries in Table 2-1 indicate the predominant responsibility or function for each entity and procedure. The entries stand for the following:

- R = responsible party – Responsible for carrying out the procedure or having it performed under their direct supervision (for example, preparation and submittal of a report)

- A = accountable party – Accountable to other entities for the activity or procedure taking place (for example, making a progress payment or certifying the result of a field test)
- C = consult – In performing the procedure or activity, the responsible party consults with and takes input from the concerned party or entity
- I = inform – Once an activity has been performed, the responsible party must inform other entities of the results of the activity (for example, materials test results from acceptance testing activities are provided to the contractor)

The list of procedures in Table 2-1 is derived from the categories of activities and procedures in this CMM's table of contents.

Table 2-1 is an overview of relationships between the MOA, PMO, EOR, Construction Management team, and contractor. It does not show communications and only shows the predominate relationships for each procedure or activity. The PM is not shown in the matrix, but it is understood that the PM will be consulted and informed on issues.

Also note that the EOR is shown as a separate entity. In the case where a design-build (D-B) contract is being administered, the EOR responsibility would remain with the design-builder; however, the owner's engineer may provide oversight review of documents to verify that contract intent is being met.

Table 2-1 is meant as an overview only. Contract requirements will govern roles between the entities.

Table 2-1. Construction Management Roles and Responsibilities

| Manual Sect. # | Entity/position: Procedures/ Activities: | R= responsible party | | A = accountable party | | | C = consult | | | I = inform | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PMO CONSTRUCTION ADMINISTRATION ACTIVITIES | | | | | | | | |
| | | MOA/ POA | EOR[a.] | Construction Manager | Resident Engineer [b] | Design Manager | Document Control | Project Controls | Inspectors | Specialty Inspectors | Materials Testing | Contractor/ Design-Builder |
| **1-2** | **No activities listed** | - | - | - | - | - | - | - | - | - | - | - |
| **3** | **Design-phase Services** | I | R | C | C | A | - | - | - | - | - | - |
| **4** | **Bidding and Proposal Process** | - | - | - | - | - | - | - | - | - | - | - |
| **4.1** | **Bid and Proposal-phase Services** | R | I | A | C | C | - | - | - | - | - | - |
| **4.2** | **Post-bid and Proposal Services** | R | I | C | A | C | - | - | - | - | - | - |
| **5** | **Construction Phase** | - | - | - | - | - | - | - | - | - | - | - |
| **5.1** | **Organization and Management** | I | - | A | R | - | - | - | - | - | - | I |
| **5.2** | **Preconstruction Conference** | R | I | A | C | I | I | I | I | I | I | I |
| **5.4** | **Construction Startup (pre-existing condition survey)** | I | - | I | A | - | - | - | R | - | - | I |
| **5.5** | **Project Controls** | - | - | - | - | - | - | - | - | - | - | - |
| 5.5.1 | Communication Control | - | - | A | R | - | - | - | - | - | - | I |
| 5.5.2 | Correspondence | - | - | A | R | - | - | - | - | - | - | I |
| 5.5.3 | Site Meetings | I | - | A | R | - | - | - | - | - | - | I |
| 5.5.4 | Construction Progress Meetings | I | - | A | R | - | - | I | - | - | - | I |
| **5.6** | **Drawing Control** | - | - | - | - | - | - | - | - | - | - | - |
| 5.6.1 | Design Documents | I | R | I | I | A | I | I | - | - | - | I |
| 5.6.2 | Shop Drawings | - | C | I | A | I | I | I | - | - | - | R |
| 5.6.3 | RFIs | - | C | I | A | I | I | I | - | - | - | R |
| 5.6.3 | Interpret Contract Drawings | - | R | I | I | A | - | - | I | I | I | I |
| 5.6.4 | Project Record Documents | I | I | I | A | I | C | I | - | - | - | R |
| **5.7** | **Schedule Control** | - | - | - | - | - | - | - | - | - | - | - |
| 5.7.1 | Construction Contract Schedule | I | - | C | A | - | - | C | - | - | - | R |
| 5.7.2 | Short-term Schedules | I | - | I | A | - | - | C | - | - | - | R |

| Manual Sect. # | Entity/position: Procedures/ Activities: | R= responsible party | | A = accountable party | | | C = consult | | | I = inform | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MOA/ POA | EOR[a.] | PMO CONSTRUCTION ADMINISTRATION ACTIVITIES | | | | | | | | Contractor/ Design-Builder |
| | | | | Construction Manager | Resident Engineer [b] | Design Manager | Document Control | Project Controls | Inspectors | Specialty Inspectors | Materials Testing | |
| 5.7.3 | Schedule Updates and Revisions | I | - | I | A | - | - | C | - | - | - | R |
| 5.7.4 | Schedule Communications and Meetings | I | - | I | A | - | - | I | - | - | - | R |
| 5.7.5 | Procurement Control | R | - | A | C | - | - | I | - | - | - | - |
| 5.7.6 | Time Extensions | R | - | A | C | - | - | C | - | - | - | I |
| 5.7.7 | Update of Project Master Schedule | I | - | A | C | - | - | R | - | - | - | - |
| **5.8** | **Cost Control** | - | - | - | - | - | - | - | - | - | - | - |
| 5.8.1 | Progress Payments | A | - | C | R | - | - | I | - | - | - | I |
| 5.9 | Change Management | - | - | - | - | - | - | - | - | - | - | - |
| 5.9.1 | Contract Contingency | A | - | R | I | - | - | I | - | - | - | - |
| 5.9.2 | Risk Register | R | - | A | C | - | - | I | - | - | - | - |
| 5.9.3 | Disputes Review Board | A | - | R | C | - | - | I | - | - | - | R |
| 5.9.4 | Change Orders | A | C | R | C | I | I | I | - | - | - | I |
| 5.9.5 | Change Order Procedures | I | - | C | A | - | I | R | - | - | - | - |
| 5.9.6 | Claims Avoidance | - | C | A | R | I | - | I | - | - | - | - |
| 5.9.7 | Claims | - | - | A | C | - | I | I | - | - | - | R |
| 5.9.8 | Claims Procedures | I | - | C | A | - | - | R | - | - | - | R |
| **5.10** | **QA/QC** | - | - | - | - | - | - | - | - | - | - | - |
| 5.10.1 | Quality Responsibility | - | C | I | A | I | - | - | - | - | - | R |
| 5.10.2 | QA | - | - | I | A | - | - | - | R | R | R | - |
| 5.10.3 | Contractor QC Plan | - | - | I | A | - | - | - | - | - | - | R |
| 5.10.4 | Inspection | - | - | - | A | - | - | - | R | - | - | - |
| 5.10.5 | Field Inspection Services | - | - | - | A | - | - | - | R | R | - | - |
| 5.10.6 | DWRs | - | - | I | A | - | - | - | R | R | - | - |
| 5.10.7 | Photographic Records | - | - | - | A | - | - | - | R | R | - | - |

| Manual Sect. # | Entity/position: Procedures/ Activities: | R= responsible party | | A = accountable party | | | C = consult | | | I = inform | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MOA/ POA | EOR[a.] | PMO CONSTRUCTION ADMINISTRATION ACTIVITIES | | | | | | | | Contractor/ Design-Builder |
| | | | | Construction Manager | Resident Engineer [b] | Design Manager | Document Control | Project Controls | Inspectors | Specialty Inspectors | Materials Testing | |
| 5.10.8 | Offsite and Specialty Inspectors | - | - | - | A | - | - | - | R | R | - | - |
| **5.11** | **Monitor Quality Management Plan** | - | - | - | - | - | - | - | - | - | - | - |
| 5.11.1 | Testing | - | - | - | A | - | - | - | - | - | R | - |
| 5.11.2 | Offsite Equipment and Materials Testing | - | - | - | A | - | - | - | R | R | R | - |
| 5.11.3 | Material Certifications | - | - | - | A | - | - | - | - | - | R | - |
| 5.11.4 | Survey Control | R | - | A | C | - | I | - | I | - | - | I |
| 5.11.5 | Noncomplying Work | I | - | I | A | - | I | - | I | I | I | R |
| 5.11.6 | Coordination with Statutory Authorities | - | R | A | C | - | - | - | I | I | - | I/C |
| 5.12 | Safety and Loss Control | - | - | - | - | - | - | - | - | - | - | - |
| 5.12.1 | POA's Safety Program | R | - | A | A | - | - | - | R | R | - | R |
| 5.12.2 | Environmental Issues | R | - | I | A | - | - | - | - | - | - | R |
| **5.13** | **Permits** | I | - | I | A | - | - | - | - | - | - | R |
| **5.14** | **Utilities Location During Construction** | - | - | - | A | - | - | - | - | - | - | R |
| **5.15** | **Public Relations** | A/R | - | I | I | - | - | - | - | - | - | I |
| **5.16** | **Tenant Relations** | A | - | C | R | - | - | - | - | - | - | R/I |
| **5.17** | **Subcontractors** | I | - | I | A | - | - | I | - | - | - | R |
| **5.18** | **Labor Standards** | A | - | I | I | - | - | - | - | - | - | R |
| **5.19** | **Weekly Status Reports for Each Project** | I | - | A | R | - | - | I | - | - | - | - |
| **6** | **Contract Completion and Closeout** | - | - | - | - | - | - | - | - | - | - | - |
| **6.1** | **Approach to Closeout** | - | - | A | R | - | - | - | - | - | - | - |
| **6.2** | **Final Measurement by Surveyors** | - | - | - | I/A | - | - | I | R | - | - | I |

| Manual Sect. # | Entity/position: Procedures/ Activities: | R= responsible party | | A = accountable party | | | C = consult | | | I = inform | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MOA/ POA | EOR[a.] | PMO CONSTRUCTION ADMINISTRATION ACTIVITIES | | | | | | | | Contractor/ Design-Builder |
| | | | | Construction Manager | Resident Engineer [b] | Design Manager | Document Control | Project Controls | Inspectors | Specialty Inspectors | Materials Testing | |
| **6.3** | **Inventory Spare Parts and O&M Manuals** | - | C | I | A | I | - | - | - | - | - | R |
| **6.4** | **Secure Required Occupancy or Startup Permits** | I | - | I | A | - | I | - | - | - | - | R |
| **6.5** | **Warranties, Guarantees, and Lien Releases** | I | - | I | A | - | - | I | - | - | - | R |
| **6.6** | **Project Record Documents** | - | I | I | A | I | C | - | - | - | - | R |
| **6.7** | **Pre-final and Final Inspections** | - | - | I | A | - | - | - | R | - | - | C |
| **6.8** | **Contractor's Final Payment** | A | - | A | R | - | - | I | - | - | - | I |
| **7** | **Post construction Services** | - | - | - | - | - | - | - | - | - | - | - |
| **7.1** | **Train POA Operations Staff** | I | - | I | A | - | - | - | - | - | - | R |
| **7.2** | **Provide Startup Assistance** | I | C | I | A | I | - | - | - | - | - | R |

Notes:

[a] The EOR may be within the DB entity - oversight design review responsibility will revert to the PMO, and the design responsibility will stay with the DB contractor.

[b] some duties may be performed by ARE, if assigned; but responsibility and accountability remain with the RE

- = not applicable

# Construction Management Services During Design Phase

The RE is responsible for administering the contract once it is awarded, and will conduct an interim and final construction documents review prior to the bidding or proposal process. These reviews will include the following tasks:

- Support the CM in examining the contract documents for clarity, completeness, and consistency; identify conflicting or ambiguous information found, and suggest ways to clarify the contract documents
- Support the CM in identifying variances found among the approved scope, schedule, and project delivery analysis
- Support the CM in identifying conflicts with the existing or anticipated underground utilities, including service lines shown in the drawings
- Collaborate with the EOR to develop the project submittal list for inclusion in the contract
- Collaborate with the EOR to develop an inspection and test plan, special inspections list, and EOR inspection and construction hold points if applicable
- Review project special provisions relating to contract administration, including security and badging, coordination and communication, and other project administration requirements
- Review survey control as noted in the design, and evaluate whether it will be accessible or disturbed during construction
- Review staging and sequences planned for the project, including potential conflicts with the POA Operations or other planned work
- Review permits to determine if there are permit conditions in the contract delegated to the contractor, and evaluate for clarity of intent in the contract documents
- Assess potential questions or options a contractor might present during construction about Value Engineering opportunities
- Conduct a constructability assessment during design reviews
- Review Measurement and Payment items against bid items to confirm that payments can be made with justification, or have the contractor suggest better methods.

The RE's review does not include, specifically, QC of design, design review, or peer review.
The RE will review final plans, specifications, and bid forms prior to being released for bid. This review provides an opportunity to verify that previously identified issues have been addressed.

The RE may review procurement documents for PAMP-furnished equipment, materials, and supplies for construction. The PMO may monitor supplier and fabricator performance and report on the status of the delivery schedule. The RE may also assist in coordinating the delivery, storage, installation and commissioning, and operational training for PAMP-furnished equipment, materials, and supplies.

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# Construction Management Services During Bidding and Proposal Process

Services provided by the RE during the bidding and proposal process include the following:

- Attending the pre-bid or pre-proposal site visit and conference
- Coordinating a bidder and proposal question-and-response process during the advertisement period, and providing responses (provided by others)
- Evaluating bidder or proposer qualifications
- Reviewing bids and proposals received for technical merit and conformance to the Request for Bids
- Advancing and finalizing the construction management plan for the contract

## 4.1 Bid and Proposal-phase Services

The RE is not responsible for contract advertisement, bidding, procurement, or award but will be familiar with bid and award procedures, including dates and times of events, conditions for issue of documents, and the requirements and elements of a responsive bid.

The CM will assist in coordinating responses to bidder questions. The procedures will include a log of bidder questions and requests during the bid phase, as well as the responses. The EOR will be responsible for answering technical questions related to the design.

Addenda to bid packages will be issued by the MOA Purchasing Department. The CM may assist in drafting addenda and submitting them to the POA for review. Upon approval, the POA will forward addenda to MOA Purchasing. The PMO will notify the POA if they are aware of ambiguities or problems with the invitation to bid (ITB) or request for proposal (RFP) documents.

The bid procedures may include one or more pre-bid or pre-proposal meeting(s). These may or may not be combined with a site visit.

The MOA Purchasing Department will conduct the pre-bid or pre-proposal meeting. For each construction contract, the CM and RE will attend and assist in answering questions at the pre-bid and pre-proposal meeting.

## 4.2 Bid and Proposal Review

The RE will review the selected contract bid and proposal, and supplement the construction management plan developed for the contract, as necessary. The intent is for additional information to be provided in the work plan for the contract; however, specific contracts may require a modification to the body of the CMM. If this is the case, a formal revision with POA approval will be implemented for the change. The CM and RE will refine changes required based on the contract type, nature and scope of the contract, and project approach to adjust the level of field construction management, inspection services, and support services (for example, surveying and materials testing) required for the project. The level of effort may also be adjusted after the contractor is selected, if the contractor's approved approach and schedule vary from the assumptions made during the bid and proposal phase of the contract.

The RE may assist the CM in awarding the contract by assembling documents and drafting the notice[s] to proceed (NTP[s]). The CM, as an authorized representative of the POA, will sign the NTP.

The contract will be prepared by the MOA Purchasing Department and transmitted to the contractor for signature. When returning the signed contract, the contractor may be required to attach other documents, including performance and payment bonds and evidence of valid current insurance. The MOA may withdraw awards any time prior to final execution of the contract. Commencement of the work will not be permitted prior to execution of the contract, and the POA is not responsible for resources committed to the project by the contractor prior to execution of the contract.

Official notice of award will occur when the MOA Purchasing Department sends the contractor a written notification with the official contract document(s). This will normally be followed by the NTP, which generally signifies the commencement of the contract period. Some contracts will have more than one NTP, based on how the scope of work and schedule were developed.

The NTP is the official start date and first day counted toward project completion. The PMO will coordinate with the EOR to provide the contractor with sets of conformed contract documents.

# Construction Management Field Services During Construction

This section of the CMM covers the work activities of the Construction Management team during the post-award or construction contract stage of the project.

## 5.1 Organization and Management

A Construction Management field team usually consists of the CM, RE, CI, and other staff as needed. Prior to start of work, the CM will provide copies of executed contracts to team members. An organizational meeting will be held to discuss the role and duties of Construction Management team members, and to review the pre-established communication protocol and document flow.

## 5.2 Preconstruction Conference

The RE will schedule and chair a Preconstruction Conference. Attendees will include the contractor, significant subcontractors, EOR, POA representatives, and other government agencies as required. This effort will be in conformance with the Construction General Conditions (CGC), Preconstruction Conference.

Invited attendees can either plan to attend or request that their concerns and questions be put forth for discussion during the meeting.

The RE will notify key project stakeholders of this meeting. The purpose of this announcement is to advise MOA, stakeholders, and anyone associated with the project that work is commencing.

The purpose of the Preconstruction Conference is to introduce project participants and discuss actions necessary for the successful start, execution, and completion of the contract. Items to be discussed will be listed in a prepared agenda issued to the participants. Matters requiring subsequent response will be clearly recorded in the meeting notes as an action list.

The POA Preconstruction Agenda is included in Attachment B1-3. The PMO will detail the agenda specifically for the contract scope.

The contractor will be urged to come prepared to the Preconstruction Conference with a written list of questions, initial schedule, and issues to be addressed. The RE will record detailed notes that will include an action list, which will include actions assigned to a specific person and the date by which the response must be made, with subsequent actions agreed upon at the meeting.

Specific contracts may have other pre-activity meetings (for example, Pregeotech Meeting, Prepiledriving Meeting) referenced in the contract. Each meeting in addition to the Preconstruction Conference will be referenced in the construction management plan for that particular contract. These additional meetings will be conducted in a manner similar to that of the Preconstruction Conference (that is, the RE will identify appropriate invitees, address the issue[s] at hand, and document the meeting in accordance with this CMM).

## 5.3 Establish Construction Management Field Offices and Facilities

The RE will staff a field office (one primary in the PMO and a secondary in-field as necessary) as needed to supervise construction. The office will be convenient to the work and of sufficient size to accommodate

the maximum predicted level of staffing. The RE will maintain a clean, efficient, professional environment at the field office.

If a staging area is provided for the contractor's use, this should be clearly indicated in the construction documents. If the area is to be shared with other contractors, the space for each contractor should be indicated. The contractor will be required to submit a plan of the office and yard layout prior to mobilization. The plan will be reviewed for:

- Provision of services
- Procedures for handling oil, gas, and other potential hazardous materials
- Access for supplies and emergency vehicles
- Impact on POA tenants
- Demobilization, including dealing with contaminants from workshops and storage areas

Each construction contract will likely stipulate different storage areas to minimize conflicts between contractors and POA tenants.

Temporary facilities will be addressed during preconstruction planning. Access to the site will be reviewed for workforce commuting, delivery of materials, movement of major construction and permanent equipment, and potential impacts to POA tenants. Routes will be planned to avoid sensitive areas wherever possible, and will be investigated for low bridges, weight restrictions, overhead utilities, and condition of roads. When reasonable and possible, the contract conditions will restrict the contractor's access in an active terminal to designated routes.

Adequate provision for parking of workers' vehicles will be provided. Workers will park in a designated area. The contractor will be required to submit plans for handling employee vehicles and controlling their access to the site. This is necessary for safety, security, and operational reasons.

The site security requirements may be specified in the construction contract. If the documents are not specific, the basic safety and security requirements established by the POA will be followed.

## 5.4 Construction Startup

An efficient, organized, and well-planned startup is important for reaching a successful closeout. An unplanned, poorly organized startup can lead to initial delays and problems throughout the life of a project.

Startup can be a challenging time for contractors. Labor and equipment must be mobilized from other projects, since they are rarely sitting idle. Contractors must finalize material purchase orders and subcontractors, obtain permits, fulfill statutory requirements, and produce schedules.

After the award process is complete, but prior to beginning work, the RE and CIs will review the work site in detail and establish a photographic log of pre-existing conditions. This step is important for verifying what the site looked like prior to the beginning of construction. This may include specialty surveys for buildings, utilities, and other POA facilities.

## 5.5 Project Coordination

The CMM sets forth processes and controls to efficiently and effectively administer the contract. Project control guidelines and requirements are discussed in this section.

Aconex will be used as the document control system for correspondence between the contractor and the PMO. The PMO will take the lead in managing this process and provide assistance required to help the contractor get started. While the use of emails, phone calls, and direct conversations are likely to frequently occur between parties on a variety of topics throughout the course of the project, Aconex is to be used for project correspondence.

### 5.5.1 Communication Control

In a complex undertaking with many participants, maintaining control of communications contributes to clarity of understanding; reduction of misunderstandings; and enhancement of open, frank, and constructive communications.

Formal communications will be made with the authorized representatives of the contractor, and not with subcontractors or vendors. These representatives will be identified at or before the Preconstruction Conference. The CM will establish the identity of the onsite representative, along with an emergency phone number, and will also know who represents the contractor; this will normally be the RE and an alternate.

The CM and RE will be the sole conduit for communications between the contractor(s) and design consultant(s) during construction. To maintain comprehensive and consistent recordkeeping procedures, the RE's Document Control Specialist will receive and log communications, and then forward them to the appropriate party for action. This will not preclude opportunities for the CM or RE to facilitate discussions and conversations between the contractor and the designers about intent of specifications, alternatives, and other approaches that may benefit the project.

It is frequently necessary to document conversations for the official record and to disseminate the information to a wider audience. These conversations will be committed to paper (for example, diary form, correspondence, meeting notes, or reports). The document record of communications will be a concise, clear statement of what was said and the positions expressed. There should be no attempt to embellish the conversation or to draw unwarranted conclusions. If the recorder has not understood what was being communicated, corrections will be made or, in the case of disagreements, the positions of the different parties will be clarified.

The goal of communication and documentation protocols will be managing the project effectively and closing out the project as it progresses.

### 5.5.2 Correspondence

The RE will receive and transmit correspondence related to PAMP projects in accordance with established document control procedures. The RE will be responsible for documenting that incoming correspondence is read, prioritized, distributed, acted upon, and filed as necessary. Correspondence management activities will include:

- Correspondence, where appropriate, will be assigned a document control number and logged. Correspondence will reference the assigned contract number.
- Outgoing correspondence will be signed by the RE.
- Outgoing correspondence will be addressed to the proper individual; generally, the responsible senior representative.
- Outgoing correspondence will be numbered when appropriate, describe the subject matter, and indicate to whom it was distributed.

The RE is responsible for maintaining the document record during the construction of the project, including correspondence. Maintenance of this record requires an efficient filing system that meets POA requirements. Files are to be kept secure at all times. Formal correspondence will be through Aconex for transmitting project correspondence and submittals between construction team members. Files will be maintained in electronic format (Adobe Portable Document Format [PDF]). Originals of letters and prints will be stored in hard copy in accordance with the *PAMP Document and Record Management Plan*.

Important telephone conversations about the project will be summarized in an email to the other party using the Record of Conversation mail type in Aconex to document the intent and conclusions or agreements resulting from the conversation.

Aconex is used to communicate and document email conversations, as well as to distribute information to multiple recipients. Aconex mail will be businesslike and appropriate to the subject. Each email is recorded, discoverable in legal proceedings, and easily redistributed outside of the original distribution. Project-significant emails (those that affect time, scope, contract, and funds), including attachments, will be initiated in Aconex.

### 5.5.3 Site Meetings

There may be a need to gather people for meetings for coordination and information purposes. The RE can expect, and will not hesitate to call for, meetings with different groups at varying times and locations. Progress on some issues is best achieved by getting those involved to sit down together and agree on a course of action. Meetings will not be called unless necessary and will be as brief as the business allows.

For formal meetings, the RE will prepare meeting notes that describe meeting business, decisions made, action items, attendees, and distribution. Meeting notes will be brief, intelligible, and accurate, but will not be verbatim records or transcripts. If meetings are held in the field or time is critical, it will be permissible to distribute handwritten notes, provided they are legible. Where appropriate, meeting notes will also include action lists. Actions to be taken following a meeting will be clearly described, will have a specific name assigned to carry out or be responsible for each action, and will include a target date by which the action will be completed.

### 5.5.4 Construction Progress Meetings

To keep the project's safety, quality, budget, and schedule on track, the RE will attend weekly (or other frequency based on the specific contract requirements) progress meetings conducted by the contractor at the project site with the PMO, and others as appropriate. The RE will keep accurate meeting notes and review contractor meeting minutes in a timely manner.

The CM may also conduct monthly progress meetings at the project site with the contractor and other stakeholders, such as POA tenants and operators.

For both the weekly and monthly progress meetings, the RE will review contractor meeting notes and verify accuracy before final meeting notes before finalized meeting notes are sent to the Document Controls Manager for distribution and incorporation into the PAMP files.

## 5.6 Drawing Control

Contract drawings and specifications represent the graphic and textual information describing the work to be constructed. It is essential that this information be carefully controlled and distributed so that construction contractors can be assured they are using the latest and most accurate information. Doing so also establishes a formal procedure for clarifying, expanding, or amending that information.

### 5.6.1 Design Drawings

The RE will receive copies of the contract drawings and specifications, including addenda issued prior to the contract. The RE provide copies of plans and specifications stipulated in the construction contract, together with addenda, to the contractor. Copies of plans and specifications may be required by other entities, such as governmental agencies, public utilities, and other inspection agencies, as well as other contractors interfacing with the project work of the contract. The RE will provide plans and specifications to the appropriate parties and maintain plan holder logs so revisions can be forwarded as needed.

Contract documents issued for construction (IFC) will comply with the most recent *PAMP Computer Aided Design and Drafting (CADD) Standard Manual*.

### 5.6.2 Shop Drawings, Working Drawings, and Sample Submittals

The RE will develop lists of required submittals as noted in the contract. These lists will include administrative, project management, and technical submittals with reference to the specific section within the contract documents. This submittal list will be forwarded to the EOR for review and confirmation that the list is inclusive of required submittals. The contractor will develop and maintain a Submittal Log to be verified by the RE, which will have each submittal numbered and listed consecutively.

The contract documents will indicate the shop and working drawings, as well as the sample submittals required of the contractor. The contractor will be instructed to provide and prepare working drawings to indicate means and methods of construction and design, as well as description of temporary works, including sheet piling, shoring, underpinning, cofferdams, and temporary construction loads. The contractor will also be instructed to provide samples to indicate conformance with descriptions of finishes or material selections for final choice by the EOR.

Shop drawings will be prepared and provided by the contractor to expand, verify, or complete information provided by the EOR on the plans or in the specifications. These may include catalog cuts, manufacturers' standard drawings and details, fabricators' detailing, and equipment performance characteristics. Shop drawings and submittals will be managed in conformance with MASSB GC Article 5.5, Shop Drawings.

The EOR will stamp the submittal indicating its disposition and return it to the RE through the document control system. It is the responsibility of the RE to track and expedite the review process of submittals, as well as provide notification to relevant parties when the review process is exceeding, or is likely to exceed, the scheduled, stipulated, or reasonable review period. The RE will review submittal progress status reports provided by the contractor. Submittal progress will always be an agenda item at the weekly progress meetings.

The RE will track submittals returned to the contractor and note the reviewer's comments and action required. Resubmittals will be numbered according to the contract documents. The contractor will not perform work without approved shop or working drawings or samples. Upon completion of the work, a copy of the submittals will be included in the contract records.

### 5.6.3 Requests for Information, Substitution Requests, and Deviation Requests

The contractor may request information in addition or as clarification to the information provided in the contract documents. RFIs will be initiated within the Aconex mail module using the 'Request for Information' mail type (refer to Attachment B1-1, POA Contract Forms for a screenshot). The contractor will be instructed to use this RFI format for information or clarification requests, as well as deviation requests, numbering each request consecutively.

The contractor will be instructed to use the RFI forms for information, clarification, or deviation purposes only. They will not be used to offer savings through different materials, processes, or procedures. Such requests are covered in the Substitution Request process. An RFI or clarification may result in a change, which will then be addressed by an RFP issued by the RE (Section 5.9.5). On receipt of an RFI, the RE will review it to determine the appropriate party to prepare a response.

The RE will maintain an RFI Log that will list the RFIs numerically; describe the nature of each RFI; indicate date of receipt, dates to and from the EOR, and date response was returned to the contractor; and include changes or other instructions generated by the RFI. The RFI Log should be reviewed at the weekly progress meetings.

The RE will track and expedite the RFI. The RE will forward responses to the contractor, together with further instructions generated by the response. For example, the RFI may indicate a need to change the design or contract requirements, which will, in turn, generate an RFP.

The RE will post timely RFI responses onto relevant contract drawings used by the CIs to document changes and clarifications that may affect the final work. The RE will review the contractor's as-built documents monthly to verify that RFIs have been posted and changes duly noted.

### 5.6.4 Project Record Documents

Most projects experience minor field changes or require clarifications to the contract documents. These changes or clarifications will not warrant the formal issue of revisions to drawings or specifications, but will be officially recorded for O&M purposes and possible future expansion or renovation of the facility. Upon completion of construction, the PMO will verify that RFIs are referenced in the Record Drawings. The development of Record Drawings will follow requirements of Construction General Conditions, As-Built Documentation. The contractor is responsible for incorporating the changes in a final completed set of drawings for archiving with the as-built drawings.

## 5.7 Schedule Control

The successful delivery of a construction project depends on the quality of the planning provided at the beginning of the project and the diligent monitoring of the construction plan during construction. The RE will monitor that the contractor meets the scheduling requirements in the contract, including form and format, and that contractor changes to the project Critical Path Method (CPM) schedule do not disrupt the overall PAMP MCS.

### 5.7.1 Construction Contract CPM Schedule

Thirty days will be allowed for the contractor to prepare a realistic baseline schedule. It is also important to know as soon as possible which activities will occur early so the RE can plan appropriate oversight. The contractor may be required to submit a preliminary work plan for the first 60 to 90 days of work and a general outline for the remainder of work. Follow-up submittals, including the draft and final baseline schedule and monthly updates, will be submitted per the contract requirements. These submittals will follow the submittal review process. The RE will expedite this review and circulate a copy of the schedule with review comments to the PMO. Updated monthly schedules will be required to be submitted in accordance with the contract.

A second important consideration is that procurement activities, including submittal and approval of shop and working drawings and samples, will be included in the construction schedule. Early preparation and agreement of the required submittals list is important to avoid procurement delays. The RE will request that procurement activities be shown in the schedule, along with supporting information for the procurement durations shown. Particular care will be given to major equipment or material purchases where delays may severely impact the schedule.

The RE will review the schedule to establish that there is a logical sequence of activities, the durations for activities are sensible and achievable based on the known or reasonably expected resources available, and the format meets contractual requirements. The review will not be expected to comment on means, methods, techniques, or practices, except where such are required or prohibited by contract or where they deviate from good and usual construction practices.

The CM, RE, or both will be willing to meet with the contractor during the formulation of the construction schedule and will indicate areas of concern about the logic of the schedule or deviations from contract requirements. It will be permissible to offer advice and suggestions on development of the schedule provided it is clearly understood (and documented in the meeting notes) that the contractor accepts full

and final responsibility for the construction schedule. Advice or suggestions offered by the PMO will not be construed as directions or even recommendations to the contractor in the development of the construction schedule.

### 5.7.2 Progress Schedules

Although the construction CPM schedule is the master plan for completion of work, the day-to-day installation of work by the contractor's field supervisors and superintendents is usually managed by means of short-term progress schedules extracted from the overall construction CPM schedule. These progress schedules normally cover periods from 1 to 4 weeks, with 2 to 4 week look-ahead schedules being standard.

Review of the proposed short-term schedule at the progress meetings will inform the RE of resources that the contractor has allocated to meet the proposed schedule.

### 5.7.3 Schedule Updates and Revisions

The construction schedule must be continually assessed against actual events to determine its continuing practicality. Schedule development and implementation will be in accordance with MASSB GC Article 5.3, Construction Progress Schedule and Schedule of Values, and as provided in the project special provisions.

The schedule review by the contractor and the RE will carefully consider the work completed during that period compared to the planned work. Reasons for differences will be examined, and the impact on subsequent work will be assessed. When targets are exceeded by small amounts, the logic is best left unchanged, and the additional float is maintained to cope with possible obstacles in the following period. Similarly, when targets are missed by small margins, additional work in the following period can often be absorbed without changing durations.

However, major gains or losses of time, major changes to the contract, and changes to fundamental means and methods may require revisions to the contract. PMO staff will be available to the contractor during the examination and development of changes in logic, sequences, means and methods, resource allocation, and other steps to recover, maintain, or accelerate the schedule. Monthly CPM schedule update reviews will focus on contractor progress. Lack of progress or schedule slippage will be conveyed to the POA. The primary aim is maintenance of the contract completion date without additional cost to either the POA or contractor. When completion of the baseline schedule cannot be maintained without additional costs, the RE will discuss means of schedule recovery with the contractor.

Schedule updates and revisions will be maintained on file, together with documented review comments and recommendations. The contractor will be clearly informed that delay in submission of the schedule update will result in a delay in the processing of the payment request.

### 5.7.4 Schedule Communications and Meetings

Early establishment of the reporting relationships between the RE and contractor's staff is important for successful work planning. Meetings will be scheduled for earliest possible development of the preliminary and overall project schedules. PMO staff will be prepared to meet with the contractor's staff to expedite the provision of a Project Baseline CPM Schedule.

Schedule update meetings will be part of the weekly progress meetings. These meetings should be attended by PMO staff, contractor's superintendent, contractor's field superintendents, and superintendents of major subcontractors. When needed, other POA representatives, utilities, and government agencies will be invited to the meetings; their input and cooperation are essential to maintaining the schedule. The RE will include contractor generated progress schedules for each contract to address contractor's work activities with consideration of tenant activity and ongoing port operations. This will be provided as part of the weekly report.

These schedule update meetings are intended to be practical, cooperative working sessions to determine the best possible plan for the ongoing completion of the work. The purpose of the meetings is to determine the most efficient and effective way forward based on the construction knowledge and expertise of each party present, working in a supportive and cooperative team environment. The RE will give special attention to developing and maintaining a team attitude at the schedule update meetings, as well as persuading the contractor to bring the best expertise to the meetings.

### 5.7.5 Procurement Control

Procurement control is normally the responsibility of the contractor. However, the RE will be aware, through monitoring of critical items, if untimely procurement of these items will delay completion of the project. The RE, through the schedule submittal, will require the contractor to provide a list of critical materials needed and the scheduled dates of their delivery. When shop drawings and samples are required, the delivery times will include appropriate review time. The PMO will monitor this list, the delivery schedule, and the return time for reviews at each weekly progress meeting.

For POA-furnished items, the RE will require that the contractor supply adequate notice of when the items are needed and incorporate the dates into the baseline schedule. The RE will verify at the beginning of the project the availability and location of owner-furnished items. The RE will monitor the manufacturing progress of these POA-furnished items and report this progress to the stakeholders as appropriate. The contractor will be instructed to submit a receipt of pick-up or delivery of these items, which will be filed in the project file.

### 5.7.6 Time Extensions

Contractor claims for time extension will be supported by contractual basis and a schedule analysis. The Time Impact Analysis must identify the cause and responsibility as set forth by the contract, the length of the delay, and how the delay impacts the critical path. The RE will determine if a delay is excusable and non-compensable, excusable and compensable, non-excusable, or weather-related and will submit recommendations to the PM. The recommendations will include potential cost and service impacts relating to the time extension.

### 5.7.7 Update of Program Master Control Schedule

The MCS reflects the interaction of PAMP, as well as other ongoing POA projects. Though contractors for each individual project are accountable for their own schedule performance, the PMO Project Controls will input schedule data from each contractor into the PAMP MCS. The monthly schedule updates will help the POA avoid conflicts between competing projects and planned bid and award cycles.

## 5.8 Cost Control

To manage work changes that affect project costs, it is essential to maintain clear, accurate, and detailed document records about the flow of funds and the contractual transactions controlling that flow. The document record will be maintained in an orderly, current, and accessible manner, and will be available for audit at any time during and after the project. Basis of payment and methods of measurement will be in accordance with MASSB as supplemented for individual projects.

### 5.8.1 Progress Payments

Most contracts stipulate that the work will be paid for at regular intervals, usually monthly, during the course of construction. The contract will state the period for payment, timing of submission for payment, required documentation, and amount of retainage. The essential requirements are as follows:

1. Only acceptable installed work will be paid for.
2. The amount remaining to be paid, including retainage, is sufficient to complete the work in the event of default by, or termination of, the contractor.
3. The contractual requirements necessary for payment are fulfilled.

Progress payment applications will be submitted in the form provided in the contract. Progress payments will be in compliance with Construction General Conditions, Advances on Materials, and, Progress Payments.

## 5.9 Change Management

Construction contracts will experience change. The RE will be actively engaged in tracking project occurrences that may lead to changes, communicating trends or occurrences, and communicating with the contractor to determine perceived effects of such occurrences on the project. Change management will follow the requirements of the MOA, as defined in MASSB GC Article 5.21, Changes in the Work.

Change management is addressed in the following topics:

- Contract contingencies
- Risk register
- DRB
- Change orders
- Change order procedures
- Claims avoidance
- Claims
- Claims procedures

### 5.9.1 Contract Contingency

In a construction contract, it is impossible to completely predict the issues that will arise in the field. During construction, unexpected events, differing site conditions, contractors' failures, incorrect assumptions, public demands, and even design deficiencies will require directives to the contractor and payment for additional or changed work.

To preserve the contract schedule, a realistic contingency account may be established and included in the contract by the POA. Prior approval from the POA will be needed to access the contingency (if one is established).

Contingency spending must be for work directly relevant to the completion of the contract and will be added to the contract by change order.

### 5.9.2 Risk Register

As part of preconstruction, the CM AND RE will collaborate on a risk register for each project that will identify; characterize; and, to the extent possible, quantify potential adverse or advantageous events that may affect completion of the project.

The risk register will reflect the actual risk transfer in the contract documents. It will be made clear that if impacts from labor shortages and wages are assigned to the contractor in a construction contract, that

risk will not be characterized as an owner or shared risk event. Similarly, if subsurface condition changes are a shared risk between owner and contractor in the contract documents, the risk register for that item will be configured to show this shared responsibility. At agreed-upon intervals (the desirable interval is at least quarterly), the RE will update the risk register and required contingencies, based on actual events that may have occurred during construction progress.

### 5.9.3 Dispute Review Board

Large contracts, as well as contracts that involve significant subsurface work, such as deep foundations or deep or marine excavations, may benefit from a DRB. A DRB provides a panel of experts, which is independent of the contractor or the owner, to review complex changes at the project level and avoid escalating issues into claims or lawsuits. If a DRB or other oversight committee is established in the contract documents, the CM will be available to present before the DRB on behalf of the owner, and will provide requested available project information to aid the DRB in deciding the facts of an issue.

### 5.9.4 Change Orders

During most construction projects, conditions or circumstances may arise that will cause or create a change to the contract. The construction contract documents will state the conditions or circumstances that constitute changed conditions, as well as the procedures to be adopted to amend the contract to incorporate the changed condition. A change order budget or contingency may be established for each project by the POA, prior to the project going to advertisement. Regardless of the value of this budget, no change order will be considered approved until there is formal concurrence from the MOA Purchasing Officer.

The CM will review change notifications from the contractor (Notice of Potential Claim) and provide recommendations to the POA, DRB, or both. If current work is affected by the situation, the RE will monitor labor, equipment, and materials involved, as well as delays incurred, and inform the POA to advise of cost and schedule impacts involving the change order. The CM will obtain approval from the POA for work to proceed.

A changed condition may occasionally add to, delete, or modify the work of the contract. This may be due to a correction or alteration of the design that requires a change in the work. The design change might be due to differing site conditions, field conditions that were not contemplated in the design development, or conditions that may not have been reasonably foreseen by the contractor. For an agreed-upon no-additional-cost and no-additional-time change order due to a changed condition, the CM will prepare a change order with supporting documentation for review and approval by the POA. In certain circumstances, a series of minor changes may be combined into a single change order.

### 5.9.5 Change Order Procedures

The contractor is required to immediately notify the RE of unforeseen site conditions, engineering errors or omissions, owner-requested changes or other change situations. The RE and CI will be alert to field conditions to anticipate potential conditions for change.

Scope and design required changes will be approved by the POA. The RE will issue a Request for Construction Change Proposal to the contractor requesting the cost and schedule implications of the change. The RE will request a detailed breakout of labor, equipment, and material. Each change order will include a justification cover letter and documentation verifying the amount and method of payment to be made for the work.

If the RE and CM agree with the contractor’s proposal, the CM will forward the proposal to the POA for approval.

Change orders will be developed as defined in Construction General Conditions, Changes in the Work. The Contract Change Order Form (Attachment B1-1) will be used for each contract change order processed for the PAMP.

### 5.9.6 Claims Avoidance

Claims avoidance approach will be started in the design process. Plan, specification, and constructability reviews will be conducted to identify and correct ambiguities in the design documents prior to bid. The more comprehensive and clear the bid documents are, the fewer will be the claims likely to be submitted by the contractor. If a claim situation does develop, the PMO will follow the guidelines as defined in Construction General Conditions, Claims for Additional Compensation.

The RE's first effort at claims avoidance is to require total familiarity by Construction Management staff with the plans, specifications, contract language, site conditions, and generally accepted construction practices. Areas identified as high risk for potential claims will be identified, and contingency plans will be developed to mitigate them.

The contract records are the second major defense against claims, with particular reference to records of planned versus actual installation of the work. A detailed record of the dates of actual installation compared to scheduled installation, and the reasons for the differences (where they exist), will often deter the contractor from submitting a claim that cannot be sustained in face of the RE's document record. The RE's contract records will be factual and nonbiased.

The RE will, when possible, take steps to minimize impacts and provide complete documentation of before-and-after conditions if a potential for claim is recognized. Whenever possible, visibly changed conditions or other conditions that may result in a claim by the contractor will be photographed by the CI as a record of then-current conditions.

Early recognition of potential claims will allow the RE and CI to document current conditions. The RE will identify and classify potential types and causes of construction claims.

### 5.9.7 Claims

A claim includes making a demand for money or services and alleging a right thereto. A claim is usually referenced as a request by a contractor or subcontractor for added compensation (money or time) for work performed outside the scope of the contract, or for work performed within the scope of the contract but under conditions that were neither bid nor anticipated. A contractor or subcontractor will submit a claim only when they believe compensation will not be received for something to which they believe they are entitled, and other available contract remedies have been exhausted. If a particular situation develops into a claim, the process is defined in Construction General Conditions, Claims for Additional Compensation.

### 5.9.8 Claims Procedures

At the Preconstruction Conference, the contractor will be reminded of the contract conditions for the submission and processing of claims. Requirements of timely notification will be clearly addressed, and the contractor will be advised that no relaxation of the requirements will be permitted. Contractor claims will be required to be submitted in writing, with a detailed description of why the contractor believes additional compensation is due based on the contract documents. The contractor will be required to proceed with the work in question even though payment of such work is in question.

As soon as the potential for a claim is apparent, a separate file for that issue will be opened. The CM will acknowledge, in writing, receipt of notice of intent to claim, without a commitment or indication of the CM's opinion about the claim.

The contract language will stipulate the dispute resolution procedures to be adopted on the project. The CM will be familiar with these procedures and be prepared to participate in the various processes. The CM will assemble and review documentation and other evidence relating to the claim, including correspondence, photographs, reports, drawings, contract language, and specifications. A summary report will be prepared with factual analysis citing specific contractual evidence that will support or refute the contractor's position. The CM may provide alternative strategies that will mitigate the cost of the claim. The CM will submit a recommendation for settlement to the POA for review and comment. The CM will notify the contractor of the POA's decision. If the decision involves an increase in time or compensation, the CM will prepare a change order supporting documentation for action by POA.

# 5.10 Quality Assurance and Control

CM staff will work with the contractor's staff to promote a team approach to QA/QC for inspection and testing, with everyone working together toward a common goal of quality construction. Staff will be made aware of the costs of poor quality, the time and cost of rework, and the negative effects on morale of having to remove work that one has worked hard to install. The inspection and testing program will be proactive and seen as only one element in a total quality program designed to assist participants in achieving the desired levels of quality.

The terms QA and QC are frequently confused, and while distinctly different, are often interchanged and used as if they are the same. The following definitions of QA and QC are taken from International Organization for Standardization (ISO) Standard 8402, *Quality management and quality assurance – Vocabulary*, the International Standard for Quality vocabulary (now part of ISO 9000, *Quality management*, paragraph 3.1.5). It is also important to define "Quality" so that it is understood what QA and QC are designed to produce.

- **Quality:** The totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs. In a contractual environment, needs are specified. Needs may include aspects of visibility, safety, availability, reliability, maintainability, economics, and environment.
- **QA:** Planned and systematic actions that are necessary to provide adequate confidence that a product or service will satisfy given requirements for quality. For effectiveness, QA usually requires a continuing evaluation of factors that affect the design or specification for intended applications, as well as verification and audits of production, installation, and inspection operations. Providing confidence may involve producing evidence.
- **QC:** These operational techniques and activities are used to fulfill requirements for quality. QC involves operational techniques and activities aimed both at monitoring a process and eliminating causes of unsatisfactory performance at relevant stages of the quality loop to result in economic effectiveness.

In effect, QC consists of those activities required to meet the specified requirements, while QA consists of those oversight activities that confirm QC is in place and effective.

## 5.10.1 Quality Responsibility

The contractor is contractually responsible for the quality of the work. QA/QC activities performed by other parties in no way invalidate the contractor's responsibility for quality. As such, the contractor will have QA/QC activities in place to verify that quality requirements are met.

## 5.10.2 Quality Assurance

The QA/QC program, under the direction of the RE, will be used to assure the POA of project quality. It will be implemented by trained and experienced CIs capable of documenting the operation and results.

The RE will have available qualified personnel and budget for sampling and testing, survey checks of the contractor's work, and other specialist QA/QC activities.

### 5.10.3 Contractor Quality Control Plan

If the construction contract specifically requires QC to be performed by the contractor, the contractor will be required to provide a contractor quality control plan. The RE will require submittal and approval of the contractor quality control plan before construction work is initiated.

### 5.10.4 Inspection

The RE, ARE, if assigned, and CIs will monitor and verify that the project is being constructed in accordance with the plans and specifications, as well as in compliance with the terms of the contract. The CI has and will exercise the authority to reject both unsatisfactory work quality and materials. Such rejections will be made immediately upon discovery, documented, and referenced to the appropriate plan or specification requirement. Documentation will include color photographs where possible. The RE may issue a Nonconformance Notice to the contractor if corrections are not made in a timely manner. The work will not be directed to stop unless the nonconforming work will be covered up or the correction of the nonconforming work will have a critical impact on completion or performance of the project.

### 5.10.5 Field Inspection Services

POA projects will typically be inspected by a team of CIs working under direction of the RE. The CM will determine the level of effort and the appropriate inspection resources based on the scope and nature of the contract. PAMP contracts will likely require materials testing CIs and may require surveyors.

The CM will establish an RE and CI team that is organized to support the contractor's schedule and provide inspection forces sufficient to meet the schedule. Every effort will be made to cooperate with the contractor so inspection activities will dovetail with the contractor's work. The CIs must be made aware of the daily and weekly schedules provided by the contractor and schedule their own work accordingly.

### 5.10.6 Daily Work Reports

CIs will complete one standard Daily Work Report (DWR) form daily for each contract on which they are working (Attachment B1-2, Daily Work Reports). The DWR will constitute the official daily diary of the project, and will provide a comprehensive record of the day's work, the weather, and other conditions affecting the work. The DWR must be neat and legible, detailed but concise, spell-checked, and must fully describe the work performed, including the following:

- Date of the report
- Weather conditions and temperatures (high and low)
- Rainfall within the last 24 hours of the report
- Ground conditions
- Personnel and equipment onsite, including the composition of the crew
- Work performed
- Work not performed as scheduled
- Instructions given or received
- Problems encountered
- Trends identified in contractor test reports – positive and negative
- Delays and disruptions
- Materials received
- Quantities of work installed

- Visitors to the site
- Other relevant information

Because the DWR is a primary source document for the project, great care should be taken to thoroughly and accurately complete it. The DWR should not be viewed as an exception report, detailing only the negatives, but as a factual report that accounts for construction work and practices observed by each inspector, whether or not it is in compliance with contract documents. It is permissible to commend good work and extra efforts, as well as record deficiencies.

For standard work days when the contractor does not perform work, a DWR should still be submitted documenting that no work was performed and, if known, why (such as weather, or lack of equipment or material).

The CI will provide DWRs indicating work performed, work not performed as scheduled, quantity completed, inspections and tests carried out, rework, nonconformances noted, and other information relative to the quality of the work.

In the event the contractor is performing change order work under a Time and Materials (T&M) force account, the inspector will produce a T&M sheet that accurately tracks the labor, materials, and equipment used on a given day. The T&M sheet will be attached to the DWR and signed by the contractor and inspector. The T&M sheet should include starting and ending times of labor and equipment. It is important to note that equipment must be logged when it is operating, idling, or on standby as there are different machine rates for each situation.

### 5.10.7 Photo Logs

Photo logs will document the nature and progress of the work. Photographs will be taken through the course of the day to add a visual component to the record of daily work activities. Photographs are invaluable in helping to verify if something did or did not happen. The CM staff will follow the procedures defined in the *POA Request for Authorization to Video Tape or Photograph at the Port of Anchorage* (POA 2013).

A photo log template is enclosed in Attachment B1-4.

The contract may indicate specific requirements for preconstruction, progress, and photographic records of the work. The contractor may be given the responsibility for progress photographs, or the POA may contract with a professional photography service. The RE will also maintain the photographic records, using photographs taken by CI staff to document conditions and progress.

### 5.10.8 Offsite Inspections and Specialty Inspections

Offsite inspections and specialty inspections may be required. These will be scheduled with the contractor. The CIs will be instructed to provide details of inspections, tests, sampling performed, and conditions observed. The CIs will note the status of progress in fabrication and production, conformance with the required schedule, and information relevant to potential for delays due to quality or production problems.

Specialty inspections will be performed when required by code or by contract specifications. Specialty inspectors will have the same duties, responsibilities, and limitations as the CIs. In addition, they will be certified to make specialty inspections. Examples include electrical inspectors, certified welding inspectors, and others.

## 5.11 Monitor Quality Management Plan

The CIs will monitor the contractor's compliance with the QC requirements by conducting daily, onsite observations of the contractor's work. In addition, the RE may assist the CIs as needed in supervising a

team of field inspection staff who will prepare written reports, diaries, and other observation records. The RE may also assist the EOR in coordinating periodic review and inspection of the construction work.

### 5.11.1 Testing

The RE will schedule material testing services and specialty inspections. To the extent practicable, CIs will observe testing performed by the consultants and statutory agencies, and document it in the DWR. Test certificates issued will be safeguarded and filed. Materials testing will be conducted in conformance with Construction General Conditions, Testing of Materials, as modified by the contract special provisions.

Particular attention will be given to testing work or materials that will shortly thereafter be covered up or become otherwise inaccessible. Satisfactory testing results will be required so follow-on work may proceed. The testing resources will be organized to be available as the work is installed and to provide test results as soon as reasonably possible.

If the contractor covers work that has not been tested, they will be informed in writing by a Nonconformance Notice (NCN) that such work is not acceptable, no payment will be made for the work, costs associated with uncovering the work will be solely the responsibility of the contractor, and there will be no extension to the contract time as a result of uncovering untested work or work for which a test result was deficient. Costs relating to retesting of deficient work will be charged to the contractor's account.

Offsite testing may be conducted. The RE will request the contractor to provide notice for testing requirements. Test results for offsite testing will be received at the site before material or equipment is incorporated into the work. If the contractor elects to use or install material or equipment without test results being available, they will be notified that consequential costs or delays will be entirely at the contractor's risk and responsibility.

Test results are to be distributed to required parties upon receipt and maintained on file. The EOR should be consulted with about matters arising out of unsatisfactory test results.

Testing frequencies required by the contractor will be determined prior to IFC and will be part of the contract.

### 5.11.2 Offsite Equipment and Materials Testing

If required, the RE will coordinate with the design consultants and contractor to provide oversight of factory and performance testing of equipment and materials at offsite locations or as specified in the construction contract.

### 5.11.3 Material Certifications

The contract may require the contractor to provide certification of material compliance for material before it is incorporated into the work. Material certifications are considered required submittals. Overall acceptance of materials will be conducted in conformance with Construction General Conditions, Product Data, and Materials.

### 5.11.4 Survey Control

POA will establish survey control for each project. The contractor will be responsible for day-to-day construction staking, as well as as-built documentation survey. Survey control monuments are to be protected and relocated if they are disturbed or interfered with during construction activities.

There should be frequent checks on layout to confirm work is accurately installed. The CIs will be instructed to perform regular spot checks of measurements and elevations, which will include pile

locations, foundation elevations, buried utility components, and anchor bolts for structural framing and major equipment.

Surveying will be done in accordance with the industry standard Alaska State Survey practices and the *PAMP Survey Manual*, and as defined in Construction General Conditions, Surveying.

### 5.11.5 Noncomplying Work

The contract records will indicate the following:

- Nonconforming work that was brought to the attention of the contractor
- Corrective action that was taken by the contractor to bring the work into compliance
- Whether the corrective action was, where required, pre-approved by the PMO
- That the corrective action was observed
- That the finished work was re-inspected, retested, or re-assessed and found to be in compliance

The contractor can be verbally notified of minor nonconformances issues, and corrective actions will be observed and documented. Minor defects will be recorded in the DWR. When verbal notification does not produce correction within a short period, a written NCN will be issued. When there is a major noncompliance, a written notification to the contractor will be issued, complete with photographs whenever possible. When a test result does not meet specified minimum requirements, a written NCN for the work will be issued with the deficient test result(s). Written notifications of noncompliance will be recorded in an NCN form.

NCNs must be logged and tracked. The status of NCNs will be discussed at weekly progress meetings. The intent is that nonconforming work be corrected as quickly as possible. The PMO will not approve the amount of work associated with the NCN for payment. Direct costs incurred by the POA caused by nonconforming work will be the responsibility of the contractor.

### 5.11.6 Coordination with Statutory Authorities

The RE will be aware of other statutory authorities' inspection and testing requirements, such as for installation of waterlines and sewer lines. For structures that will have public occupancy, MOA Building Department inspection and testing may be required for life safety systems. The RE is not responsible for the actual inspections, but will coordinate with other statutory authorities when such work takes place within the project site.

## 5.12 Safety and Loss Control

The contractor is solely responsible for safety of the worksite, including work done or materials supplied by subcontractors, consultants, and vendors. This responsibility cannot be delegated to subcontractors, suppliers, or other third parties. The contractor is responsible for complying with requirements for safety, accident prevention, and loss control contained in the construction contract, and for compliance with federal, state, and local ordinances; the *POA Safety Manual*; regulations; and standards applicable to the work. Projects in the United States are subject to the federal Occupational Health and Safety Act.

### 5.12.1 Port of Alaska's Safety Program

The CM staff will comply with POA and PMO's safety programs. Subcontractors within the PMO organization will also comply with their respective company's Health and Safety Policy.

At the Preconstruction Conference, the contractor will be instructed to submit a project-specific Safety Plan that meets the requirements of the POA and the contract prior to beginning field activities. The PMO will be familiar with the contractor's Safety Plan and will comply with the requirements of the Safety Plan when conducting their duties at the construction site.

Safety will be an agenda item at the weekly progress meetings, as safety is the most important aspect of any construction project. Safety issues will be discussed and recorded in the meeting notes.

The CM staff will not attempt to inspect work if there is not adequate and safe access. The contractor will be notified that work installed that is not inspected due to inadequate, unsafe access will not be included for payment.

Copies of accident reports and other reports and statistics will be required from the contractor. The RE may meet with the contractor to review accident reports and determine if additions or amendments to the contractor's Safety Plan need to be instituted.

The RE will receive changes to the contractor's project-specific Safety Plan. In the event of an accident, incident, or emergency, PMO staff will notify the POA as soon as feasible, and the contractor will be requested to provide a root cause analysis of the safety issue to the CM.

### 5.12.2 Environmental Issues

Laws and regulations have been enacted to protect the environment and require cleanup of earlier environmental degradation, as well as to guard the safety of individuals. In the past, many elements that were common in construction or were routinely buried as harmless wastes are now recognized as hazardous materials. There are extensive regulations governing the handling of these materials. The following are of particular concern in construction:

- Asbestos
- Lead-based paints or other materials
- Volatile organic compounds, such as oil, petro-carbons, thinners, adhesives, and compounds that give off potentially damaging fumes
- Other hazardous chemicals

If suspected hazardous materials are encountered that were not expected, the RE will immediately inform the POA and obtain authorization to stop work and secure the area. The RE will contact the POA to get direction on how the situation will be remediated. The RE will safeguard the health of the field staff by having them avoid contact with the suspected hazardous materials until clear instructions are received. The PMO and POA will work with appropriate regulatory agencies on approved remediation actions.

## 5.13 Permits

The CM will review construction specifications relating to permitting with the permitting subject matter experts.

The contractor will be responsible for acquiring and complying with POA permits during construction, including the following POA permits included in Attachment B1-5:

- POA Dig Permit
- POA Hot Permit
- POA Construction Site Form – Storm Water Compliance

## 5.14 Coordinate Utilities Location during Construction

The contractor maintains sole responsibility for arranging and locating utilities in the construction area. The CIs will observe the contractor's efforts to locate existing utilities prior to the start of excavation activities. Overall, work in the vicinity of public and private utilities will be as defined in Construction General Conditions Utilities, and Utility Connections.

The contractor will be instructed to schedule installation of utilities. This process should be regularly checked and expedited. Utility relocations are unique to each contract; details will be in the construction contract documents. The contractor will be required to call for locates prior to working (Alaska 811) and will need to maintain a log confirming those contacts. The RE may periodically review the logs to see that utility company contacts have been made.

Projects may involve the participation of public utilities (for example, water, sewer, gas, telecommunication, and electric) and statutory agencies (for example, federal, state, county, and city governmental agencies). Coordination with these utilities and agencies is an important element in the work and may be critical to the success of the project. It may be necessary to hold separate utility and agency coordination meetings. Depending on the extent of utility and agency involvement in construction, these meetings may be regular or ad hoc. Utility and agency representatives will be encouraged to attend progress meetings when their work or involvement is crucial to schedule and progress.

## 5.15 Public Relations

The Construction Management staff will conform to PAMP Program requirements. Communication requests should be referred to the Port of Alaska.

## 5.16 Tenant Relations

The RE will be involved in tenant communications, and provide an interface between tenants and the contractor and his/her construction workforce. The RE will be familiar with contract requirements relating to the tenants and be prepared to monitor contractor compliance with those requirements. The impact of the project on the local community must also be recognized and reasonable steps taken to mitigate or avoid potential nuisance, disruptions, noise, and irritants. The RE will notify affected property owners of the contract scope, schedule, and start date of construction. During the constructability review, the RE will review the drawings and specifications for loss of access to businesses, and address appropriate comments relating to means for temporary driveways and accesses in the contract documents.

The contractor will be required to notify a tenant in advance of the changes to access. The RE will review the contractor's notification procedures and confirm they comply with contractual requirements.

The contractor will be instructed to notify the RE of complaints received from the public, as well as incidents or disputes that arise from construction operations. These will be communicated to the POA. Consideration for the welfare of the tenants and local community will help prevent incidents and disputes that can affect the progress and cost of the work.

The CM, RE, or both will attend and participate in weekly meetings with POA staff and tenants to convey the contractor’s short- and long-term schedules. During these meetings, the CM, RE, or both will also work to understand POA’s tenant delivery schedules, as well as other traffic concerns internal to the POA and its tenants that may impact the POA.

## 5.17 Subcontractors

The construction contract may state certain requirements relating to subcontracting. The RE will be aware of these requirements, such as qualifications, pre-approval, percentage of work that may be performed by subcontractors, and payments to subcontractors. The CIs and other inspectors will identify subcontractors performing work in their DWRs. The RE will review the DWRs to verify subcontractors have been approved for work.

To the extent possible and permitted by the contractor, subcontractors will be included in planning and scheduling meetings, problem resolution, implementation of changes, and other areas where their expertise and resources can benefit the project. With the contractor’s permission, they can be copied

directly on information, such as meeting notes and resolution of design or field problems. Since subcontractors are contracted only to the contractor, official communications with subcontractors will always be through the contractor.

## 5.18 Labor Standards

The RE is responsible for monitoring and documenting the contractor's actions regarding labor standards. The contractor is responsible for the following:

- Posting a copy of the wage decision
- Posting a copy of a U.S. Department of Labor poster "Notice to All Employees" (DOL WH-1321)
- Posting a Fair Housing and Equal Opportunity poster at the job site
- Submitting weekly certified payroll reports (DOL WH-347), beginning the first week of work on the project
- Reviewing the subcontractor's payroll prior to submission
- Maintaining a complete set of payroll documents for at least 3 years after receipt of final payment
- Documenting apprentice and trainee registration in a certified apprenticeship or training program and that program's certification
- Securing certified payroll statements from subcontractors

## 5.19 Weekly Status Reports for Each Project

The RE will provide weekly status reports (Attachment B1-2) on each construction project. The report will include the following:

- Major events
- Milestones
- Starts and completions of large activities
- Changes
- Claims

It will also include summaries of work completed and time expired, when required. The weekly report will contain observations on concerns and potential problems, as well as some indication of possible effects and remedies. The weekly report will also record positive elements and commendations for contractor's employees who have demonstrated a high regard for quality, safety, and team building, as well as for other parties, such as utility and agency representatives who positively impact the project. When possible, photographs of the project showing work completed that month will be included.

The summary status report will include the following, at a minimum:

- Project schedule status
- Project bid amount versus current amount with change orders
- Potential change orders and their amounts
- Processed change orders and their amounts
- Potential claims and their time and cost impacts

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# Construction Management Services During Contract Completion and Closeout

## 6.1 Approach to Closeout

Contract completion and closeout are critical elements in a construction project. Procedures must be put in place during construction to allow the remaining staff to close out a project efficiently and effectively.

Closeout planning should begin at the commencement of the project. Closeout procedures will normally be specified in the construction contract. The project schedule prepared by the contractor must include closeout activities. These activities must have adequate durations and resources, assigned with logic and interfaces that will permit timely conclusion. The RE will become familiar with closeout procedures at the beginning of the project, then begin developing the closeout plan and procedures, and manage the project with closeout in mind.

The RE will also coordinate with the contractor so that nonconforming work is corrected within a reasonable period of notification during construction. This will avoid a buildup of punch list items at the end of the project.

The RE will institute procedures for documenting receipt of closeout documentation and marking off the checklist. The checklist will indicate partial submittals, the dates submittals are required, and the dates they are actually submitted by the contractor. The RE will not recommend release of final payment until the checklist is complete.

The second phase of closeout documentation involves the transfer of the project document records. The project document records will include files relevant to the project, which will be determined early in the project.

The RE will comply with the PMP's document-filing requirements.

## 6.2 Final Measurement by Surveyors

Final payment should include adjustments, if necessary, to reconcile progress payment quantities with final quantities established by survey. Discrepancies between the contractor's survey data and the POA and PMO's surveyor must be reconciled. The RE and CIs will coordinate the reconciliation. Surveying will be in accordance with the *PAMP Survey Manual*. If required by contract documents, the RE will manage a final field survey, professional survey services, or both, as necessary for final project closeout.

## 6.3 Inventory Spare Parts, and Operations and Maintenance Manuals

The RE will work with the contractor to verify spare parts inventories are delivered and meet contract requirements. If the contract requires, O&M manuals will be provided by the contractor as part of their work product. O&M manual review, approval, implementation, and payment will conform to Construction General Conditions Operations and Maintenance Manuals.

## 6.4 Secure Required Occupancy or Startup Permits

The RE may coordinate the securing of occupancy and startup permits. Should the construction contract require the contractor to secure such permits, the RE will monitor the contractor's efforts and advise the POA as to the contractor's progress.

## 6.5 Collect Warranties, Guarantees, and Lien Releases

The RE will coordinate with the contractor for the submission of required documents. These documents may include warranties, guarantees, lien releases, and other similar documents required by the contract for construction. The intent is to have warranties and guarantees in hand, properly bound at contract completion, and ready to transmit to the POA.

Warranties and guarantees usually become effective on the final completion. However, where equipment and systems are put into operations prior to contract completion, there may be some reluctance on the part of the equipment or system supplier to extend the warranty and guarantee period. During the preparation of the closeout plan, the RE will review the construction contract documents to determine if this issue is addressed. The contract may allow commencement of the warranty and guarantee period from the date of startup on equipment put into early use, particularly if this is for the benefit of the POA. This matter should be raised early in the contract before the contractor has made final purchases of equipment and systems. The contractor will then have the opportunity to negotiate extended warranties and guarantees.

Each warranty and guarantee should be carefully reviewed upon receipt to confirm that it is in accordance with the contract specification. Attention will be given to the fine print so that there are no provisions that will limit or reduce protection for the POA. The RE will reject nonconforming warranties and guarantees, and advise the contractor that final completion and final payment cannot be released until warranties and guarantees are in conformance with the contract. Warranties and guarantees will be transmitted to the POA as part of the contract documentation.

## 6.6 Organized Set of Project Record Documents and As-built Drawings

The RE will work with the contractor to maintain organized project documents and records. These records may include as-built drawings, final cost reports, as-built schedule, acceptance test reports, project communications, and a project closeout report. The RE will prepare a project closeout checklist and the RE will coordinate the receipt and verify the completeness of items outlined in the list. In addition, the RE will assist with collection of information and distribution of the final data to the POA.

## 6.7 Perform Pre-final and Final Inspections

The RE will coordinate inspections with the POA and EOR as appropriate at substantial and final completion, in accordance with the construction contract procedures in Construction General Conditions, Final Inspection. The RE will prepare punch lists of items requiring completion or correction and will follow up to verify punch list items are corrected in accordance with the contract. As part of the inspection process, the RE will issue documents for final completion and acceptance, as well as recommend final payment, release of retention, and release of insurance and bonds.

## 6.8 Contractor's Final Payment

Release of the contractor's final payment usually signifies the completion of the contract and settlement of outstanding issues. The construction contract may stipulate the requirements for release of final payment. The RE will be familiar with these requirements and incorporate them into the closeout plan. The contractor will be educated about these requirements well before contract completion and advised that requirements for release of final payment must be met. Final payment will conform to Construction General Conditions, Final Payment.

The contractor will be instructed to submit final paperwork, along with the final invoice, as soon as possible after the final completion date. The RE will monitor this, and if the final paperwork and invoice are not submitted in a timely manner, the RE will send the contractor a notice requiring that paperwork be submitted promptly. Upon receipt of the final invoice, the RE will recommend a final payment.

The RE will perform a 1-year warranty inspection prior to 1 year after final completion. The POA may be asked to assist.

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# Post-Construction Construction Management Services

## 7.1 Train Port of Alaska Operations Staff

In the final stage of the project, the RE may assist in working with the contractor and design consultants to provide contractually required training of POA Operations staff in a timely manner. This will include submittal and approval of appropriate O&M manuals and other required guidance documents prior to the training. O&M manuals and guidance documents will be submitted in hard copy and electronically, with the number of copies and format as required by the contract prior to the scheduled training sessions. Actual training of staff is expected to be conducted primarily by manufacturer's representatives of equipment or materials supplied to the program. Training should be video recorded onsite, or appropriate training DVDs should be provided by the manufacturer's representative. Training schedules will be established far enough in advance to allow planning for participation by POA Operations staff. Training will not take place until systems are complete and operable.

## 7.2 Provide Startup Assistance

The RE will assist in coordinating startup assistance as appropriate. This process will involve the review of startup plans and manuals submitted by the contractor to verify compliance with the contract documents.

For projects with mechanical and electric equipment that require startup by the contractor, the RE will become familiar with those requirements and will notify the POA of training and testing to be supplied by the contractor for operations startup.

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# References

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Port of Alaska (POA). 2014. *POA Safety Manual*.

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# Attachment B1-1
# Port of Alaska Contract Forms

**Contents:**

1. Submittal Cover Sheet
2. Request for Information/Deviation
3. Substitution Request
4. Certificate of Compliance
5. Partial Payment
6. Final Payment
7. Change Order
8. Program Change Request Form

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# SUBMITTAL COVER SHEET

Project _____ Date Submitted: _____

Contractor _____ Contract No. _____

Subcontractor /Supplier / Manufacturer: _____

Submittal No.: _____ Revision: _____

Submittal Type: ☐ Action ☐ Informational

Submittal Title: _____

Drawing Reference(s): _____

Specification Reference(s): _____

Standards Reference(s): _____

Submittal Description (inclusive of model number, style number, serial number and intended use:

Is this a deviation from Contract Documents (Yes/No)? _____

CQCSM Verification:

Complete either (a) or (b), following:

☐ (a) We have verified that the material or equipment contained in this submittal meets all the requirements specified or shown (no exceptions), and the submittal is required by the Contract Documents.

☐ (b) We have verified that the material or equipment contained in this submittal meets all the requirements specified or shown, except for the following deviations (list deviations; attach a separate sheet as necessary), and the submittal is required by the Contract Documents

CQCSM Signature: _____

Owner's Respresentative Review:

☐ No Exceptions Taken

☐ Exceptions Noted

☐ Revise and Resubmit

☐ Rejected

☐ Review Not Required

Notes (additional notes/comments may be attached):

Owner's Representative Signature: _____

Corrections or Comments made relative to submittals during this review do not relieve the Contractor from compliance with the requirements of the Drawings and Specifications. This submittal is only for review of general conformance with the design concept of the Project and general compliance with the information given in the Contract Documents. The Contractor is responsible for confirming and correlating all quantities and dimensions; selecting fabrication processes and techniques of construction; coordinating his work with that of other trades; and performing his work in a safe and satisfactory manner.

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Request for Information / Deviation Request Aconex Form

Type * Request For Information

To Directory

Cc Directory

Response Required * -- Select --

Subject *

## Details

RFI Type: * -- Select --

Contract/Task: * -- Select --

Capitol Asset: * -- Select --

Specification Reference: * -- Select --

Drawing Reference: * -- Select --

Other Reference:

Cost Impact? (If Yes, Enter Details) * -- Select --

Schedule Impact? (If Yes, Enter Details) * -- Select --

Cost/Schedule Impact Details: 4000

Question/Description of Issue: * 4000

Proposed Resolution: 4000

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Substitution Request Aconex Form

Type *: Request for Substitution

To: Directory

Cc: Directory

Response Required: -- Select --

Subject *:

## Details

Capitol Asset: * -- Select --

Contract/Task: * -- Select --

Drawing Reference: * -- Select --

Specification Reference: * -- Select --

Specification SubSection:

Proposed Substitution * 4000

Justification: * 4000

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**CERTIFICATE OF COMPLIANCE**

Project Name:_____ Contract No._____

I (WE) CERTIFY THAT ALL WORK HAS BEEN PERFORMED AND MATERIALS SUPPLIED IN ACCORDANCE WITH THE PLANS, SPECIFICATION AND CONTRACT DOCUMENTS FOR THE ABOVE WORK, AND THAT:

A. Not less than the prevailing rates of wages as ascertained by the governing body of the contracting agency have been paid to laborers, workmen, and mechanics employed on this work;

B. There have been no unauthorized substitutions of subcontractors; nor have any subcontracts been entered into without the names of the subcontractors having been submitted to the Engineer prior to the start of such subcontracted work;

C. No subcontract was assigned or transferred or performed by any subcontractor other than the original subcontractor, without prior notice having been submitted to the Engineer together with the names of all subcontractors;

D. All claims for material and labor and other services performed in connection with these specifications have been paid;

E. All monies due the State Industrial Accident Fund, the State Unemployment Compensation Trust Fund, the State Tax Commission, hospital associations and/or other have been paid.

_____
(Company Name)

_____ _____
(Contractor's Signature) (Date)

STATE OF ALASKA )
)ss.
THIRD JUDICIAL DISTRICT )

The foregoing instrument was acknowledged before me this _____ day of _____, 20___, by _____ to be the _____ of the company.

_____
Notary Public
My commission expires:_____

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## PARTIAL PAYMENT FORM

Project Name: SHEET 1 of 1
Contractor: Contract No.
Address:
Period Covered by this Estimate: _____ Thru _____ Estimate No. _____ Date:

| SCHEDULE | CONTRACT AMOUNT | PREVIOUS EARNINGS | AMOUNT THIS ESTIMATE | TOTAL AMOUNT EARNED |
|---|---|---|---|---|
| Base Bid | | | | |
| TOTAL | $0.00 | $0.00 | $0.00 | $0.00 |

Original Contract Amount: **$0.00**
Change Order No(s). **$0.00**
Revised Contract Amount: **$0.00**

Notice to Proceed:
Substantial Completion Date:
Original Contract Completion Date: N/A
Revised Contract Completion Date:
Percentage Complete: Actual % Scheduled: %

Total Earnings to Date: **$0.00**
% Retained: Amount Deducted: **$0.00**
Other Deductions: **$0.00**
Previous Payments: **$0.00**

Total Deductions: **$0.00**
Amount Due Contractor: **$0.00**

I certify that the above bill is correct, that payment therefore has not been received, that all conditions of purchase have been complied with, and that State or local taxes are not included in the amount billed.

Contractor's Representative Date

Title:

I certify that I have checked the quantities covered by the estimate, that the work has been performed, that the quantities are correct and that the quantities and amounts are apparently consistent with the requirements of the contract.

Owner's Representative Date

Port Engineer Date

Port Director Date

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## FINAL PAYMENT FORM

Project Name: SHEET 1 of 1
Contractor: Contract No.
Address:
Period Covered by this Estimate: _____ Thru _____ Estimate No. Date:

| SCHEDULE | CONTRACT AMOUNT | PREVIOUS EARNINGS | AMOUNT THIS ESTIMATE | TOTAL AMOUNT EARNED |
|---|---|---|---|---|
| | | | | |
| TOTAL | $0.00 | $0.00 | $0.00 | $0.00 |

Original Contract Amount: **$0.00**
Change Order No(s). **$0.00**
Revised Contract Amount: **$0.00**

Notice to Proceed:
Substantial Completion Date:
Original Contract Completion Date:
Revised Contract Completion Date:
Percentage Complete: Actual % Scheduled: %

Total Earnings to Date: **$0.00**
% Retained: Amount Deducted: **$0.00**
Other Deductions: **$0.00**
Previous Payments: **$0.00**

Total Deductions: **$0.00**
Amount Due Contractor: **$0.00**

I certify that the above bill is correct, that payment therefore has not been received, that all conditions of purchase have been complied with, and that State or local taxes are not included in the amount billed.

Contractor's Representative Date

Title:

The Contractor agrees, upon executing the Final Payment, that it shall

I certify that I have checked the quantities covered by the estimate, that the work has been performed, that the quantities are correct and that the quantities and amounts are apparently consistent with the requirements of the contract.

Owner's Representative Date

Port Engineer Date

Port Director Date

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# Contract Change Order Form

PROJECT NAME _____ CHANGE ORDER NO. _____

CONTRACTOR _____ CONTRACT NO. _____

LOCATION OF CHANGE Port of Alaska DATE _____

You are hereby requested to comply with the following changes from the contract plans and specifications:

| Item No. | Description | Estimated Quantity | Unit Price | Total Price | Add'l Days |
|---|---|---|---|---|---|
| | | | | | |

Reason for Change:

| | | | |
|---|---|---|---|
| Amount of Original Contract | | | |
| Change Orders No. | _____ Through _____ | Addition | |
| Revised Contract Amount | | | $0.00 |
| Addition/Subtraction This Change Order | | | $0.00 |
| **NEW CONTRACT AMOUNT** | | | **$0.00** |

Addition of days of contract time for this Change Order: _____ Calendar Days

Revised Completion Date: N/A

Total of C.O.'s (Incl. This C.O.) $0.00

**This document shall become a supplement to the Contract and all provisions of the Contract shall apply thereto.**

ACCEPTED BY:
CONTRACTOR _____ DATE _____

RECOMMENDED BY:
OWNER'S REPRESENTATIVE _____ DATE _____

RECOMMENDED BY:
PORT ENGINEER _____ DATE _____

RECOMMENDED BY:
PORT DIRECTOR _____ DATE _____

APPROVED BY:
MUNICIPAL MANAGER or
AUTHORIZED DESIGNEE _____ DATE _____

FUND CERTIFICATION BY:
CFO _____ DATE _____

Assembly Memo No. N/A

PORT OF ALASKA
2000 Anchorage Port Road
Anchorage, Alaska 99501

CONTRACT CHANGE ORDER #1
ATTACHMENT “A", Cost

Project Name: [project name]

| Item No. | Description | Quantity | Unit | Unit Price | Total Price |
|---|---|---|---|---|---|
| 1 | Description 1 | 1 | LS | $10.00 | $10.00 |
| 2 | Description 2 | 1 | LS | $20.00 | $20.00 |
| 3 | Description 3 | 1 | LS | $30.00 | $30.00 |
| 4 | Description 4 | 1 | LS | $40.00 | $40.00 |
| 5 | Description 5 | 1 | LS | $50.00 | $50.00 |
| 6 | Description 6 | 1 | LS | $60.00 | $60.00 |
| 7 | Description 7 | 1 | LS | $70.00 | $70.00 |
| 8 | Description 8 | 1 | LS | $80.00 | $80.00 |
| 9 | Description 9 | 1 | LS | $90.00 | $90.00 |
| 10 | Description 10 | 1 | LS | $100.00 | $100.00 |
| 11 | Description 11 | 1 | LS | $110.00 | $110.00 |
| 12 | Description 12 | 1 | LS | $120.00 | $120.00 |
| 13 | Description 13 | 1 | LS | $130.00 | $130.00 |
| 14 | Description 14 | 1 | LS | $140.00 | $140.00 |
| 15 | Description 15 | 1 | LS | $150.00 | $150.00 |
| 16 | Description 16 | 1 | LS | $160.00 | $160.00 |
| 17 | Description 17 | 1 | LS | $170.00 | $170.00 |
| 18 | Description 18 | 1 | LS | $180.00 | $180.00 |
| 19 | Description 19 | 1 | LS | $190.00 | $190.00 |
| 20 | Description 20 | 1 | LS | $200.00 | $200.00 |

**Total Change Order Amount** **$2,100.00**

**CONTRACT CHANGE ORDER #1**
**ATTACHMENT "B", Reasons for Change**

Project Name:

| Item No. | Description | Corresp. Reference | Add'l Contract Days |
|---|---|---|---|
| 1 | **Description 1** | | |
| | Fill in reason here | | |
| 2 | **Description 2** | | |
| 3 | **Description 3** | | |
| 4 | **Description 4** | | |
| 5 | **Description 5** | | |
| 6 | **Description 6** | | |
| 7 | **Description 7** | | |
| 8 | **Description 8** | | |
| 9 | **Description 9** | | |
| 10 | **Description 10** | | |
| 11 | **Description 11** | | |
| 12 | **Description 12** | | |
| 13 | **Description 13** | | |
| 14 | **Description 14** | | |
| 15 | **Description 15** | | |
| 16 | **Description 16** | | |
| 17 | **Description 17** | | |
| 18 | **Description 18** | | |
| 19 | **Description 19** | | |
| 20 | **Description 20** | | |

**Total Additional Days** **0**

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Port of Alaska Modernization Program
Program Management Office

CHANGE REQUEST FORM

**Change Request No:** _____

**Change Request Title:** _____

**Date Initiated:** _____

**Organization Requesting Change:** *(Check a single box)*

| | | |
|---|---|---|
| ☐ Project Management Consultant (PMC) | ☐ Port of Alaska (POA) | ☐ Port User/Tenant (Matson) |
| ☐ Designer of Record (DOR) | ☐ Contractor | ☐ Regulatory Agency |

**Category of Change**: *(Check boxes to indicate the category of change(s))*

| | | |
|---|---|---|
| ☐ Scope | ☐ Quality | ☐ Requirements |
| ☐ Cost | ☐ Schedule | ☐ Documents |

**Detailed Description of Proposed Change:**

| |
|---|
| |

**Justification for Proposed Change:**

| |
|---|
| |

**Impacts of Change:**

| | | | | | | |
|---|---|---|---|---|---|---|
| **Scope** | ☐ | Increase | ☐ | Decrease | ☐ | Modify |
| | | | | | | |

CHANGE REQUEST FORM

| | | | | | | |
|---|---|---|---|---|---|---|
| **Quality** | ☐ | Increase | ☐ | Decrease | ☐ | Modify |
| | | | | | | |
| **Requirements** | ☐ | Increase | ☐ | Decrease | ☐ | Modify |
| | | | | | | |
| **Cost** | ☐ | Increase | ☐ | Decrease | ☐ | Modify |
| | | | | | | |

CHANGE REQUEST FORM

| | | | | | | |
|---|---|---|---|---|---|---|
| **Schedule** | ☐ | Increase | ☐ | Decrease | ☒ | Modify |
| | | | | | | |
| **Project Documents Impacts:** | | | | | | |
| | | | | | | |

**Comments:**

| |
|---|
| |

CHANGE REQUEST FORM

| | | | | | | |
|---|---|---|---|---|---|---|
| **Change Board Recommendation:** | ☐ | Approve | ☐ | Defer | ☐ | Reject |

| **Change Control Board Signatures:** | | | |
|---|---|---|---|
| **Name** | **Role** | **Signature** | **Date** |
| **Todd Cowles, P.E.** | **PAMP Manager** | | |
| **Jeff Bool, P.E., PMP** | **PMC Program Manager** | | |
| **George Newman, P.E., PMP** | **Planning and Design Manager** | | |
| **Kevin Doyle** | **Environmental and Permitting Manager** | | |
| **Sarah Rygh, P.E.** | **Operations Manager** | | |

| **Approving Official Decision and Signature** | | | | | |
|---|---|---|---|---|---|
| ☐ | Approve | ☐ | Defer | ☐ | Reject |
| **Name** | **Role** | **Signature** | **Date** | | |
| **Stephen Ribuffo** | **PAMP Sponsor** | | | | |

# Attachment B1-2
# Daily Work Reports/Weekly Work Reports

**Contents:**

1. Daily Work Report
2. Weekly Status Report

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**Port of Alaska Modernization Program**
**QUALITY ASSURANCE DAILY REPORT**
**CMAR-Contract Purchase Order #2017002425**

| Purchase Order # | | MOD | | Project Name | | Contractor Name | |
|---|---|---|---|---|---|---|---|
| Location | | | | Field PoP per latest MOD | | Report Period | |
| | | | | | | | |
| PMC Field Inspector: | | | | Base Contract Amount: | | Onsite Contractor POC: | |
| | | | | **Current Contract Amount:** | | | |
| Project Percent Complete | | | | Weather Report | | Estimated Manpower On Site | |
| **Contractor** | **QA** | | | **Skies:** Mostly Sunny | | Contractor | 0 |
| | | | | **Temp:** Max 72°F - Min 55°F | | Sub 1 | 0 |
| 0.0% | 2.0% | | | **Wind:** Light Breeze | | Sub 2 | 0 |
| | | | | **Humidity:** - **Precipitation:** 0" | | Sub 3 | 0 |
| **Compiled by:** Stephen Lee | | **Current QA Construction ECD :** | | | | Sub 4 | 0 |
| | | | | | | Sub 5 | 0 |
| | | | | | | **Total:** | **0** |

**PROJECT POCs**

| POC Team / Function / Name | Telephone Number | Email Address |
|---|---|---|
| POA Dir of Ops, Maint & Security | | |
| POA Port Engineer | | |
| PMC Program Manager | | |
| Resident Engineer | | |
| KMJV Superintendent | | |
| KMJV QC Manager | | |

**TODAY'S HIGHLIGHTS**

**MATERIALS TESTING/INSPECTION by KMJV QC**

| Description of Test/Inspection Witnessed | Location | Results |
|---|---|---|
| | | |
| | | |
| | | |
| | | |

**Graphic of Project Progress**

## TODAY'S CONSTRUCTION PROGRESS

| Location | Activity Description |
|---|---|
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |

## QUALITY ASSURANCE

| Assurance Number | Tracking Area of Concern | Date Open | Comment |
|---|---|---|---|
| | #N/A | #N/A | |
| | #N/A | #N/A | |
| | #N/A | #N/A | |
| | #N/A | #N/A | |
| | | | |

| | |
|---|---|
| **SUBMITTALS** | |
| **PERMITS** | |
| **TEMPORARY PAD** | |
| **SOIL IMPROVEMENTS** | |
| **DSM SPOILS MANAGEMENT** | |
| **MOB/DEMOB** | |
| **ADDITIONAL ITEMS**<br>**Safety** | |
| **GENERAL RECORD** | |

**PHOTOGRAPH LOG of CONSTRUCTION PROGRESS**

| | |
|---|---|
| | |
| Caption 1 | Caption 2 |
| | |
| Caption 3 | Capition 4 |
| | |
| Caption 5 | Caption 6 |
| | |
| Caption 7 | Caption 8 |

**END OF QUALITY ASSURANCE REPORT**

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| (Insert Project Title) Weekly Status Report W/E: XX/XX/XX | | | |
|---|---|---|---|
| Project Title: | | FPOP Date: | |
| PO Number/CO: | | Project Location: | |
| Contractor: | | Design Engineers: | |
| Award Amount: | | PMC (Firm): | |
| Award Date: | | Site Engineer: | |

| Project Description (HDR): |
|---|
| |

| CMAR Contract Modifications: | | | |
|---|---|---|---|
| MOD # | Increase ($) | Rev. Contract ($) | Description |
| 01 | | | |
| 02 | | | |
| 03 | | | |

| NTP Date | % Complete (KMJV) (To Date) | % Complete (Scheduled) | % Complete (Actual) (Current Week) | Work Rate Per Week (Average) | % Complete (PMC) (To Date) | QA ECD |
|---|---|---|---|---|---|---|
| | | | | | | |

| CMAR Claims: | | | |
|---|---|---|---|
| Claim | Date Open | KMJV Claim ($)/scope | Status: |
| | | | |
| | | | |
| | | | |
| | | | |

| RFI's/Quality Concerns (critical/schedule issues in RED) | | | | |
|---|---|---|---|---|
| # | Issue | Open | Closed | Status |
| | | | | |
| | | | | |

| Summary of Weekly Construction Activities: | | |
|---|---|---|
| Activity | Progress This Week | Two-Week Look Ahead |
| | | |
| Inspections / Key Events Planned (2-Week Look-Ahead): | | |

| Event | Date | Lead | Attendees / Actions |
|---|---|---|---|
| | | | |
| **Inspections / Key Events Completed for the past 30 days:** | | | |
| **Event** | **Date** | **Lead** | **Attendees / Actions** |
| | | | |

**Quality Concern Comment(s) (critical issues in RED):**

1.
2.
3.

**Snapshot of construction:**

- 
- 
- 
- 

**Schedule Analysis:**

**Insert Caption for Picture Below**

| **Photographs:** | |
|---|---|
| **(Date): (Caption)** | **(Date): (Caption)** |
| **(Date): (Caption)** | **(Date): (Caption)** |
| **(Date): (Caption)** | **(Date): (Caption)** |
| END OF WEEKLY REPORT | |

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# Attachment B1-3
# PAMP Meeting Agenda

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Port of Alaska Modernization Program
Program Management Office

MEETING AGENDA

Program or Project Name

# Meeting Title

PREPARED BY: Insert name

PROJECT: Insert project name/number

MEETING DATE: Insert date

MEETING TIME: Insert time

LOCATION: Insert if applicable

## Distribution and Attendee List:

| | | | |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
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## Agenda:

| | Agenda Topic | Responsible |
|---|---|---|
| | | |
| | | |
| | | |
| | | |

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# Attachment B1-4
# Daily Photo Log

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**Port of Alaska Modernization Program**
**Program Management Office**

# Daily Photo Log

Date: _____

Project: _____

Name: _____

| Number | Location | Date/Time Taken | Direction | Description/Subject |
|---|---|---|---|---|
| | | | | |
| | | | | |
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# Attachment B1-5
# POA Operations Permits

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# PORT OF ALASKA DIG PERMIT

Permit #_____

| SECTION 1 General Information | | |
|---|---|---|
| Date: | Company Excavating: | Working For: |
| Name of Requestor: | Requestor Telephone: | |
| Requestor Signature: | | |
| Site Supervisor / Foreman: | Contact Number: | |
| *Estimated* Start Date / Time: | *Estimated* Completion Date & Time: | |

| SECTION General Description / Location of Work to Be Performed. |
|---|
| |
| |
| |

**SECTION 3** Affected Business' on Port? (Place a check in the box to all that apply.)

| Matson | | Tote | | ASIG | | Delta Western | | Andeavor | | Crowley | | ABI | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| SECTION 4 (Filled out by site supervisor) | | YES | NO | N/A |
|---|---|---|---|---|
| A. | Did supervisor contact and communicate work with affected business(s)? | ☐ | ☐ | ☐ |
| B. | Will work need to be performed on "ship day"? (*Tuesday or Sunday*) | ☐ | ☐ | ☐ |
| C. | Will work be in roadway? (***Contractor*** *is responsible for all traffic control coordination and MOA Right of Way Permits.)* | ☐ | ☐ | ☐ |
| D. | Will work be performed in cargo yards(s)? | ☐ | ☐ | ☐ |
| E. | Is a work plan and aerial view of location attached/included with this form? If no, permit will not be approved. | ☐ | ☐ | ☐ |
| F. | Is the area of proposed excavation/work marked in white or black? (*White for non-snow cover/black for snow cover*) | ☐ | ☐ | ☐ |
| G. | Has the permit requestor contacted Alaska Digline (811) and submitted a locate request? **TICKET NUMBER:**_____ | ☐ | ☐ | ☐ |
| H. | Is there a current SWPPP for this project? (If no, permit will not be approved.) | ☐ | ☐ | ☐ |
| H. | Have all affected utility owners located their utilities and/or verbally declared *no conflict* with contractor conducting the excavation? (Site Supervisor initial in box.) | ☐ | ☐ | Initial here |
| I. | Name of competent person. | | | |
| J. | Have all workers received POA Security Training if applicable? | ☐ | ☐ | ☐ |
| **Site Supervisor Signature:** | | **Date:** | | |

## ↓ FOR PORT OFFICE USE ONLY ↓

| Office | Comments | Approved | Initials | Date |
|---|---|---|---|---|
| Safety Coordinator | | ☐ | | |
| Maint. Supervisor | | ☐ | | |
| Operations Manager | | ☐ | | |
| Port Engineer | | ☐ | | |
| **Deputy Port Director FINAL APPROVAL** | | ☐ | | |

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# Construction Site Form – Storm Water Compliance

Name of Project: _____

Location of Project: _____

Construction Contractor: _____

Estimated Project Start Date: _____

Estimated Project End Date: _____

Submittal of this document equates a letter of non-objection for the project and compliance with the Port of Alaska's (Port) Construction Site Stormwater Runoff Control from New development and Redevelopment Projects Program, the Port's Storm Water Management Program Plan, and the Alaska Construction General Permit (ACGP).

| | | | |
|---|---|---|---|
| 1. | Is the total land disturbance greater than or equal to 10,000 square feet at a single construction site or as part of a plan of common development? | YES | NO |
| 2. | Have appropriate erosion and sediment controls BMPs been chosen and included in the Storm Water Pollution Prevention Plan (SWPPP) | YES | NO |
| 3. | (if required)? | | |
| 4. | Have appropriate BMPs to control discarded building materials, concrete truck washout, chemicals, litter and sanitary waste at the construction site that may cause adverse impacts to water quality been chosen? | YES | NO |
| 5. | Is the project in compliance with the ACGP? | YES | NO |
| 6. | Has a SWPPP for the construction job been prepared? | YES | NO |
| 7. | Was a Notice of Intent (NOI) filed with ADEC? | YES | NO |
| 8. | Have all construction site operators been given appropriate education and training? | YES | NO |

List any other permits required for this project:

_____

_____

_____

_____

By signing this document, there are no objections to the project-specific storm water plan (i.e. SWPPP). The plan is in compliance with the Port's SWMP and the ACGP. If any significant changes are made to the plan, this form will need to be resubmitted.

CONSTRUCTION CONTRACTOR

Name: _____

Signature: _____

Title: _____

Date: _____

PORT OF ALASKA

Name: _____

Signature: _____

Title: _____

Date: _____

LEASEHOLDER REPRESENTATIVE
(only complete if *not* a Port of Alaska project)

Name: _____

Signature: _____

Title: _____

Date: _____

# The Port of Anchorage

## WELDING/BRAZING/HOT WORK PERMIT

Issued by: _____

Date Permit Issued: _____ Time Permit Issued: _____ Expiration Date: _____

Operation to be Performed: _____

Location of Operation: _____

**Special Precautions:**

| TESTING | | | | | | |
|---|---|---|---|---|---|---|
| **Location of Testing** | **Time** | **% LEL** | **% $O_2$** | **ppm $CO_2$** | **ppm H2S** | **Initials** |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

| CHECKLIST | | |
|---|---|---|
| **Item** | **N/A** | **Yes** |
| Surround equipment and operation safe for hot work | | |
| Tank purged | | |
| Extinguisher present | | |
| No combustibles within 35 feet of operation or items protected by covers or removed from area | | |
| No flammables within 50 feet | | |
| Worker has proper protective equipment to perform function | | |
| Safety blankets available | | |
| Flammable gases greater than 10% present additional precaution needed to perform operation | | |
| Fire watch required | | |
| Welding unit inspected | | |
| Adequate ventilation available | | |

The location where the work is to be performed has been examined, necessary precautions taken to provide for worker safety and for the area to be a fire safe environment for performing these functions. Permission is granted for the work to be performed.

Signature of individual performing inspection and issuing the permit:

Signature of individual doing work:

**Permit Close Out**

Job Complete: Yes / No Work area/ equip. cleaned up? Yes / No Time:

Was there a fire watch for 30 minutes after the completion all hot work activities: Yes / No

Signature of individual doing work:

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# Appendix B-2
# Design Management Manual – Design-Bid-Build

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PORT OF ALASKA MODERNIZATION PROGRAM

# Appendix B-2: Design Management Manual – Design-Bid-Build

Revised October 2022

*Prepared for*
Port of Alaska

Jacobs HDR

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# Revision Control Log

| Revision | Date Issued | Description of Changes | Pages Affected |
|---|---|---|---|
| 00 | 12/09/2016 | Initial Release | All |
| 01 | 10/17/2022 | Updated for new organization chart | All |

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# Acronyms and Abbreviations

| | |
|---|---|
| CH2M | CH2M HILL, Inc. |
| DM | design manager |
| DOR | Designer of Record |
| EBS | estimate breakdown structure |
| EDMS | electronic document management system |
| HDR | HDR, Inc. |
| HVAC | heating, ventilation, and air conditioning |
| Jacobs | Jacobs Engineering Group, Inc. |
| MOA | Municipality of Anchorage |
| MSA | master service agreement |
| NMFS | National Marine Fisheries Service |
| PAMP | Port of Alaska Modernization Program |
| PM | project manager |
| PMO | Program Management Office |
| POA | Port of Anchorage |
| POL | petroleum, oil, and lubricant |
| PW | ProjectWise |
| QA | quality assurance |
| QC | quality control |
| QM | quality manager |
| RFI | request for information |
| SDC | Services During Construction |
| TM | technical memorandum |
| U.S. | United States |
| USACE | U.S. Army Corps of Engineers |

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# Introduction and Purpose

This Design Management Manual is a reference document of design management standards and procedures to support the design/bid/build process for the Port of Alaska Modernization Program (PAMP). This manual is intended to provide consistent guidelines and procedures for use by parties performing PAMP design and design management services.

This manual provides program background information, defines design team roles and responsibilities, defines the design process through each stage, defines the requirements for design quality assurance (QA) and quality control (QC), outlines the communication requirements during the design process, defines the requirements for project documentation, and summarizes the change management process. The role of the designer during the bidding and construction phase is also included in this manual.

For the purposes of this manual, design/bid/build begins with the owner selecting a designer using a qualification-based selection process. When the designer has completed the design to the satisfaction of the owner, an invitation to bid for construction services is issued. During construction, the Designer of Record (DOR) provides Services During Construction (SDC) on behalf of the program.

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# General Project Information

## 2.1 Goals, Requirements, and Program Description

The POA has established overall project goals that provide the major objectives for the PAMP, as follows:

- The PAMP will modernize the Port in multiple phases while remaining in operation. The project will replace the four main terminals (POL1, POL2, T1, and T2), demolish the old terminals, stabilize the North Extension and relocate the POA Administration Building.
- Provide a modern, safe, and efficient regional port that stimulates economic development and the movement of goods into and out of the Port of Anchorage (POA).
- Allow for future growth of the POA.
- Protect the environment, and promote sustainability.

Accordingly, the planning and design efforts under the PAMP will seek to meet the following requirements:

- The POA have identified measures of success for the PAMP, including the following four items, which essentially fall into the categories of cost control and schedule control:

1. Complete the modernization program on time and within budget.
2. Create an PAMP design that maximizes the use of available funding.
3. Achieve the best value for the POA with new and improved infrastructure.
4. Avoid litigation; confirm that there are no unsolvable issues through planning, design, and construction.

## 2.2 Background Information, Physical Environment, and Constraints

The POA is located in the Knik Arm of upper Cook Inlet with the existing terminal locations within Tract H, Port of Anchorage Subdivision, Anchorage, Alaska. The POA provides critical infrastructure for Anchorage and a majority of the State of Alaska, with over 74 percent of the nonpetroleum (food and other commodities) and 95 percent of the refined petroleum shipments into south-central Alaska imported through the POA (McDowell Group, 2015). The majority of consumer goods arrive by container; however, critical POA functions include providing transportation and distribution of petroleum, oil, and lubricant (POL) products, including the jet fuel and much of the gasoline used in those portions of Alaska west of Cordova. The POA also serves as the transportation hub for most Portland Cement used in Alaska. In addition, the POA is designated as a strategic seaport by the U.S. Department of Defense, supporting the transit of deployable military equipment.

The existing marine-side infrastructure includes three general-purpose cargo container terminals, two of which are supported by three 38-gauge container cranes, and the third configured with trestles to support roll-on and roll-off operations. There are also two POL terminals. Because of their age, condition, design, and functional obsolescence, the PAMP was established to replace the aforementioned marine facilities as soon as practicable. Moreover, the earthen-filled sheet pile structure referred to as the North Extension, a partially constructed artifact of the previous Port of Anchorage Intermodal Expansion Project, has been determined to be structurally unstable under design static and seismic loads and must be modified. Finally, support facilities and infrastructure at the POA are in need of repair or replacement.

A subarctic location, the POA is located in a harsh climate with high winds, low temperatures, abundant snowfall, and limited daylight during the winter season. The harsh climate provides significant challenges to building envelope design, and the climate combined with limited seasonal daylight produces challenges to construction productivity. The POA's marine environment includes tidal swings up to 40 feet and currents from flood and ebb tides that routinely run from to 2 to 4 knots. This environment may contain significant pan ice present from late November through early April.

The POA ship berths experience significant siltation that routinely threatens spring mooring operations until the commencement of the annual dredging operations under the U.S. Army Corps of Engineers (USACE) Federal Dredging Project, which typically begins in April.

Challenging seismic and geotechnical conditions are present at the POA site and must be addressed in infrastructure considerations.

The National Marine Fisheries Service (NMFS) has listed the Cook Inlet beluga whale population as endangered under the Endangered Species Act (73 Federal Register 62919). Future construction activities associated with the PAMP have the potential to disturb or displace small numbers of these marine mammals. Specifically, proposed construction activities may result in Level B harassment (that is, behavioral disturbance) from underwater sounds generated from impact and vibratory pile driving.

## 2.3 Permitting

During the permitting process for the PAMP, the POA will coordinate with stakeholders and regulatory agencies at the federal, state, and local level to comply with applicable regulations. The resulting permits and approvals will enable the POA to build, manage, and operate one of the state's most critical pieces of infrastructure while acting as a good steward of public safety and the environment. The design team will provide support for permitting.

Anticipated environmental permitting documents include biological assessments, incidental harassment authorizations, essential fish habitat evaluations, archeological and historical evaluations, and environmental assessments. The design will be depicted on schematic drawings, geographic information system exhibits, and other media to facilitate permit review and agency and stakeholder evaluation.

The environmental permitting process is completed by meeting and complying with statutory timelines for public and agency review. Comments received during the public review process will be adjudicated and adjustments to the proposed design solution that are brought to light during the process will be considered. Ultimately, approved permitting documents and authorizations will allow for the implementation of the PAMP design strategies. Permit applications with supporting design documents will be submitted through the PMO and POA to the appropriate authority having jurisdiction.

The DOR will apply for and obtain permits required to complete the design deliverables and confirm constructability (such as building safety, utility connections). The DOR will also assist PMO permitting applications as they may relate to the design solution. The construction contractor will be responsible for permits required for construction.

# Design Team Roles and Responsibilities

## 3.1 Program Management Office

As set forth in a master service agreement (MSA), Jacobs Engineering Group, Inc. (Jacobs) and subconsultant HDR, Inc. (HDR) lead the Program Management Office (PMO) role for the POA. The PMO will complete the following tasks:

- Advise the POA on various port facility planning, design, and environmental requirements in key subject areas, including navigation, berthing and mooring, sedimentation management, and seismic design and performance criteria. This will include identifying data gaps and performing analysis to validate planning and design assumptions, and identifying and closing gaps in design and performance criteria previously developed for the program.
- Advise the POA on various regulatory permit processes and requirements, and include application and processing times in the master schedule, which involves, at a minimum, the following key tasks:
  - Identifying data gaps, and performing studies or other work needed to begin design and secure permits
  - Developing a Test Pile project and a supplemental environmental assessment
- Facilitate the application process for permits the POA must obtain to comply with requirements of regulatory agencies and authorities having jurisdiction, including USACE, NMFS.
- Evaluate various delivery methods for each project, and recommend a delivery method best suited that includes the following:
  - Assisting the POA with selection of, and contracting with, DOR firms
  - Developing the necessary procurement documents to secure these services
- Provide existing information and technical standards to the selected delivery team members.
- Manage and monitor the work of DOR teams, as follows:
  - Distributing design submittals and RFIs to stakeholder reviewers
  - Scheduling and managing meetings to discuss the review comments
  - Performing peer reviews of design submittals, including plans, specifications, and cost estimates, for completeness, accuracy, and consistency with the project plan
  - Reviewing the team's progress against the project schedule, and recommending corrective action as needed
- Provide technical expertise when needed to advise the POA on key decisions during design.
- Provide value engineering reviews when required by the POA.
- Develop a logical sequence of construction procurement packages that keeps the Port operational and in regulatory compliance during construction.

In addition, the PMO will manage requirements, scope, and quality as follows:

- Capture and document stakeholder requirements and verify these have been approved by the Municipality of Anchorage (MOA) before they are included as scope elements.

- Confirm that the DOR will provide for a minimum 75-year design life, without impressed current cathodic protection systems.
- Verify that the DOR properly applies seismic design considerations in accordance with the latest version of the *Port of Alaska Modernization Program Seismic Design Manual*.
- Manage design project issues, scope changes and product scope changes using the process described in the PAMP Program Management Plan.
- Verify that design project interim and final products undergo QA/QC reviews in accordance with the PAMP Program Management Plan.
- Inform, and consult with, required regulatory agencies regarding the works and likely construction techniques that will be required to build the individual design subprojects, and produce information to the quality and on the schedule required to support associated permitting activities.
- Confirm that the designs are coordinated with the POA operational requirements for ship and cargo operations.

## 3.2 Design Team

### 3.2.1 Project Manager

The design team Project Manager (PM) will have responsibility for interfacing with the PMO Design Lead and the POA to develop the design work scope, schedule, and budget for the project. The PM will be responsible for assembling the project team, managing scope, schedule, and budget and ensuring that required resources of the design team are available to complete the project. The Project Manager will be the main point of contact with the PMO and the POA and will manage aspects of the design contract including changes to the work scope, project schedule and budget. The PM has overall responsibility to confirm the design meets the project requirements and that a quality work product is completed and delivered to the POA.

### 3.2.2 Design Manager

The Design Manager (DM) has responsibility for the design content, design quality, and adherence to the budget and schedule. The DM works with the PM to select the appropriate design team members and to develop the project instructions that provide guidance to the design team over the course of the design effort. The project instructions define the project scope, schedule, budget, communication paths, design tools, and documentation requirements. They also define the QA/QC process and other special information the team members will need to successfully execute the project. The PM and DM can be the same individual.

The DM is responsible for leading the effort to estimate the resources required to complete the design in the required time frame and to meet the design budget. Project task leaders and lead designers assist in this effort. If during the course of the work the DM believes that the project schedule or budget are not sufficient to complete the work, the DM will immediately notify the PM.

During the course of the design, the DM leads internal and external meetings to review project progress, helps to resolve design issues, tracks design budgets and progress against schedule and documents changes to the work scope through the change management process.

The DM provides progress updates on the design to the PM and the PMO. The DM is also responsible for tracking the design QC process and working with the QC manager to confirm that resources are available

to implement the QC process and that QC documentation meets the requirements of the PAMP Quality Management Plan.

The DM is responsible for coordinating design phase review meetings, documenting the issues raised during the review process and working with the PM and design leads to resolve each of the issues. At the end of the design process, the DM is responsible for confirming that contract-required design deliverables have been completed and are delivered to the PMO for construction bid preparation.

During the period of construction, the DM coordinates SDC, including Requests for Information (RFI), submittals, and Deviation Requests. The DM also coordinates field inspections for the various elements of the work that are required to be performed by members of the design team.

### 3.2.3 Design Leads (Designers of Record)

Discipline design leads report to the DM and PM and are responsible for the design efforts and products of their specific discipline. They work with the DM at the beginning of the design process to develop the budget for their design effort and to assemble the resources required to complete their work. At the beginning of the design process, they estimate the number of drawings that will be required to convey the design information to the owner, review agencies, and the construction contractor. They also assemble an outline list of specifications that will be required to convey the design intent and a list of the codes and standards that must be followed in the design effort

They are responsible for reviewing the work developed in their discipline for the design and for coordinating the QC effort for their design product. They must approve selections of materials and equipment. They confirm that project protocols are followed and that design documentation for the work is in order and in accordance with the project instructions.

The design leads also serve as the DOR for their discipline and are responsible for sealing and signing the final Issued for Construction drawings and specifications.

In addition, the design leads are responsible for the following tasks:

- Carry forward the individual design packages required to advance the PAMP to 100 percent design complete and ready for construction.
- Accept professional responsibility to comply with relevant laws, regulations, standards, and contract requirements.
- Review those work products developed by the PMO or others in predecessor planning and concept design actions, and address technical concerns within the aforementioned work products during the course of the work.
- Apply best engineering practices in the development of the design.
- Apply life-cycle cost consideration in design and material selections, documenting this analysis.
- Apply sustainable design considerations throughout product development, documenting this analysis.
- Perform constructability reviews and analysis during design development.
- Make timely communications regarding design issues with the DM and PM, and work with the DM and PM toward their successful resolution.
- Develop design schedules in cooperation and coordination with the DM and PM, providing realistic schedules that incorporate adequate time for design reviews and QA/QC processes.
- Record decisions during design meetings through assisting in the development of meeting minutes.

- During construction, respond to RFI's and review submittals for their area of design responsibility.

The PM, DM, and Design Lead of a specific discipline may be the same individual.

### 3.2.4 Quality Manager

The quality manager (QM) is selected by the DM and PM and is responsible for managing the overall QA/QC process during the design process. The QM provides the documentation requirements and templates for the QC process, selects the senior QC reviewers for each discipline with the help of the DM, sets the QC review discipline and cross-discipline coordination meetings, and reviews the QC process to confirm that QC efforts have been coordinated between the design leads and the senior reviewers and that documentation is in place. It is also the QM's responsibility to put into place the process for dispute resolution, in the event that design personnel and review personnel cannot reach an agreement over a specific design issue.

The QM should not also be the PM, the DM, or a Design Lead.

# Design Process

## 4.1 Project Initiation Meeting

The project initiation meeting is facilitated by the PM and DM and is the first step in the design process. It is intended to provide the design team with the following: project design objectives, design schedule and budget, owner's expectations including construction budget information, communication protocols, documentation requirements, and design platforms and tools. At a minimum, participants should include a PMO Design Lead, the design team's PM and DM, the design leads, and the design QM. During the course of the meeting, the project scope definition and design concept should be fully understood by each of the participants, as well as the schedule for design completion. At this time, the design leads will discuss their basic approaches to the design task and their concept. The PMO may raise concerns about the design concept, code issues, or other technical issues.

Proir to the project initiation meeting, the DOR team will be provided with the POA estimate breakdown structure (EBS), estimate value, and risk register. **Deviations from the format and structure of these documents must be approved in advance.** These documents are intended to provide guidance for the Design team's use and to facilitate efficient cost and risk management process throughout the design.

### 4.1.1 Deliverable

The project initiation meeting deliverable will be a technical memorandum (TM) that defines the project scope and budget, provides a risk register, summarizes the design concept, identifies the key team members and communication protocols, defines the EBS, and defines the project schedule complete with project deliverable milestone dates. Significant project challenges or code and environmental issues will be documented in the TM, and it is to be approved by the PMO Design Lead and the design team's PM, DM, and design leads.

## 4.2 35% Design

The 35% design phase is intended to take the design to a level that solidifies the concept and alignment, defines the major features of work, and defines the codes and standards with which the remaining design effort will comply. 35% designs must incorporate consideration for the requirement that POA operations must be maintained throughout construction. Preliminary traffic control and phasing plans will be developed to support integration of POA operations. Care should be exercised to verify compliance with relevant prescriptive design requirements established by the PMO, governing codes, and regulatory requirements. Depending upon the circumstances, design charrettes and value engineering workshops may be appropriate to support the development of the 35% design. No significant changes to the facilty design should occur past this design stage. At this stage, the design level is generally defined as a 35 percent design package.

### 4.2.1 Deliverables

- Design Narrative describing the elements of the design package, including major system components and material selections, for each discipline
- Workplans for proposed field investigations and laboratory testing if required by the DOR
- QC Review/comment forms
- Outline of Specifications
- Draft Safety in Design Analysis

- Permit List
- Updated Project Schedule and Schedule Narrative
- Prelimanary Construction work plans that contain, contractors means and methods for executing the work for the excavation/ sheet removal/ soil improvements/ bedding material, filter rock, and armor stone placement, dredging dump plan, dredging plan, equipment placement for marine work, which includes anchor plans indicating layout of anchors to secure floating equipment. Each anchor will have latitude and longitude locations identified as well as equipment locations (that is, barge corners identified).

Drawings include:

- Civil
  - Title Sheet and Index
  - Project location and Vicinity Maps
  - Project Symbols Legends and Abbreviations Sheet
  - General Site overview plan
  - Geometric Layout Plan
  - Grading and Strom Drain Plan
  - Demoliton and Removal Plan
  - Typical Section Sheets
  - Composite Utility Plan
  - Exisiting Site Topographical Survey and Utilties Plan
  - Special Project Phasing Requirements
  - Project site plan, including topography, borehole locations, egress and circulation, utility routing, parking and snow storage areas, fencing and site security features, and site drainage features
- Architectural
  - Facilty floor plan, indicating overall dimensions and individual room sizes
  - Facility elevations, indicating fenestration/glazing and exterior wall/roof material
  - Building cross section, indicating major structural elements and building heights
- Marine Structural
  - Construction phasing plans
  - Demolition plans
  - Wharf and trestle geometry plans
  - Typical wharf and trestle sections
  - Wharf foundation plan
  - Trestle foundation plan
  - Typical pile details

### 4.2.2 Internal Review

Before submission to the PMO, a QC review will be conducted and appropriately documented. At this design process stage, senior reviewers in each discipline will be engaged to maintaindesign compliance with the project concept and with applicable codes and standards and to confirm that the overall project budget is considered according to a fit-for-purpose design. Interdisciplinary communication will be required at this stage, but a thorough cross-discipline design review is not required.

### 4.2.3 Program Management Office Review

The review by the PMO at this stage should verify that the concept proposed meets the needs of the project and that proposed site civil elements, floor plans, architectural elements, building envelopes, structural systems, and mechanical and electrical systems proposed are acceptable. Specific comments will be developed and forwarded to the design team for adjudication. Responses will be incorporated into the 65% design package.

## 4.3 65% Design

The 65% design stage should produce a well-developed design package for each discipline adequate to produce an ASTM E2516-11 Class 2 construction estimate. A complete drawing list for each discipline should be available at this stage (only some of the drawings will be in progress at this time), and the majority of required calculation packages for each discipline should be complete. In addition, a draft of each of the outline specifications listed in the 35%t design should be available for review at this stage. This level of design is generally referred to as a 65 percent design completion.

### 4.3.1 Deliverables

- Design Narrative update describing the details of specific elements of the design package, including major system components, material selections, management of soil treatment details, management of sheetpile demolition details, soil handling details, management and disposition of salvage sheetpile meterials, management and disposition of soil treatment swell
- QC Review/Comment Forms
  - Draft Specifications
  - Draft Safety in Design Analysis
  - Constructability Review
  - Fast Lagrangian Analysis of Continual Model Analysis results verification and soil improvement criteria
  - Civil and Coastal Engineering Calculations
  - Permit List and Status
  - Updated Project Schedule and Schedule Narrative
  - Updated construction work plans that contain, contractors means and methods for executing the work for the excavation/sheet removal/soil improvements/bedding material, filter rock, and armor stone placement, dredging dump plan, dredging plan, equipment placement for marine work, which includes anchor plans indicating layout of anchors to secure floating equipment. Each anchor will have latitude and longitude locations identified as well as equipment locations (that is, barge corners identified)
  - GMP estimate and variance analysis from the 35% Class 3 estimate

Drawings:

- General
  - Title sheet and Index
  - Project location and Vicinity Maps
  - Project Symbols Legends and Abbreviations SheetGeneral Site overview plan
  - Geometric Layout Plan

  - Schedule of drawings
  - Code summary

- Civil
  - Haul routes
  - Demoliton and Removal Plan
  - Grading and Strom Drain Plan
  - Strom Drain Profile sheets
  - Soil improvement plan and section
  - Drying Bed layout
  - Typical Section Sheets
  - Construction Details
  - Composite Utility Plan
  - Exisiting Site Topographical Survey and Utilties Plan
  - Project Construction Phasing plan
  - Survey control
  - Excavation and Grading plans and sections
  - Utility plans and profiles
  - Utility details
  - Miscellaneous details
  - Erosion and sediment control plan
  - Landscaping plans and details

- Architectural
  - Legends, symbols, wall types, and abbreviations
  - Floor plans
  - Reflected ceililng plans
  - Roof plans
  - Building elevations
  - Building sections
  - Wall sections
  - Details
  - Door and hardware schedules
  - Exterior material and color schedule
  - Interior elevations
  - Interior details and accessory schedules
  - Finish schedules
  - Color boards if requested by PMO

- Structural
  - Structural general notes including requirements for special inspections
  - Structural design criteria
  - Structural site plan
  - Structural phasing plans
  - Demolition plans
  - Deck level plans
  - Pile foundation plans
  - Abutment plan
  - Abutment sections and details
  - Wharf typcial sections
  - Trestle typical sections

  - Pile schedule
  - Typical pile details
  - POL pipe supports
  - POL hose derick/loading arm
  - Crane rail details
  - Crane stowage details
  - Breasting dolphin plans
  - Breasting dolphin elevations
  - Mooring dolphin plans
  - Mooring dolphing elevations
  - Catwalk plans
  - Catawalk elevations
  - Bollard plan and details
  - Capstain plan

- Fire Protection
  - One-line diagram and legend
  - Building fire sprinkler floor plan
  - Details
  - Dock fire protection plan
  - Dock fire protection details
  - Fire alarm and mass notification legend, riser diagram, and functional matrix
  - Fire alarm floor plan

- Building Mechanical
  - Symbols, legends, and abbreviations
  - Plumbing underfloor and floor plans
  - Plumbing riser diagrams
  - Plumbing detatils and schedules
  - Heating, ventilation, and air conditioning (HVAC) floor plan
  - HVAC piping plans
  - HVAC schedules and details
  - Heating system schematic
  - Control system schematics and sequence of operations

- POL Mechanical
  - Symbols, legends, and abbreviations
  - Mechanical deck plan
  - Mechanical sections and details
  - Flow diagrams and isometrics
  - Piping details

- Electrical
  - Legend and abbreviations
  - Site plan
  - Power plan
  - Lighting plan
  - Enlarged plan electrical room
  - Details
  - Site power one-line diagram
  - Dock/crane/POL power one-line diagram

- Luminaire schedule
- Connection schedule
- Panelboard schedules
- Communication room plan
- Communication details
- Security/surveillance plan
- Heat trace plan and details
- Backbone diagram

### 4.3.2 Internal Review

A QC review will be conducted and appropriately documented. The 65% design stage internal reviews require complete drawing, specification, and calculation reviews in each discipline, as well as a formal cross-discipline review to confirm that designs are compatible across the disciplines and to minimize omission of systems or items to support other discipline requirements.

### 4.3.3 Program Management Office Review

The PMO will conduct detailed technical review of the design documents for technical content, constructability, and cross-discipline coordination issues. Specific comments will be developed and forwarded to the design team for adjudication. Responses will be incorporated into the 95% design package.

## 4.4 95% Design

The 95% design package will incorporate previous review comments and is the last stage for PMO review. It will include drawings listed in the 65% design package developed to the 95% completion level. At this stage, only minor details will require completion, as this deliverable will be considered construction ready. A complete drawing and specification package will be included in this design package. Project definition will be adequate to produce an ASTM E2516-11 Class 1 construction estimate.

### 4.4.1 Deliverables

Design Narrative describing the elements of their design package, including major system components, material selections:

- QC Review/Comment Forms
- Complete Drawings
- Complete Specifications
- Safety in Design Analysis
- Constructability Review
- Permit List and Status
- Calculations
- Updated Project Schedule and Schedule Narrative
- Updated Construction work plans that contain contractors means and methods for executing the work for the excavation/sheet removal/soil improvements/bedding material, filter rock, and armor stone placement, dredging dump plan, dredging plan, equipment placement for marine work, which includes anchor plans indicating layout of anchors to secure floating equipment; each

anchor will have latitude and longitude locations identified as well as equipment locations (that is, barge corners identified)

- GMP estimate and variance analysis from the 65% Class 2 estimate

### 4.4.2 Internal Review

The internal review of the 95% design package should include a complete QC review by the QC team to confirm that final design details are correct and constructable. At this stage, it is also necessary to complete a full cross-discipline design review to minimize the possibility of conflicts and omissions. Full documentation of the cross-discipline design process and the senior QC review must be completed by the QM.

### 4.4.3 Program Management Office Review

The PMO review at this stage should focus on ensuring that previous PMO design review comments have been addressed and that the design package is ready to be issued for construction. Specific comments will be developed and forwarded to the design team for adjudication. Responses will be incorporated into the Issued for Construction design package.

## 4.5 Issued for Construction

The Issued for Construction package will incorporate previous review comments. It will address comments from previous submissions and documents will be signed and sealed by the DOR.

### 4.5.1 Deliverables

- Final Design Narrative
- Final QC Review/Comment Forms
- Sealed Drawings
- Sealed Specifications
- Inspection and Testing Plan for materials incorporated into the work, and to show conformance to the requirements of permits, plans, specifications and this document
- Safety in Design Analysis
- Final Constructability Review
- Final Permit List and Status
- Updated Project Schedule and Schedule Narrative
- Updated Construction work plans that contain contractors' means and methods for executing the work for the excavation/sheet removal/soil improvements/bedding material, filter rock, and armor stone placement, dredging dump plan, dredging plan, equipment placement for marine work, which includes anchor plans indicating layout of anchors to secure floating equipment; each anchor will have latitude and longitude locations identified as well as equipment locations (that is, barge corners identified) (Note: Contractor will be required to submit workplans in accordance with permitting requirements found in the permitting matrix)
- GMP estimate and variance analysis from the 95% Class 1 estimate

### 4.5.2 Program Management Office Review

The PMO review at this stage will focus on ensuring that previous PMO design review comments have been addressed and that the design package is ready to be issued for construction.

## 4.6 Services During Construction

During the construction phase of the work, the design team will engage in the following tasks:

- Respond to RFIs from the construction team. This flow of information will serve to clarify design intent and details provided on the drawings and specifications, respond to changes in the design requested by the construction team, and respond to challenges posed by changed conditions in the field different than assumed at the time of initial design.
- Review and approve submittals and shop drawings. The design team will review material and equipment submittals for consistency with the design intent and the specifications, approve changes in materials and equipment that differ from that specified in the design if the change meets or exceeds the design intent, and review shop drawings of structure and equipment for code compliance and compliance with the design intent and geometry of the project.
- Perform construction observations. The design team will perform periodic reviews of the construction in progress to verify that materials and workmanship are consistent with the design intent and required long term performance of the project. If discrepancies are noted in an element of the project by the design team during periodic observations, the project and construction managers will be notified immediately so that the issue can be resolved prior to execution of further stages of construction. At completion of construction, the design team will participate in a final inspection of the work to verify the project is compliant with the design drawings and specification and is ready to be turned over to the owner.
- Record drawings. The design team will receive the red-line project drawings marked up by the project construction engineer and produce the final set of record drawings for the project. The design team will verify that the changes to the original Issued for Construction set are consistent with the RFI and submittal logs and also consistent with what they observed in the field during periodic observations.
- Certificate of Completion. The DOR will provide a Certificate of Completion, indicating that the work has been performed in accordance with the construction documents.

# Quality Assurance and Quality Control Process

Quality requirements are detailed in the Quality Management Plan found as part of the Project Management Plan.

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# Communication and Reporting

## 6.1 Communication Protocols

Communications between the PMO and the design team should be directed through the design team's PM. The PM may decide to transfer this line of communication to the DM for issues related solely to the design technical content. Communications that change design direction or that have impacts on design elements should be documented in writing through TMs, meeting notes, or phone conversation records.

Communications to transfer PMO review comments to the design team will follow the protocols developed by the design PM and typically will use the documentation system selected for the project.

## 6.2 Review Meetings

Each review meeting will be conducted by the PM or DM and will be documented by a meeting summary that includes the following information:

- Design stage of the review meeting
- Meeting date
- List of attendees
- Itemized list of issues discussed and outcomes
- Action items and deadlines

The draft meeting summary will be reviewed by the PM and the DM and then distributed via the project electronic document management system (ProjectWise [PW]) for review and comment by meeting attendees. The final meeting summary will be issued by the PM within 5 business days of the meeting.

## 6.3 Progress Reports

Most significant design efforts are of a duration to warrant monthly progress reports. Progress reports should be developed by the PM in conjunction with the DM and should provide the following information to the PMO:

- General narrative of design work accomplished during the reporting period by discipline
- Identification of items that could affect the project budget or schedule
- Identification of technical issues that require resolution
- Identification of changes in personnel assignments that could affect project schedule or communication paths
- Design schedule update: if the updated schedule indicates there is a schedule slip, this should be accompanied by a narrative that describes the reason for the anticipated delay and what actions can be taken to bring the design process back to the original schedule
- Progress report: if the design effort is being conducted on a time and expense basis, the progress report should provide a summary of the expenditures to date, detailed to the design discipline level, as well as a forecasted expenditure effort to complete the design on a discipline-level basis
- Narrative outlining the expected design progress duing the coming reporting period

Progress reports will be signed by the design team PM.

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# Project Documentation

## 7.1 Information Sharing

The electronic document management system (EDMS) selected for this program is Aconex. Aconex will be used to allow information sharing between members of the design team, the construction team, the PMO, and the POA. This can facilitate the review of drawings, calculations, and specifications, as well as provide for security and backup of project documentation. Security levels should be agreed upon by the PMO Design Lead and the design team PM.

PW provides the following functionality:

- Version control
- Ability to store attributes (or metadata)
- Multi-level security
- Search capability
- Maintenance of file interdependencies

The following key functional requirements will be met by the PAMP PW environment:

- Provide a reliable EDMS that will be maintained throughout the duration of the PAMP.
- Retain electronic copies of project documents, including correspondence, photographs, drawings, specifications, submittals, review comments, reports, contracts, change orders, invoices, as-built drawings, and other project records.
- Implement and maintain a platform that allows the project team to easily share project documents while maintaining necessary security protocols, including virus and malware protection.
- Provide durable backup of project documents.

A technical library has been established in PW that will contain technical manuals, standards, geotechnical reports and studies, base maps, digital terrain map and associated files, as well as the computer-aided design and drafting seed files and title blocks. In addition, this library will contain the concept planning charrette report, concept design, and known artifacts of previous data collection efforts and studies.

For additional information on EDMS requirements and procedures, please refer to the *PAMP Program Management Manual Data Management Plan*.

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# Change Management

## 8.1 Scope Change Initiation

Changes in the design scope result mainly from the following: changes required by the owner, changes required as the result of code assessments, changes required by permitting agencies, or changes resulting from the design process that identify design concept problems or improvements identified during the design process that will enhance the final work product. Other factors can also initiate scope changes.

When a scope change is identified for a valid reason, the DM and the PM must document the nature of the scope change and the impact(s) it has on the design schedule and budget, as well as its impact to the overall project execution schedule and budget. This information then needs to be shared with the PMO and the POA, so that an assessment can be made as to whether the scope change is warranted and will be accepted. This communication must be transmitted in a written scope change request document in a timely fashion, so that the overall project schedule is impacted to the minimum extent possible.

## 8.2 Approvals

When a scope change request has been reviewed and accepted by the PMO and the POA and it has been determined that the change affects the design contract, a change order to the design contract will be drafted by the PMO for execution by the MOA and the professional services contractor. Proposed changes should include a description of program and project changes inclusive of changed field conditions and environmental delays.

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# References

CH2M HILL, Inc. (CH2M). 2014a. *Anchorage Port Modernization Project 15 Percent Concept Plans*. December 8.

CH2M HILL, Inc. (CH2M). 2015a. *Anchorage Port Modernization Project CADD Manual.* October 22.

CH2M HILL, Inc. (CH2M). 2015b. *Anchorage Port Modernization Project Document and Record Management Plan.* December 9.

CH2M HILL, Inc. (CH2M). 2015c. *Anchorage Port Modernization Project Survey Manual* July 23.

CH2M HILL, Inc. (CH2M). 2016b. *Anchorage Port Modernization Project Seismic Design Manual*. January 22.

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# Appendix B-3
# Design Management Manual – Design-Build

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PORT OF ALASKA MODERNIZATION PROGRAM

# Appendix B-3: Design Management Manual – Design-Build

Revised October 2022

*Prepared for*
Port of Alaska

Jacobs HDR

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# Revision Control Log

| Revision | Date Issued | Description of Changes | Pages Affected |
|---|---|---|---|
| 00 | 05/2022 | Initial Release | All |
| 01 | 07/15/2022 | Updated for new organization chart | All |
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# Acronyms and Abbreviations

| | |
|---|---|
| CADD | computer-aided drafting and design |
| CH2M | CH2M HILL Engineers, Inc. |
| CM | construction manager |
| D/B | design build |
| DM | design manager |
| DOR | Designer of Record |
| EBS | estimate breakdown structure |
| EDMS | electronic document management system |
| GIS | geographical information system |
| IFC | issued for construction |
| MLLW | Mean Lower-Low-Water |
| MOA | Municipality of Anchorage |
| MSA | master service agreement |
| NES1 | North Extension Stabilization Step 1 |
| OCSP® | Open Cell Sheet Pile ® |
| PAMP | Port of Alaska Modernization Program |
| PMO | Program Management Office |
| POA | Port of Alaska |
| POL | petroleum, oil, and lubricant |
| QA | quality assurance |
| QC | quality control |
| QM | quality manager |
| SDC | Services During Construction |
| TM | technical memorandum |
| U.S. | United States |
| USACE | US Army Corps of Engineers |

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# Introduction and Purpose

This Design Management Manual is a reference document of design management standards and procedures to support the design/build (D/B) process for the Port of Alaska Modernization Program (PAMP). This manual is intended to provide consistent guidelines and procedures for use by all parties performing design and design management services.

This manual provides project background information, defines D/B team roles and responsibilities, defines the design process through each stage, defines the requirements for design quality assurance (QA) and quality control (QC), outlines the communication requirements during the D/B process, defines the requirements for project documentation, and summarizes the change management process. Finally, this manual sets expectations for sustainability and environmental stewardship and compliance. The role of the designer during the construction phase is also included in this manual.

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# General Project Information

## 2.1 Goals Requirements and Project Description

The Port of Alaska (POA) has established overall project goals that provide the major objectives for the PAMP:

- The PAMP will modernize the Port in multiple phases while remaining in operation. The project will replace the four main terminals (POL1, POL2, T1 and T2), demolish the old terminals, stabilize the North Extension and relocate the POA Administration Building.
- Provide a modern, safe, and efficient regional port that stimulates economic development and the movement of goods into and out of the POA.
- Allow for future growth of the POA.
- Protect the environment and promote sustainability.

The POA has identified measures of success for the PAMP, including the following four items, which fall into the categories of cost control and schedule control:

1. Complete the PAMP on time and within budget.
2. Create a PAMP design that maximizes the use of available funding.
3. Achieve the best value for the POA with new and improved infrastructure.
4. Avoid litigation; confirm that there are no unsolvable issues through planning, design, and construction.

## 2.2 Background Information, Physical Environment, and Constraints

The POA is located in the Knik Arm of upper Cook Inlet with the existing terminal locations within Tract H, Port of Anchorage Subdivision, Anchorage, Alaska. The POA provides critical infrastructure for Anchorage and a majority of the State of Alaska, with over 74 percent of the nonpetroleum (food and other commodities) and 95 percent of the refined petroleum shipments into south-central Alaska imported through the POA (McDowell Group, 2015). The majority of consumer goods arrive by container; however, critical POA functions include providing transportation and distribution of POL products, including all of the jet fuel and much of the gasoline used in those portions of Alaska west of Cordova. The POA also serves as the transportation hub for most Portland Cement used in Alaska. In addition, the POA is designated as a strategic seaport by the U.S. Department of Defense, supporting the transit of deployable military equipment.

The existing marine-side infrastructure includes three general-purpose cargo container terminals, two of which are supported by three 38-gauge container cranes, and the third configured with trestles to support RO-RO operations. There are also two POL terminals. Because of their age, condition, design, and functional obsolescence, all of the aforementioned marine facilities must be replaced as soon as practicable. Moreover, the earthen-filled sheet pile structure referred to as the North Extension, a partially constructed artifact of the previous PIEP, has been determined to be structurally unstable under design static and seismic loads and must be modified. The area designated as the South Backlands, located adjacent to the proposed PCT is eroding and needs shore protection. Finally, support facilities and infrastructure at the POA are in need of repair or replacement.

A subarctic location, the POA is located in a harsh climate with high winds, low temperatures, abundant snowfall, and limited daylight during the winter season. The harsh climate provides significant challenges to building envelope design, and the climate combined with limited seasonal daylight produces challenges to construction productivity. The POA's marine environment includes tidal swings up to 40 feet and currents from flood and ebb tides that routinely run from to 2 to 4 knots. This environment may contain significant pan ice present from late November through early April.

The POA ship berths experience significant siltation that routinely threatens spring mooring operations until the commencement of the annual dredging operations under the U.S. Army Corps of Engineers (USACE) Federal Dredging Project, which typically begins in April.

Challenging seismic and geotechnical conditions are present at the POA site and must be addressed in all infrastructure considerations.

The National Marine Fisheries Service (NMFS) has listed the Cook Inlet beluga whale population as endangered under the Endangered Species Act (73 Federal Register 62919). Future construction activities associated with the PAMP have the potential to disturb or displace small numbers of these marine mammals. Specifically, proposed construction activities may result in Level B harassment (that is, behavioral disturbance) from underwater sounds generated from impact and vibratory pile driving.

## 2.3 Permitting

During the permitting process for the PAMP, the POA will coordinate with stakeholders and regulatory agencies at the federal, state, and local level to comply with applicable environmental regulations. The resulting permits and approvals will enable the POA to build, manage, and operate one of the state's most critical pieces of infrastructure while acting as a good steward of public safety and the environment. The design/build team will provide support for permitting.

Anticipated environmental permitting documents include biological assessments, incidental harassment authorizations, essential fish habitat evaluations, archeological and historical evaluations, and environmental assessments. The design will be depicted on schematic drawings, geographic information system (GIS) exhibits, and other media to facilitate permit review and agency and stakeholder evaluation.

The environmental permitting process is completed by meeting and complying with statutory timelines for public and agency review. Comments received during the public review process will be adjudicated and adjustments to the proposed design solution that are brought to light during the process will be considered. Ultimately, approved permitting documents and authorizations will allow for the implementation of the PAMP design strategies. Permit applications with supporting design documents will be submitted through the PMC and POA to the appropriate authority having jurisdiction.

The design/builder DOR will make application and obtain all permits required to complete the design deliverables and ensure constructability (such as building safety, utility connections). DOR will also provide assistance to PMC permitting applications as they may relate to the design solution. The design/builder construction contractors shall be responsible for all permits required for construction.

# Design Team Roles and Responsibilities

## 3.1 Project Management Consultant Team

As set forth in a master service agreement (MSA), Jacobs Engineer, Inc. (Jacobs) and subconsultant HDR, Inc. lead the program management office (PMO) role throughout the PAMP D/B process. For this project, the PMC will:

- Prepare D/B Request for Proposal documents for selected tasks and:
  - Assist the POA with selection of and contracting with D/B contractors
  - Develop the necessary procurement documents to secure these services
- Perform Contract Administration on behalf of the MOA as the designated Owner's Representative
- Coordinate the work of the POA's D/B contractors with Port Stakeholders
- Provide existing information and technical standards to the selected delivery team members
- Monitor and support the work of DOR teams, by:
  - Distributing design submittals and requests for information to stakeholder reviewers
  - Participating in meetings to discuss the review comments
  - Performing review of design submittals, including plans and specifications for completeness, accuracy, and consistency with the D/B Contract (not a code and or building permit review)
  - Reviewing the team's progress against the project schedule, and recommending corrective action as needed to the POA
- Provide technical expertise when needed to advise the POA on key decisions during design
- Provide value engineering reviews when required by the POA
- Develop a logical sequence of construction procurement packages that keeps the Port operational and in regulatory compliance during construction.

In addition, the PMC will manage requirements, scope, and quality as follows:

- Capture and document stakeholder requirements and verify these have been approved by the MOA before they are included as scope elements.
- Confirm that the DOR will provide for a minimum 75-year design life, without impressed current cathodic protection systems.
- Verify that the DOR properly applies seismic design considerations in accordance with the latest version of the *Port of Alaska Modernization Program Seismic Design Manual*.
- Manage design project issues, scope changes and product scope changes using the process described in the PAMP Program Management Plan.
- Verify that design project interim and final products undergo QA/QC reviews in accordance with the PAMP Program Management Plan.
- Inform, and consult with, required regulatory agencies regarding the works and likely construction techniques that will be required to build the individual design subprojects, and produce information to the quality and on the schedule required to support associated permitting activities.

- Confirm that the designs are coordinated with the POA operational requirements for ship and cargo operations.

## 3.2 Design/Build Team

### 3.2.1 Project Manager

The D/B team project manager (PM) will have overall responsibility for interfacing with the Owner's Representative to develop the design work scope, schedule, and budget for the project. The PM will be responsible for assembling the project team, managing scope, schedule, and budget and ensuring that all required resources of the D/B team are available to complete the project. The PM will be the main point of contact with the Owner's Representative and will manage all aspects of the design including changes to the work scope, project schedule and budget. The PM has overall responsibility to ensure the design meets all the project requirements and that a quality work product is completed and delivered to the POA. It is expected that the PM will be an employee of the prime contractor.

### 3.2.2 Design Manager

The D/B team's design manager (DM) has overall responsibility for the design content, quality, budget, and schedule. The DM works with the PM to select the appropriate design team members and to develop the project instructions that provide guidance to the design team over the course of the design effort. The project instructions define the project scope, schedule, budget, communication paths, design tools, and documentation requirements. They also define the QA/QC process and other specific information the team members will need to successfully execute the project.

The DM is responsible for leading the effort to estimate the resources required to complete the design in the required time frame and to meet the design budget. Project task leaders and lead designers assist in this effort. If during the course of the work the DM believes that the project schedule or budget are not sufficient to complete the work, the DM shall immediately notify the PM.

During the design, the DM leads internal and external meetings to review project progress, helps to resolve design issues, tracks design budgets and progress against schedule and documents changes to the work scope through the change management process.

The DM provides progress updates on the design to the PM and the Owner's Representative. The DM is also responsible for tracking the design QC process and working with the QC manager to confirm that resources are available to implement the QC process and that QC documentation meets the requirements.

The DM is responsible for coordinating design phase review meetings, documenting the issues raised during the review process and working with the PM and design leads to resolve each of the issues. At the end of the design process, the DM is responsible for confirming that contract-required design deliverables have been completed and are delivered to the Owner's Representative.

During the period of construction, the DM coordinates all of the construction Requests for Information (RFIs) with the appropriate members of the design team as well as directs submittals to team members for review and approval. The DM also coordinates field inspections for the various elements of the work that are required to be performed by members of the design team.

### 3.2.3 Design Leads (Designers of Record)

Discipline design leads report to the DM and are responsible for the design efforts and products of their specific discipline. They work with the DM at the beginning of the design process to develop the budget for their design effort and to assemble the resources required to complete their work. At the beginning of the design process, they estimate the number of drawings that will be required to convey the design information to the owner, review agencies, and the D/B construction manager. They also assemble an

outline list of specifications that will be required to convey the design intent and a list of the codes and standards that must be followed in the design effort.

They are responsible for reviewing the work developed in their discipline for the design and for coordinating the QC effort for their design product. They must approve selections of materials and equipment. They confirm that project protocols are followed and that design documentation for the work is in order and in accordance with the project instructions.

The design leads also serve as the Designer of Record (DOR) for their discipline and are responsible for sealing and signing the final Issued for Construction (IFC) drawings and specifications.

In addition, the design leads are responsible for the following tasks:

- Carry forward the individual design packages required to advance to 100% design complete and ready for construction
- Accept professional responsibility to comply with relevant laws, regulations, standards, and contract requirements
- Review those work products developed by the PMC or others in predecessor planning and preliminary design actions and address technical concerns within the work products during the work
- Apply best engineering practices in the development of the design
- Apply life-cycle cost consideration in design and material selections, documenting this analysis
- Apply sustainable design considerations throughout product development, documenting this analysis
- Perform constructability reviews and analysis during design development
- Make timely communications regarding design issues with the DM and PM, and work with the DM and PM toward their successful resolution
- Develop project schedules in cooperation and coordination with the DM and PM, providing realistic schedules that incorporate adequate time for design reviews and QA/QC processes
- Record decisions during design meetings through assisting in the development of meeting minutes
- During construction, respond to RFI's and review submittals for their area of design responsibility

The DM and DL of a specific discipline may be the same individual

### 3.2.4 Quality Manager

The quality manager (QM) is selected by the DM and PM and is responsible for managing the overall QA/QC process during the design process. The QM provides the documentation requirements and templates for the QC process, selects the senior QC reviewers for each discipline with the help of the DM, sets the QC review discipline and cross discipline coordination meetings, and reviews the QC process to confirm that QC efforts have been coordinated between the design leads and the senior reviewers and that documentation is in place. It is also the QM's responsibility to put into place the process for dispute resolution, in the event that design personnel and review personnel cannot reach an agreement over a specific design issue.

The QM shall not also be the PM, the DM, or a design lead.

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# Design Process

## 4.1 Project Initiation Meeting

The project initiation meeting is facilitated by the PM and DM and is the first step in the design process. It is intended to provide the D/B team with the following project design objectives:, project schedule and budget, owner's expectations, communication protocols, documentation requirements, and design platforms and tools. At a minimum, participants should include the Owner's Representative and the design/builder's PM, DM, Construction Manager (CM), design leads, and the design QM. During the course of the meeting, the project scope definition and design concept should be fully understood by each of the participants, as well as the schedule for design completion. At this time, the design leads should discuss their basic approaches to the design task and raise concerns about the existing design concept, code issues, or other technical issues.

### 4.1.1 Deliverables

The project initiation meeting deliverable will be a technical memorandum (TM) that defines the project scope and budget, provides a risk register, summarizes the design concept, identifies the key team members and communication protocols, defines the estimate breakdown structure (EBS), and defines the project schedule complete with project deliverable milestone dates. Significant project challenges or code and environmental issues should be documented in the TM, and it is to be approved by the Owner's Representative and the D/B team's PM, CM, DM, and design leads.

## 4.2 35% Design

The 35% design phase is intended to take the design to a level that solidifies the concept and alignment, defines the major features of work, and defines the codes and standards with which the remaining design effort will comply. The 35% design must incorporate consideration for the requirement that POA operations must be maintained throughout construction. Care should be exercised to verify compliance with all scope and relevant prescriptive design requirements established by the Request for Proposal and the accepted Proposal, governing codes, and or regulatory requirements. Depending upon the circumstances, design charrettes and value engineering workshops may be appropriate to support the development of the 35% design. No significant changes to the design should occur past this design stage. At this stage, the design level is generally defined as a preliminary design package.

### 4.2.1 Deliverables

- Design Narrative describing the elements of the design package, including major system components and material selections, for each discipline
- Workplans for proposed field investigations and laboratory testing if required by the DOR
- All QC Review/comment forms
- Outline liof Specifications
- Draft Safety in Design Analysis
- Permit List
- Updated Project Schedule and Schedule Narrative
- Prelimanary Construction work plansthat contain, contractors means and methods for executiing the work for the excavation/ sheet removal/ soil improvements/ bedding material, filter rock, and armor

stone placement, dredging dump plan, dredging plan, equipment placement for marine work, which includes anchor plans indicating layout of Anchor's to secure floating equipment. Each Anchor shall have latitude and longitude locations identified as well as equipment locations (that is, barge corners identified).

Drawings including but not limited to:

- Civil
  - Title Sheet and Index
  - Project location and Vicinity Maps
  - Project Symbols Legends and Abbreviations Sheet
  - General Site overview plan
  - Geometric Layout Plan
  - Grading and Strom Drain Plan
  - Demoliton and Removal Plan
  - Typical Section Sheets
  - Composite Utility Plan
  - Exisiting Site Topographical Survey and Utilties Plan
  - Special Project Phasing Requirements
  - Project site plan, including topography, borehole locations, egress and circulation, utility routing, parking and snow storage areas, fencing and site security features, and site drainage features

### 4.2.2 Internal Review

Before submission to the Owner's Representative, a QC review will be conducted and appropriately documented. At this stage of the design process, senior reviewers in each discipline should be engaged to maintain compliance of the design with applicable codes and standards and to confirm that the scope and relevant prescriptive design requirements established by the Request for Proposal and the accepted Proposal have been met. Interdisciplinary communication will be required at this stage, but a thorough cross-discipline design review is not required at this time.

### 4.2.3 PMC Review

The review by the PMC at this stage should verify that the concept proposed meets the the scope and relevant prescriptive design requirements established by the Contract and that proposed designis acceptable. Specific comments should be developed and forwarded to the D/B team for incorporation into the 65% design package.

## 4.3 65% Design

The 65% design stage should produce a well-developed design package for all disciplines. A complete drawing list for all disciplines should be available at this stage (not all drawings will be in progress at this time), and the majority of required calculation packages for each discipline should be complete. In addition, a draft of each of the specifications listed in the 35% design should be available for review at this stage.

### 4.3.1 Deliverables

- Design Narrative update describing the details of specific elements of the design package, including major system components, material selections, management of soil treatment details, management of sheetpile demolition details, soil handling details, management and disposition of salvage sheetpile meterials, management and disposition of soil treatment swell
- All QC Review/Comment Forms
  - Draft Specifications
  - Draft Safety in Design Analysis
  - Constructability Review
  - Fast Lagrangian Analysis of Continual Model Analysis results verification and soil improvement criteria
  - Civil and Coastal Engineering Calculations
  - Permit List and Status
  - Updated Project Schedule and Schedule Narrative
  - Updated construction work plans that contain, contractors means and methods for executiing the work for the excavation/sheet removal/soil improvements/bedding material, filter rock, and armor stone placement, dredging dump plan, dredging plan, equipment placement for marine work, which includes anchor plans indicating layout of Anchor's to secure floating equipment. Each Anchor shall have latitude and longitude locations identified as well as equipment locations (that is, barge corners identified).

Drawings:

- General
  - Title sheet and Index
  - Project location and Vicinity Maps
  - Project Symbols Legends and Abbreviations SheetGeneral Site overview plan
  - Geometric Layout Plan
  - Schedule of drawings
  - Code summary
- Civil
  - Haul routes
  - Demoliton and Removal Plan
  - Grading and Strom Drain Plan
  - Strom Drain Profile sheets
  - Soil improvement plan and section
  - Drying Bed layout
  - Typical Section Sheets
  - Construction Details
  - Composite Utility Plan
  - Exisiting Site Topographical Survey and Utilties Plan
  - Project Construction Phasing plan
  - Survey control
  - Excavation and Grading plans and sections
  - Utility plans and profiles

  - Utility details
  - Miscellaneous details
  - Erosion and sediment control plan
  - Landscaping plans and details

- Electrical
  - Legend and abbreviations
  - Site plan
  - Power plan
  - Lighting plan
  - Enlarged plan electrical room
  - Details
  - Site power one-line diagram
  - Luminaire schedule
  - Connection schedule
  - Panelboard schedules
  - Communication room plan
  - Communication details
  - Heat trace plan and details
  - Backbone diagram

### 4.3.2 Internal Review

A QC review will be conducted and appropriately documented. The 65% design stage internal reviews require complete drawing, specification, and calculation reviews in each discipline, as well as a formal cross-discipline review to confirm that designs are compatible across the disciplines and to minimize omission of systems or items to support other discipline requirements.

### 4.3.3 PMC Review

The PMC will conduct detailed technical reviews of the design documents for technical content, constructability, and cross-discipline coordination issues. Specific comments will be developed and forwarded to the D/B team for adjudication. All responses will be incorporated into the 95% design package.

## 4.4 95% Design

The 95% design package will incorporate all previous review comments and is the last stage for PMC review. It will include the drawings listed in the 65% design package developed to the 95% completion level. At this stage, only minor details will require completion, as this deliverable will be considered construction ready. A complete drawing and specification package will be included in this design package.

### 4.4.1 Deliverables

- Design Narrative describing the elements of their design package, including major system components, material selections
- All QC Review/Comment Forms
- Complete Drawings
- Complete Specifications
- Safety in Design Analysis

- Constructability Review
- Permit List and Status
- Calculations
- Updated Project Schedule and Schedule Narrative
- Updated Construction work plans that contain, contractors means and methods for executiing the work for the excavation/ sheet removal/ soil improvements/ bedding material, filter rock, and armor stone placement, dredging dump plan, dredging plan, equipment placement for marine work, which includes anchor plans indicating layout of Anchor's to secure floating equipment. Each Anchor shall have latitude and longitude locations identified as well as equipment locations (that is, barge corners identified).

Drawings:

- General
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  - Geometric Layout Plan
  - General Site Overview Plan
  - Schedule of drawings
  - Code summary
- Civil
  - Haul routes
  - Demoliton and Removal Plan
  - Grading and Strom Drain Plan
  - Strom Drain Profile sheet (s)
  - Typical Section Sheets
  - Construction Detail (s) and Enlargement Plans
  - Composite Utility Plan (s)
  - Exisiting Site Topographical Survey and Utilties Plan
  - Project Final Construction Phasing plan
  - Survey control
  - Excavation and Grading plans and sections
  - Utility plans and profiles
  - Utility details
  - Miscellaneous details
  - Final Erosion and sediment control plan
  - Landscaping plans and details
- Electrical
  - Legend and abbreviations
  - Site plan
  - Power plan
  - Lighting plan
  - Enlarged plan electrical room
  - Details
  - Site power one-line diagram
  - Luminaire schedule
  - Connection schedule

- Panelboard schedules
- Communication room plan
- Communication details
- Heat trace plan and details
- Backbone diagram

### 4.4.2 Internal Review

The internal review of the 95% design package should include a complete QC review by the QC team to confirm that final design details are correct and constructable. At this stage, it is also necessary to complete a full cross-discipline design review to minimize the possibility of conflicts and omissions. Full documentation of the cross-discipline design process and the senior QC review must be completed by the QM.

### 4.4.3 PMC Review

The PMC review at this stage should focus on ensuring that previous PMC design review comments have been addressed and that the design package is ready to be issued for Construction (IFC). Specific comments will be developed and forwarded to the D/B team for adjudication. All responses will be incorporated into the IFC design package.

## 4.5 Issue for Construction

The Issue for Construction package will incorporate all previous review comments. It will address all comments from previous submissions and all documents. A Draft IFC package shall be submitted for review indicating all comments have been adjudicated. A Final IFC packaged shall then be issued once all comments are confirmed to be addressed and shall be signed and sealed by the DOR.

### 4.5.1 Deliverables

- Final Design Narrative
- Final QC Review/Comment Forms
- Sealed Drawings
- Sealed Specifications
- Inspection and Testing Plan for all materials incorporated into the work, and to show conformance to the requirements of permits, plans, specifications and this document
- Safety in Design Analysis
- Final Constructability Review
- Final Permit List and Status
- Updated Project Schedule and Schedule Narrative
- Updated Construction work plans updated that contain, contractors means and methods for executiing the work for the excavation/ sheet removal/ soil improvements/ bedding material, filter rock, and armor stone placement, dredging dump plan, dredging plan, equipment placement for marine work, which includes anchor plans indicating layout of Anchor's to secure floating equipment. Each Anchor shall have latitude and longitude locations identified as well as equipment locations (that is, barge corners identified). Please note: Contractor will be required to submit workplans in accordance with permitting requirements found in the permitting matrix.

### 4.5.2 PMC Review

The PMC review at this stage will focus on ensuring that previous PMC design review comments have been addressed and that the design package is ready to be issued for construction.

## 4.6 Services During Construction

During the construction phase of the work, the D/B design team will engage in the following tasks:

- Respond to Requests for Information (RFIs) from the construction team. This flow of information will serve to clarify design intent and details provided on the drawings and specifications, respond to changes in the design requested by the construction team, and respond to challenges posed by changed conditions in the field different than assumed at the time of initial design.
- Review and approve submittals and shop drawings. The design team will review all material and equipment submittals for consistency with the design intent and the specifications, approve changes in materials and equipment that differ from that specified in the design if the change meets or exceeds the design intent, and review shop drawings of structure and equipment for code compliance and compliance with the design intent and geometry of the project.
- Perform construction observations. The design team will perform periodic reviews of the construction in progress to verify that materials and workmanship are consistent with the design intent and required long term performance of the project. If discrepancies are noted in any element of the project by the design team during periodic observations, the project and construction managers shall be immediately notified so that the issue can be resolved prior to execution of further stages of construction. At completion of construction, the design team shall participate in a final inspection of the work to verify the project is compliant with the design drawings and specification and is ready to be turned over to the owner.
- Record Documents. The design team shall receive the red-line project documents (drawings and specifications) marked up by the project construction engineer and produce the final set of record documents for the project. The design team will verify that the changes to the original “issued for construction” set are consistent with the RFI, and submittal logs and also consistent with what they observed in the field during periodic observations.
- Certificate of Completion. The D/B DOR shall provide a Certificate of Completion, indicating that the work has been performed in accordance with the construction documents.

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# Quality Assurance and Quality Control Process

Quality requirements are detailed in the PMP Quality Management Plan.

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# Communication and Reporting

## 6.1 Communication Protocols

Communications between the PMC and the D/B team should be directed through the D/B team PM and the Owner's Representative. The PM may decide to transfer this line of communication to the DM for issues related solely to the technical content of the design. Communications that change the direction of the design or that have impacts on elements of the design should be documented in writing through TMs, meeting notes, or phone conversation records. All project correspondence shall be initiated in Aconex (see Section 7)

## 6.2 Review Meetings

Each review meeting will be conducted by the DM and will be documented by a meeting summary that includes the following information:

- Design stage of the review meeting
- Date of the meeting
- List of attendees
- Itemized list of issues discussed and outcomes
- Action items

The draft meeting summary shall be reviewed by the PM and DM and then distributed via the project electronic document management system (Aconex) for review and comment by all meeting attendees. The final meeting summary shall be issued by the PM within five (5) business days of the meeting.

## 6.3 Progress Reports

Most significant design efforts are of a duration to warrant progress reports on a monthly basis. More frequent reporting may be required for very fast-paced efforts, but this is generally not required. Progress reports should be developed by the PM in conjunction with the DM and should provide the following information to the Owner's Representative:

- General narrative of the design work accomplished during the reporting period by discipline
- Identification of items that could affect the project budget or schedule
- Identification of technical issues that require resolution
- Identification of changes in personnel assignments that could affect project schedule or communication paths
- Project schedule update: if the updated schedule indicates that is a schedule slip, this should be accompanied by a narrative that describes the reason for the anticipated delay and what actions can be taken to bring the design process back to the original schedule
- Progress Report: if the design effort is being conducted on a time and expenses basis, the progress report should provide a summary of the expenditures to date, detailed to the design discipline level, as well as a forecasted expenditure effort to complete the design on a discipline-level basis.
- Narrative outlining the expected design progress duing the coming reporting period

Progress reports shall be signed by the D/B team PM.

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# Project Documentation

## 7.1 Information Sharing

The electronic document management system (EDMS) selected for this program is Aconex. Aconex will be used to allow information sharing between members of the D/B team, the PMC, and the POA. This can facilitate the review of drawings, calculations, and specifications, as well as provide for security and back-up of project documentation.

Aconex provides the following functionality:

- Version control
- Ability to store attributes (or metadata)
- Multi-level security
- Search capability

The following key functional requirements will be met by the Aconex environment:

- Provide a reliable EDMS that will be maintained throughout the duration of the PAMP.
- Retain electronic copies of all project documents, including correspondence, photographs, drawings, specifications, submittals, review comments, reports, contracts, change orders, invoices, as-built drawings, and other project records.
- Implement and maintain a platform that allows the project team to easily share project documents while maintaining necessary security protocols
- Provide durable backup of all project documents.

Upon NTP, a copy of the *Port of Alaska Modernization Program Document and Record Management Plan* will be provided.

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# Change Management

## 8.1 Scope Change Initiation

Changes in the scope of the design result mainly from the following: changes required by the owner, changes required as the result of code assessments, changes required by permitting agencies, or changes resulting from the design process that identify design concept problems or improvements identified during the design process that will enhance the final work product. Other factors can also initiate scope changes.

When a scope change is identified for a valid reason, the DM and the PM must document the nature of the scope change and the impact(s) it has on the project schedule and budget. This information then needs to be shared with the Owner's Representative so that an assessment can be made as to whether the scope change is warranted and will be accepted. This communication must be transmitted in a written scope change request document in a timely fashion, so that the overall project schedule is impacted to the minimum extent possible.

## 8.2 Approvals

Once a scope change request has been reviewed and accepted by the PMC and the POA, and it has been determined that the change affects the D/B contract, a change order for the work will be drafted by the PMC for execution by the MOA and the D/B contractor.

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# References

CH2M HILL, Inc. (CH2M). 2015a. *Port of Alaska Modernization Program CADD Manual.* October 22.

CH2M HILL, Inc. (CH2M). 2015b. *Port of Alaska Modernization Program Document and Record Management Plan.* December 9.

CH2M HILL, Inc. (CH2M). 2015c. *Port of Alaska Modernization Program Survey Manual* July 23.

CH2M HILL, Inc. (CH2M). 2016b. *Port of Alaska Modernization Program Seismic Design Manual*. January 22.

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# Appendix C
# Data Management Plan

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PORT OF ALASKA MODERNIZATION PROGRAM

# Appendix C: Data Management Plan

Revised October 2022

*Prepared for*
Port of Alaska

Jacobs HDR

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# PAMP Data Management Plan (DMP)

| Revision | Date | Issued for/Revision Details | Revised by |
|---|---|---|---|
| 00 | October 18, 2017 | Initial Release | Shelle Cover |
| 01 | July 2022 | Updates related to Work Instructions, Program re-branding, updated processes | Shelle Cover |
| | | | |
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# Executive Summary

This DMP provides the foundation for effective document management and communication among the Port of Alaska Modernization Program (PAMP), and will be monitored, reviewed, and updated as the Program Management Office (PMO) further refines the processes and procedures. It creates a methodical system for creation, capture, classification, control, retrieval, storage, and retention of records and documents.

The PAMP Team includes the PAMP Director, the Program Management Consultant [CH2M HILL Engineers, Inc. (CH2M)/Jacobs with subconsultant HDR, Inc. (HDR)], and other PAMP consultants and contractors. It is managed through the PMO.

Observing good communication and document management and control practices when managing information will benefit the PAMP by:

- Making it easier to locate and retrieve information program participants need to execute the work and support decision making
- Providing and preserving evidence of activities, actions, and authorizations appropriately
- Providing reliable version control

The PAMP uses three systems/solutions to manage the program's records. The systems selected by the PAMP for this program include Aconex, Bentley's ProjectWise (PW), and ProjNet's DrChecks. Aconex is used as the primary system and will ultimately contain all program documents. PW will be used to generate and maintain Computer-aided Design and Drafting (CADD) drawings. Contractor design deliverable review comments will be generated in DrChecks. All records generated within PW and DrChecks will be archived in Aconex.

The intention of this DMP is to broadly identify how documents and records are used within PAMP project(s), and how they should be created and maintained to enhance business performance, satisfy PAMP requirements, fulfill stakeholder expectations, and protect records as assets. This DMP demonstrates recordkeeping requirements, defines recordkeeping responsibilities, and is an appendix to the PAMP Program Management Plan. This DMP applies to all PAMP project records and documents. All parties should note that they have an obligation to manage information received and generated on behalf of PAMP as public records.

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Attachment

C1 Aconex Project Configuration and Instruction Manual

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# Acronyms and Abbreviations

The list below describes each acronym used within this document.

| | |
|---|---|
| ADN | Aconex Document Number |
| AOA | Aconex Organizational Administrator |
| PAMP | Port of Alaska Modernization Program |
| CADD | Computer-aided Design and Drafting |
| CH2M | CH2M HILL Engineers, Inc. |
| DCL | Document Control Lead |
| DMP | Data Management Plan |
| HDR | HDR, Inc. |
| IFC | Issued For Construction |
| MB | megabyte |
| PAL | Project Automation Lead |
| PDF | Adobe Acrobat Portable Document Format |
| PMO | Program Management Office |
| POA | Port of Alaska |
| PW | Bentley's ProjectWise |
| RFI | Request For Information |

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# Overview

It is the policy of the PAMP Team that all program documents be created, distributed, managed, and controlled in an electronic format.

The PAMP uses three systems/solutions to manage the program's records. The systems selected by the PAMP for this program include Aconex, Bentley's ProjectWise (PW), and ProjNet's DrChecks. Aconex is used as the primary system and will ultimately contain all program documents. PW will be used to generate and maintain Computer-aided Design and Drafting (CADD) drawings. Contractor design deliverable review comments will be generated in DrChecks. All records generated within PW and DrChecks will be archived in Aconex.

Program documents include all documents prepared by, maintained by, or on the behalf of the PAMP Team, such as:

- Meeting agendas and summaries
- Agency permits and applications
- Contracts, purchase orders, task orders, change orders, claims, and invoices
- Drawings, data sheets, calculations, model files, and specifications
- Email messages, letters, and memorandums
- Estimates
- Photos
- Instructions and logs
- Plans, reports, presentations, and manuals
- Requests for Information (RFIs)
- Requests for proposals, scopes of work, proposals, and notices to proceed
- Reviews
- Schedules
- Templates

All hard copies generated and received by the PAMP Team (including original signatures) will be scanned into electronic format.

All PAMP team members will use Aconex. Aconex is the central repository for all formal communication and document and record control functions. Documents generated in ProjectWise (PW) and DrChecks will be archived in Aconex. Work Instructions for the program will be documented and published.

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# Purpose and Scope

## 2.1 Purpose

This DMP provides the overarching framework for document and records control and management practices and guidelines for the PAMP. It defines the document and records management policy, work processes, and responsibilities of the Program Management Office (PMO), including its consultants and contractors. This DMP requires that all PAMP management, administrative, design, and construction documentation be recorded, tracked, stored, and controlled.

This DMP supports the following objectives:

- Documents are created, captured, and maintained in accordance with operational (business) needs and contractual requirements.
- A standard exists across the PAMP for the management of documents from creation, capture, classification, approvals, tracking, storage, and retention until either their lawful destruction or their preservation as archives.
- Project participants, and other parties involved in carrying out the activities of the PAMP, understand their respective responsibilities in relation to the management of documents and records.
- An understanding exists across PAMP projects that business information that supports or is evidence of an activity, transaction, action, negotiation, approval, or decision is a record and should be documented.

### 2.1.1 Definitions

<u>PAMP Team</u>

The PAMP Team is the PAMP Director, the PMO, and all other PAMP consultants and contractors.

<u>Document</u>

A piece of written, printed, or electronic matter that provides information or evidence or that serves as an official record when final.

<u>Organization</u>

The term used in Aconex for each business entity engaged in the PAMP.

<u>Record</u>

- A record is information that documents or is used to support business activity, transactions, changes, decisions, outcomes, negotiations, approvals, authorizations, or actions.
- A record is historical and final, with controls provided for determining where it is kept, who is responsible for managing it, and how long it is maintained.
- A record can be in any format or stored on any medium. The media include, but are not limited to, word-processing documents, spreadsheets, presentations, images, e-mail messages, geographical information system (GIS) files, computer aided design (CAD) files, audio-visual formats, exhibits, hardcopy files, publications, and records generated by electronic databases.
- Any information that the project teams and stakeholders create or receive as part of their activities is considered an official record.

### 2.1.2 Uses

Records and documentation are the program's historical memory. They are vital assets for conducting ongoing operations tasks; facilitating efficient and accountable business operations; providing valuable evidence of business activities and transactions; and addressing compliance requirements.

Document and record management is vital to ensure access to current and past records that meet legal, regulatory, and business obligations. The PMO has established a systematic document management program approach through the provision of policies and standards, guidelines, training, tools, and systems. This coordinated approach supports business effectiveness through managing and leveraging all the information resources.

### 2.1.3 Procedures

This DMP describes the elements of document management and communication among program team members, who have roles in the work being performed. The expected product of this process is effective document management and communication being performed, captured, tracked, reported, and archived successfully in support of the PAMP.

All official written and electronic correspondence (including information transmittals to and from the PMO and other parties) shall be distributed in Aconex. Distribution shall be per established distribution lists. Distribution lists will be created and found in the Aconex Project Directory.

## 2.2 Scope and Applicability

This DMP applies to all PAMP consultants and contractors working on the PAMP and to all aspects of PAMP business and records (including email and database applications).

This DMP and any supporting procedures apply to all project records, regardless of their format or media.

All members of the PMO, the PAMP Designated Representative, and PAMP consultants and contractors will work directly in Aconex, ProjectWise and DrChecks (as applicable) to ensure the efficient capture of project records.

# Roles and Responsibilities

The PMC Document Control Lead (DCL), under the direction of the PMC Strategic Lead, will be responsible for directly executing this DMP, and managing additional document control staff, as required.

All PAMP team members are responsible for following the procedures outlined herein. Team members shall not send or receive any final contractual documentation outside of Aconex. All incoming and outgoing issued documents shall be entered into Aconex for distribution. This provides a record of who sent and received each document, and when it was sent or received.

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# Principles and Requirements

Documents are the property of the PAMP and will be managed throughout their life cycle in accordance with the principles described in this section.

## 4.1 Records Creation

- Information created or received by the PAMP Team as part of their duties should be treated as public records.
- Records must be created where there are or may be business, accountability, or evidentiary requirements.
- Records management is part of normal business processes.
- Records by the PAMP team and outside parties shall be captured in Aconex at receipt to provide suitable access and controls. The records in this system provide evidence of business activity; contain the necessary audit and-evidentiary management; are associated with appropriate metadata; and are structured so the information has content and context.
- CADD files will be created and managed in Bentley's ProjectWise as specified within the most current version of the *PAMP Computer Aided Design and Drafting (CADD) Standards Manual.*

## 4.2 Document Naming

Refer to the Aconex Project Configuration and Instruction Manual (Attachment C1) for specifics on document naming for Aconex records.

CADD files will follow the naming convention specified within the most current version of the *PAMP Computer Aided Design and Drafting (CADD) Standards Manual.*

## 4.3 Capturing Metadata

- Metadata (information describing, for example, contract or task, originator, and capitol asset) must be captured for each document (regardless of system) to allow for searchability.
- Attachment C1 provides instructions for capturing attributes specifically within Aconex.

## 4.4 Revisions and Versions

Electronic versions of documents will be controlled using both document *Status* and *Revision* captured using Aconex metadata. A document will be in draft status until it has been approved as final. Documents are always categorized using alpha revisions (A, B, etc.) until the final document is formally revised and assigned a numerical sequential number (for example, Revision 00).

Aconex captures and stores all versions of a document. Versions are automatically captured in Aconex each time a document is superseded in Aconex. These versions are displayed and can be accessed through the document's history link.

In some cases, a final document will require a revision. A revision is defined as any change to the latest final document. For these documents, the revision control log page will be updated in the document to reflect the change (revision number, revision date, and description of changes).

All revisions to a previously final document must be reviewed according to the requirements of the PAMP Quality Management Plan, and be issued in an Aconex to the appropriate parties for Approval. It

is not acceptable to provide copies of a modified version of a document that has not gone through the formal review and approval process.

# 4.5 Security

## 4.5.1 ProjectWise

ProjectWise uses a group-based security model managed down to the project level. Groups will be granted access to a project, and team members invited to a group will inherit the access defined for that group. The intention of the group-based security model is to focus on the activities and tasks that will be performed by each team member, and is independent of the program organizational chart.

## 4.5.2 Aconex

The PMC is responsible for inviting PAMP consultants and contractors (called Organizations in Aconex) to access the PAMP Aconex project. Each contractor will be responsible for maintaining their own records, including the data security of their Organization's data and their system users. Each Organization is responsible for obtaining the system knowledge necessary to effectively protect the security of their Organization's data. Organizations within the PAMP do not have access to other Organization's records unless the specific document is shared/transmitted.

When users are added to Aconex they will be assigned a User Role. Roles establish what functions users are allowed and not allowed to perform. Functions that are not available to all users include:

- Marking documents as 'No Longer In Use'
- Creating New and Guest Users
- Editing User Information
- Editing Organization Information
- Editing User Role Settings
- Editing Document Confidentiality
- Administering Workflows and creating Workflow Templates

### 4.5.2.1 Guest User Accounts

Aconex allows guest users to be created outside of the PAMP project organization. Guest users have limited functionality and traceability. Guest user accounts should be limited to users with short-term involvement (i.e. Port tenants, regulatory agents, etc.).

Guest users have the following functionality:

- Receive project mail, inclusive of transmittals of documents
- Access file attachments sent to their email - if under 1 megabyte (MB), they'll arrive as an attachment; if over 1 MB, they will be supplied as links that don't expire
- Reply to mail and transmittals
- Forward emails received to others, with links to documents intact

Guest users are restricted and don't have the functionality to:

- Log in to Aconex
- Start a project mail

- Access project document register
- Access the project or global directory
- Access the audit trail

### 4.5.3 DrChecks

DrChecks allows for secure on-demand design reviews. Only Authorized users, whose access is controlled by trained Site Administrators, have access to the documents and tools.

## 4.6 Turnover

All program documentation will be turned over using the Aconex Project Archive module. The Aconex Project Archive will provide an accurate and searchable copy of the Program's correspondence and documents. The Archive will be delivered via a secure hard drive, and is a read-only copy of all project data. The Archive will include the following functionality:

- Search for documents and mail with standard Aconex search capability.
- Export search results to Microsoft Excel for reporting.
- View all of your documents, including mark-ups and document history.
- View the event log for every document.
- View sent or received mail, including transmittals and associated attachments.
- Easily open and save mail attachments.
- Access full mail thread information.
- Print project mails.

## 4.7 Retention

The PMO and all other consultants and contractors will maintain copies of their project records for a period of 3 years from the time of final payment.

## 4.8 Training and Awareness

Training programs have been developed to support document management activities. These include introduction and orientation packages describing document requirements and responsibilities.

The project teams will receive and comply with guidelines for the use of any PAMP management software systems.

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# Document Management

## 5.1 Templates and Forms

The most current versions of standardized templates and forms for the PAMP are available on Aconex. Separate templates are available for both the PMO and other PAMP consultants and contractors. Available templates include, but are not limited to:

- Letters
- Meeting summaries
- Technical memorandums
- Reports
- Meeting sign-in sheets
- Trip reports

Forms include:

- RFIs (Request For Information mail type in mail module - Aconex)
- Substitution requests (Substitution Request mail type in mail module - Aconex)
- Deviation requests (Request for Information mail type in mail module - Aconex)
- Certificates of compliance
- Partial and final payment
- Change orders

All documents generated for the PAMP should use these templates and forms, which include current POA and PAMP logos.

Certain forms (notated above) will be automated within Aconex using the Aconex mail module. Use of the Aconex mail module captures all communication directly in Aconex. This functionality allows forms to be emailed to other Aconex users for quick responses, initiators to accept or reject the responses, and summary reports to be generated. The Aconex mail module will be used for forms such as RFIs, substitution requests, and deviation requests.

## 5.2 Communications

### 5.2.1 Email

All PAMP emails that contain program deliverables, contract-relevant information, or anything that affects budget, scope, schedule, or safety will be initiated in Aconex; to the extent the participants in the email have Aconex accounts.

If program related emails are received outside of Aconex that meet the above criteria, the recipient of the email shall coordinate with the PMO Document Control Lead to ensure the mail is captured for the record.

If program related emails are initiated outside of Aconex that meet the above criteria, they shall be copied to the PMO Document Control Lead to ensure the mail is captured for the record.

### 5.2.2 Letters

Guidelines for PAMP letters include:

- Outgoing letters from the PMO to PAMP consultants and contractors and other participants in Aconex will be prepared using the Official Letter mail type in Aconex.
- Outgoing letters that cannot be initiated using the Aconex mail module will be registered into Aconex as documents.

### 5.2.3 Telephone Conversation Records

All telephone calls with PAMP significance will be documented afterwards, using the 'Record of Conversation' mail type in Aconex. All participants in the conversation shall be entered in the TO field. Any other interested parties shall be entered in the CC field. Only facts and action items should be recorded. If in doubt about whether a conversation is significant, the conversation should be documented.

### 5.2.4 Meeting Summaries

During each meeting, one individual will be designated to record meeting summaries for the facilitator (leader) of the meeting, and the meeting summaries will be uploaded and actions tracked in Aconex. The designated individual will issue meeting minutes within 3 business days after the meeting so the minutes can be reviewed, verified, and acted upon.

### 5.2.5 Transmittals

All transmittals should be sent in Aconex. Transmittals allow documents to be shared between Organizations.

PAMP consultants and contractors shall submit all deliverables to the designated PMC Contract Administrator or Owner's Representative, with copies to the established standard distribution list. The PMC Document Control Lead shall be copied on all transmittals.

## 5.3 Drawings

CADD files will be created and managed in Bentley's ProjectWise as specified within the most current version of the PAMP Computer Aided Design and Drafting (CADD) Standards Manual.

All PAMP design drawings (regardless of the source) will be archived in their native format, as well as in Adobe Acrobat Portable Document Format (PDF), within Aconex.

# Document Reviews

Formal document reviews within the PAMP will be conducted using either an Aconex workflow or DrChecks.

Aconex workflows allow revisions and comments to be captured directly in the document being reviewed. Aconex workflows automatically lock the document for editing outside of the workflow and assign the document a review status of “Review in Progress.” As the document is advanced through the individual reviewer steps, reviewers can upload their comments regarding the document for review and assign a status of:

- Approved / No Exceptions Taken
- Approved with Comments / Exceptions Noted
- Revise and Resubmit
- Rejected
- Acknowledge Receipt

See Section 3.1 in Attachment C1 for the description of use for the above listed Aconex review outcomes.

DrChecks captures comments, comment evaluations, and comment backchecks within a cloud-based database. Comments are then summarized using various report templates. All responses are consolidated in a report that will be uploaded to Aconex at the conclusion of the review process.

Work Instructions have been developed to detail specific review processes.

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# References

CH2M HILL Engineers, Inc. (CH2M). 2015a. *PAMP Project Management Plan*. Prepared for the Municipality of Anchorage.

CH2M HILL Engineers, Inc. (CH2M). 2015b. *PAMP Computer Aided Design and Drafting (CADD) Standards Manual.* Prepared for the Municipality of Anchorage.

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# Attachment C1
# Aconex Project Configuration and Instruction Manual

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# Appendix D
# Health and Safety Management Plan

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PORT OF ALASKA MODERNIZATION PROGRAM

# Appendix D: Health and Safety Management Plan

Revised October 2022

*Prepared for*
Port of Alaska

Jacobs HDR

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# Project Health, Safety & Environmental Plan

| Revision | Date | Issued for/Revision Details | Revised by |
|---|---|---|---|
| 5 | 7/1/2022 | Update and new template | Mike Sinon |
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Attachment D7 Verbal Reporting Chain

# Introduction

## 1.1 Use, Purpose and Scope of HSE Plan

The objective of this HSE Plan is to ensure that project risks are eliminated or mitigated through the identification of hazards, assessment of risk and the application of effective control measures and to achieve a safe and healthy workplace for the PMO to whom we have a legal and moral duty of care. Further, there is a requirement to ensure that our PMO activities and that of our Sub-consultants/Subcontractors are conducted in an environmentally responsible manner.

The Program Management Office (PMO) has undertaken structured hazard identification and risk assessment process and will develop and implement safe working procedures for delivery of our services on Port of Alaska Modernization Program (PAMP).

PAMP Contractors are required to develop HSE Plans complying with the Port Safety Plan. These requirements are referenced in the Design and Construction Manuals in Attachment D-2.

## 1.2 Organizations involved in the Project

| | |
|---|---|
| **Owner:** | Municipality of Anchorage |
| **Jacobs' Client:** | Steve Ribuffo, Port of Alaska |
| **Designer:** | Varies |
| **Principal Contractor/Resident Engineer:** | Varies |
| **Contractor(s):** | Varies |

## 1.3 PMO Personnel involved in the Project

An organization chart showing the PAMP Leadership is shown as Figure XX in the PAMP Program Management Plan.

## 1.4 Project HSE Support Staff

Table 2-2. Project HSE Support Staff

| Name | Role | Phone # | e-mail | Office |
|---|---|---|---|---|
| Mike Sinon | HSE Manager | 406.559.0891 | michael.sinon@jacobs.com | SEA |
| Carla Rellergert | Environmental Manager | 303.330.6495 | Carla.Rellergert@Jacobs.com | DEN |
| Connie Kolajtowicz | Industrial Hygienist | 949.533.4228 | Connie.K@Jacobs.com | SWF |

## 1.5 Program Scope

The program scope of the PAMP includes what is, for the most part, a one-for-one replacement of the original marine infrastructure. The PAMP major product element scopes will be defined in greater detail later in this document and further refined in the subordinate PMPs; however, the following description represents the approved PAMP scope:

- Replace container and general cargo terminals 1, 2, and 3, the latter two used by Matson Inc.
- (Matson) and Totem Ocean Trailer Express Inc. (TOTE), the terminals' current preferential users, with two seismically resistant, composite, pile-supported berthing facilities. The new Terminal 1 will feature four 100-foot gauge container cranes to support Matson's lift-on/lift-off (LO/LO)

operations, and the new Terminal 2 will be configured with custom-configured trestles for TOTE's roll-on/roll-off (RO/RO) operations.

- Replace the existing petroleum, oil, and lubricant (POL) wharves 1 and 2 with seismically resistant, composite, pile-supported berths located south and more seaward of the exiting POL2 wharf.
- Structurally stabilize the Northern Extension, which was constructed under the previous POA
- Expansion Project (PIEP), and adjust the shoreline to optimize the local water current regime with the retention of backlands.
- Replace the administration and operations functions that will be displaced when the existing transit terminal facility is ~~raised~~ razed as part of the demolition of the existing Terminal 1.

## 1.6 Program Location

Port of Alaska Modernization Program Management Office
1980 Anchorage Port Road, Anchorage AK

## 1.7 Identifying HSE Objectives Targets & Indicators

The following Objectives and Targets aim to support the provision of HSE management as the highest priority and without compromise.

The Program Manager shall ensure the HSE objectives and targets are relevant, communicated and reviewed as an indicator of the project HSE performance.

The Objectives, Targets and Indicators for this project are:

| Objective | Target | Indicator |
|---|---|---|
| HSE Planning Completed | 100% | Reviewed and approved HSE plans |
| Training and Induction | 100% | Ensure training and inductions are complete and saved/filed in the project folders |
| BZO Process in place | TBD, project size dependent | BZOs being submitted |
| StepBack process being used | All staff understand StepBack process | Covered during induction |
| Driver Training | 100% | Check with HSE to ensure all staff driving for company business have their "Permit to Drive" |
| Leadership Walks | 1 per quarter | Track number of leadership walks |

## 1.8 Identifying Legal and Other Requirements

Legal and other obligations include:

- Client requires Jacobs to have a Health and Safety Management Plan.
- OHS and environmental legislation including acts and regulations relevant to the project hazards and environmental aspects.
- Codes of practice and industry guidelines

The following HSE legislation to this project can be found in Attachment D-2, HSE Legislative Compliance.

# Project Scope and Schedule

## 2.1 Description of Field Work (Jacobs and/or Subcontractors)

The detailed Scope of Services for this project is included in Attachment D-3.

## 2.2 Work Environment

The physical working environment for the program will be a combination of an office environment, home working environment, as well as some personnel visiting the active construction areas.

Table 2-1. Project Workforce and Schedule

| Project Start date: | March 2014 |
|---|---|
| Planned project completion date: | March 2035 |
| Level of Jacobs site presence: | Full-time (4 employees) |
| Level of Jacobs working from home: | Full-time (4-8 employees) |
| Level of Jacobs sub-contractors site presence: | Full-time (5-8 employees) |
| Hours of working: | variable |
| Planned date of site work start: | Ongoing |
| Planned date of site work finish: | March 2035 |

## 2.3 Contract Indemnification

The Master Services Agreement includes a clause (Section 13.11) that Construction Contracts will have a “provision whereby the contractor will indemnify the PMC (Program Management Consultant) for the contractor’s negligence.”

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# HSE Roles and Responsibilities

All project personnel and its visitors are to strive to meet the project-specific HSE goals outlined below.

- Create an incident-free environment
- Establish and share BeyondZero® culture
- Accomplish zero incidents (safety, environmental, security, etc.)
- Follow company HSE procedures
- Reduce risks to our health and the environment by identifying, evaluating, and (where necessary) mitigating hazards and impacts.
- Ensure 100% participation in training programs, conformance to company requirements and HSE compliance
- 100% participation in safety meetings
- 100% on-schedule completion of environmental, safety and security corrective actions
- Achieve recognition from the client for outstanding performance

Overall safety for the construction packages is the responsibility of the contractor. Day-to-day safety administration for Jacobs' staff is the responsibility of the PMO field representative.

## 3.1 Project HSE Activities

| | |
|---|---|
| **Actions by Jacobs Project Manager:** | • Support the implementation of this HSE Plan, communicate it to the Jacobs employees working at the field or site workplace, monitor their compliance with it, and hold the Jacobs employees and our subcontractors accountable for its proper execution<br>• Ensure safe systems of work are in place for all Jacobs employees and our subcontractors and implemented in accordance with this HSE Plan<br>• Ensure that task/location-specific risk assessments are prepared for hazards potentially affecting Jacobs' employees or our subcontractors and for hazards created by the activities of Jacobs' employees or our subcontractors that potentially affect others.<br>• Ensure adequate welfare arrangements are available.<br>• Provide or arrange HSE induction and training for the Jacobs team<br>• Obtain written evidence of inductions and briefings held in compliance with this HSE Plan<br>• Ensure HSE monitoring is carried out<br>• Report all HSE incidents<br>• Ensure prompt and adequate treatment for injured employees and subcontractor personnel;<br>• Ensure adequate investigation and analysis of accidents (non-injury and injury);<br>• Manage subcontractor HSE<br>• Give recognition for good HSE performance/working practice<br>• Take a leadership position on HSE issues where there are clearly unacceptable HSE standards or practices being employed at any workplace where our employees are present<br>• Ensure application of these requirements to Jacobs subcontractors<br>• Demonstrate leadership of and commitment to HSE, setting a personal example at all times |

| | |
|---|---|
| **Actions by Jacobs Project Manager or Safety Liaison:** | • Implement the HSE program;<br>• Effectively communicate the Company's HSE goals, objectives, policies and procedures to each member of your work group;<br>• Establish an environment of "zero tolerance" for safety non-compliance and promote a positive atmosphere for HSE excellence;<br>• Plan each task with HSE as an integral part, and conduct pre-job risk assessments of all work activities;<br>• Orient the worker with respect to:<br>- The work group (the new worker),<br>- The work area and hazards that may exist,<br>- General and specific safety hazards,<br>- Accident (non-injury and injury) reporting requirements, and<br>- The employee's HSE responsibilities;<br>• Assign employees only to tasks for which they are trained and qualified;<br>• Monitor worker and work group performance for quality and safe work practices;<br>• Correct any deficiencies noted and educate the worker to improve work methods;<br>• Report and investigate all non-injury and injury incidents and<br>- Secure incident scene,<br>- Actively participate in the investigation, and<br>- Implement corrective actions;<br>• Assure good housekeeping at all times;<br>• Encourage crew members to actively participate in the HSE program; and<br>• Enforce Company and project HSE policies and procedures at all times. |
| **Actions by Corporate HSE Manager:** | • Provide HSE advice and guidance to the Jacobs project team.<br>• Carry out HSE inspections and audits for compliance with this Project HSE Plan as required by the Program Manager and Corporate. |
| **Actions by all Jacobs' project employees:** | • Comply with procedures established for their safety and health and for preservation of the environment<br>• Apply Jacobs mandatory StepBack Process and Safety Observation Report (SOR) process to site or fieldwork carried out by Jacobs employees or our subcontractors.<br>• Promptly report incidents involving personnel or property to your supervisor, no matter how minor.<br>• Inspect, use, and maintain personal protective equipment provided for you;<br>• Plan your work and try to anticipate any hazards you might encounter; and<br>• ***Intervene whenever imminent danger situations are observed.*** As construction professionals, we are expected to recognize and take prompt action whenever imminent danger situations are observed on any project we are working on. We have defined imminent danger as "any condition where there is reasonable certainty that a danger exists that can be expected to cause death or serious physical harm immediately." Typically, such conditions would include; electrocution hazards, falls from heights, improperly shored excavations, and crush hazards by heavy equipment. Once appropriate actions are taken to remove any exposed persons from harm's way, the unsafe condition/act and our actions should be documented in writing to the Client. |

# Identification of Hazards, Assessment and Control of Risk

A comprehensive risk assessment shall be performed based on the scope of the project and the potential hazards in the workplace. The risk assessment shall take into consideration routine work activities, health hazards associated with chemical and biological exposures, and hazards associated with working in proximity to operating facilities.

An HSE Project Risk Register Attachment D-1 shall be developed to identify overall risks. Jacobs Project Manager shall ensure the register and associated controls are current, implemented and communicated.

For each work activity in each project phase, a risk assessment will be undertaken to identify the hazards, assess the risk, and define the controls necessary to eliminate or mitigate the risk. Using the findings of the risk assessments to develop location/task-specific safe systems of work for the field/site activities that are to be carried out by Jacobs personnel.

Where possible, opportunities to enhance environmental protection and contribute to our client's sustainability objectives are identified

Subcontractors/Sub-consultants shall prepare safe work procedures that are relevant to their work and responsibilities on the project. The Project Manager shall review these documents prior to commencement of work for conformance with Jacobs project HSE objectives, legislative requirements and contractual requirements.

Table 4-1. Physical Hazards

| Hazard | Safe Work Practice & Precautions |
|---|---|
| **General Operations**. | • Wear footwear appropriate for facility walkthrough<br>• Observe and heed caution and warning signs<br>• Observe for tripping hazards or sharp edges of equipment or materials<br>• Do not ride freight elevators unless authorized by facility representative<br>• Do not jump from or onto loading docks or other elevated platforms<br>• Smoke only in designated areas<br>• Note location of emergency eye wash and deluge shower locations<br>• Remain clear of machinery, particularly unguarded areas—whether it is currently operating or not<br>• Do not contact machinery or contents |
| **Stairs/Fixed Ladders** are encountered in accessing chiller rooms, elevator control rooms, roofs, catwalks, and some subbasement structures. | • Use handrails, and wait until the previous person is off<br>• Footwear for using ladders should have a defined, square heel<br>• Do not use defective ladders or ladders tagged as "unsafe"<br>• User must face the ladder when climbing<br>• Keep belt buckle between side rails<br>• User must use both hands to climb<br>• Fixed ladders $\geq$ 20' in height must be provided with fall protection devices |
| **Electrical** enclosures and equipment (panel boxes, telephone circuits, transformers, machinery) are frequently encountered. | • Do not open any electrical enclosures or remove covers<br>• Remain clear of any open electrical panels or boxes<br>• When entering electrical closets/rooms, ensure adequate lighting exists and do not contact any equipment<br>• Do not disturb lockout-tagout equipment |

Table 4-1. Physical Hazards

| Hazard | Safe Work Practice & Precautions |
|---|---|
| **Noise** areas are occasionally found in compressor rooms and around certain machinery. | • Observe posted signs—wear hearing protection as posted<br>• As a general rule, if you are required to shout in order to converse with co-worker, hearing protection is required |
| **Lifting** boxes of records or materials brought to the facility. | • Proper lifting techniques must be used when lifting any object. (do not twist)<br>• Split heavy loads into smaller loads<br>• Make sure the path of travel is clear prior to the lift. |
| **Concrete and Masonry** may be performed in the area where Jacobs employees may be performing site walks | • Do not position yourself in areas where buckets are lifted overhead<br>• Maintain a safe distance from formwork and shoring being removed from concrete structures<br>• Maintain a safe distance from precast and lift-slab concrete being lifted into position until physically secured<br>• Do not enter limited access zones during concrete or masonry wall construction. |
| **Cold Stress** | • Be aware of the symptoms of cold-related disorders, and wear proper, layered clothing for the anticipated fieldwork. Appropriate rain gear is a must in cool weather.<br>• Consider monitoring the work conditions and adjusting the work schedule using guidelines developed by the U.S. Army (wind-chill index) and the National Safety Council (NSC) or National Weather Service.<br>• Wind-Chill Index is used to estimate the combined effect of wind and low air temperatures on exposed skin. The wind-chill index does not take into account the body part that is exposed, the level of activity, or the amount or type of clothing worn. For those reasons, it should only be used as a guideline to warn workers when they are in a situation that can cause cold-related illnesses.<br>• Observe one another for initial signs of cold-related disorders.<br>• Obtain and review weather forecast – be aware of predicted weather systems along with sudden drops in temperature, increase in winds, and precipitation. |

Table 4-1. Physical Hazards

| Hazard | Safe Work Practice & Precautions |
|---|---|
| **Heat Stress** | • Review weather forecast to determine the heat index for the area you will be working; National Weather Service.<br>• Drink plenty of water and electrolyte drinks before, during, and after working in a hot environment<br>• Acclimate yourself by slowly increasing workloads (e.g., do not begin with extremely demanding activities).<br>• Use cooling devices, such as cooling vests, to aid natural body ventilation. These devices add weight, so their use should be balanced against efficiency.<br>• Use mobile showers or hose-down facilities to reduce body temperature and cool protective clothing.<br>• Conduct field activities in the early morning or evening and rotate shifts of workers, if possible.<br>• Avoid direct sun whenever possible, which can decrease physical efficiency and increase the probability of heat stress. Take regular breaks in a cool, shaded area. Use a wide-brim hat or an umbrella when working under direct sun for extended periods.<br>• Provide adequate shelter/shade to protect personnel against radiant heat (sun, flames, hot metal).<br>• Maintain good hygiene standards by frequently changing clothing and showering.<br>• Observe one another for signs of heat stress. Persons who experience signs of heat syncope, heat rash, or heat cramps should consult the SC to avoid progression of heat-related illness. |
| **Lightning and thunderstorms** are common in Colorado and can develop quickly | • Monitor the weather to identify potentially hazardous weather approaching the area (TV/cable, radio, etc.).<br>• Decide when to suspend activities and move to a safe location.<br>• Know and use the 30-30 Rule (promoted by the National Oceanic and Atmospheric Administration). When the time between lightning and thunder is 30 seconds or less, immediately seek safe shelter.<br>• Wait at least 30 minutes after hearing the last thunder before leaving safe shelter.<br>• If the lightning can't be seen, hearing thunder means you should seek safe shelter.<br>• Note that the 30-30 Rule is best suited for existing thunderstorms moving into the area. It cannot protect against the first lightning strike.<br>• Safe evacuation sites include substantial and enclosed buildings and fully enclosed metal vehicles with the windows up. |
| **Uneven walking surfaces** are common in field observations | • Institute and maintain good housekeeping practices<br>• Pick up tools and debris in the work area<br>• Walk or climb only on equipment and/or surfaces designed for personnel access<br>• Be aware of poor footing and potential slipping and tripping hazards in the work area<br>• Before walking up or down inclines, plan the safest route. Don't attempt if it is too steep or slippery. |
| **Biological Hazards** such as animals, snakes, flying insects can be encountered during field site walks | • Avoid any obvious nests or dens in the work area<br>• Do not disturb or harass any wildlife<br>• If you are stung or bitten, report the incident to HSE and call WorkCare |

Table 4-1. Physical Hazards

| Hazard | Safe Work Practice & Precautions |
|---|---|
| **Working near or above water** | • Fall protection should be provided to prevent personnel from falling into water. Where fall protection systems are not provided, and the danger of drowning exists, U.S. Coast Guard-approved personal flotation devices (PFDs), or life jacket, shall be worn.<br>• Inspect PFDs prior to use. Do not use defective PFDs.<br>• A life-saving skiff must be provided for emergency rescue.<br>• A minimum of one ring buoy with 90 feet of 3/8-inch solid-braid polypropylene (or equal) rope must be provided for emergency rescue. |
| **Excavations/Trenching** | • Staff exposed to excavation hazards must complete initial excavation training by completing the 10-Hour Construction Safety Awareness training course.<br>• Persons or materials standing at the edge may be exposed to falls and crushing injuries. Never stand next to an excavation edge that is not protected against cave in.<br>• Sloping, benching, shoring, shielding, or other protective systems are required to protect personnel from cave-ins except when the excavation is made entirely in stable rock or is less than 5 feet (1.5 m) deep and there is no indication of possible cave-in, as determined by the excavation competent person<br>• Trenches greater than 4 feet deep shall be provided with a ladder, stairway, or ramp positioned so that the maximum lateral travel distance is no more than 25 feet.<br>• Guardrails, fences, or barricades shall be installed at excavations 6 feet or deeper when the excavations are not readily visible.<br>• Do not enter an excavation unless completely necessary, and only after speaking with the competent person who has completed the daily inspection and has authorized entry.<br>• Follow all excavation entry requirements established by the competent person.<br>• Do not enter excavations where protective systems are damaged or unstable.<br>• Do not enter excavations with the potential for a hazardous atmosphere until the air has been tested and found to be at safe levels.<br>• Do not enter excavations with accumulated water unless adequate precautions have been taken to protect employees against the hazards posed by water accumulation.<br>• Complete a Safe Plan of Action prior to entering any excavation. |

Table 4-1. Physical Hazards

| Hazard | Safe Work Practice & Precautions |
|---|---|
| **Fall Protection** | • Fall protection systems must be used to eliminate fall hazards when performing construction activities at a height of 6 feet or greater<br>• Jacobs Staff exposed to fall hazards must complete initial fall protection training by completing the OSHSA 10-Hour Construction Safety Awareness training.<br>• The company responsible for the fall protection system shall provide a fall protection competent person to inspect and oversee the use of fall protection system.<br>• Only one person shall be simultaneously attached to a vertical lifeline and shall also be attached to a separate independent lifeline.<br>• Remain within the guardrail system when provided. Leaning over or stepping across a guardrail system is not permitted.<br>• Do not stand on objects (boxes, buckets, bricks, blocks, etc.) or ladders to increase working height on top of platforms protected by guardrails.<br>• Inspect personal fall arrest system components prior to each use. Do not use damaged fall protection system components at any time, or for any reason.<br>• Personal fall arrest systems shall be configured so that individuals can neither free-fall more than 6 feet, nor contact any lower level.<br>• Only attach personal fall arrest systems to anchorage points capable of supporting at least 5,000 pounds. Do not attached personal fall arrest systems to guardrail systems or hoists.<br>• Do not use personal fall arrest systems that have been subjected to impact loading.<br>• When using a personal fall arrest system for fall protection a rescue plan must be put together to assist the employee who has fallen and is now suspended by the system. |
| **Heavy Equipment** | • Equipment shall not be used to lift personnel<br>• Equipment which is operating in reverse must have a reverse signal alarm<br>• When equipment is unattended, power should be shut off, brakes set, blades/buckets landed, and shift lever in neutral<br>• Always be vigilant when walking or driving around heavy equipment. Be sure to make eye contact and wave to heavy equipment operators. Wait for them to wave back so you know they saw you and are aware of you presence.<br>• Stay out of heavy equipment's blind spots, if you can't see the operator chances are he can't see you either. |
| **Working from a Barge (slippery surfaces, falling overboard)** | - Walk at a normal rate, keeping your hands out of your pockets<br>- Slow down when moving between different surfaces<br>- Do not run<br>- Minimize short stops<br>- Avoid sharp turns<br>- Modify your way of walking to match the surface, such as an icy deck<br>- Do not jump from one barge to another<br>- Do not climb on cargo, supplies, or equipment instead of using a ladder<br>- Do not step on hatch covers<br>- Avoid walking along the unguarded edge of a barge |

Table 4-1. Physical Hazards

| Hazard | Safe Work Practice & Precautions |
|---|---|
| | - Watch out for reduced visibility due to poor lighting and weather conditions; if working at night, be sure there is adequate illumination (e.g., flashlight, headlight, light tower)<br>- Wearing Appropriate Footwear:<br>- Wear safety shoes or boots with slip-resistant soles as appropriate<br>- Keep shoes clean of mud, snow, ice, spilled liquids, and debris<br>- Employees walking or working on deck must wear a U.S. Coast Guard-approved life jacket or buoyant work vest, also called a life preserver or Personal Flotation Device (PFD)<br>- These PFDs should be fully buckled, snapped, or zipped whenever there is a hazard of falling into the water, regardless of the size of the barge<br>- While a PFD is not required to be worn while a worker is inside an enclosed cab or equipment compartment on a barge, each worker should have a PFD accessible to them at all times. This safety precaution will allow employees the opportunity to don a PFD in a reasonable amount of time during an emergency (i.e., vessel sinking, fire, etc.)<br>- Also, each vessel 26 feet or longer must have at least one approved life ring buoy which is immediately available<br>- Barges should be inspected regularly to check for missing or damaged PFDs, missing lifelines, and burned-out lights<br>- To help prevent employees from falling overboard, the edge of the deck should be marked with contrasting paint, or when practical installed with guardrails or handrails<br>- If the separation between a barge and the dock or another vessel is more than 12 inches, a gangway or ladder must be used<br>- Look for warning signs such as employee fatigue, complacency, and lack of concentration and resolve these issues before an overboard incident occurs<br>- It is critical to have clear procedures in place in case someone falls overboard:<br>- Man-overboard procedures should incorporate the use of stand-by boats, life rings with appropriate length of rope (90 feet minimum, and ladders that extend at least three feet above and below the water surface<br>- They will need assistance to get back on board; this must be accomplished quickly, particularly if the water is frigid, the person is not wearing a life jacket, is tangled in a line, or caught in a current<br>- Crews should practice man overboard drills regularly<br>- In areas where the water is frigid, additional precautions such as immersion suits should be considered |

Table 4-1. Physical Hazards

| Hazard | Safe Work Practice & Precautions |
|---|---|
| **Cranes** | • Before any crane or hoisting equipment is placed in use, it shall be inspected and tested and certified in writing by a competent person.<br>• The inspection for deficiencies during operation shall include, at a minimum:<br>- All control mechanisms for maladjustment<br>- Control and drive mechanisms for excessive wear and contamination by lubricants and other foreign material<br>- Safety devices, including but not limited to boom angle indicators, boom stops, boom kick out devices, anti-two block devices, and load moment indicators where required<br>- Air, hydraulic, and other pressurized lines for deterioration or leakage, particularly those which flex in normal operation<br>- Hooks and latches for deformation, chemical damage, cracks, or wear<br>- Wire rope revving for compliance with hoisting equipment manufacturer's specifications<br>- Electrical apparatus for malfunctioning, signs of excessive deterioration, dirt, or moisture accumulation<br>- Hydraulic system for proper fluid level<br>- Tires for proper inflation and condition<br>• The hoisting equipment for level position after each move and setup<br>• If any deficiency is identified, the competent person shall make an immediate determination as to whether the deficiency constitutes a hazard.<br>• If the deficiency is determined to constitute a hazard, the hoisting equipment shall be removed from service until the deficiency has been corrected.<br>• A crane logbook shall be used to record operating hours and all crane inspections, tests, maintenance, and repair. The log shall be updated daily as the crane is used and shall be signed by the operator and supervisor. Service mechanics shall sign the log after conducting maintenance or repairs on the crane.<br>• Crane operators shall possess at least one of the licenses or certifications.<br>• Only designated qualified personnel shall operate cranes and hoisting equipment. Proof of qualification shall be provided.<br>• The operator shall be responsible for those operations under the operator's direct control. Whenever there is any doubt as to safety, the operator shall have the authority to stop and refuse to handle loads until safety has been assured. |
| **Potential for Contaminated Soil/Sediment/Water (PPE and Possible Air Monitoring?)** | • The chemicals' hazards, as determined from the Safety Data Sheets (SDS) and other appropriate references.<br>• Appropriate safeguards for using that chemical, including personal protective equipment.<br>• The location and proper use of emergency equipment.<br>• How and where to store the chemical properly when it is not in use.<br>• Proper personal hygiene practices.<br>• The proper method for transporting chemicals within the facility.<br>• Appropriate procedures for emergencies, including evacuation routes and locations of eyewash/safety showers. |

## 4.1 Driving Safety

All Jacobs personnel driving a personal, company or rented vehicle for business purposes shall follow these actions:

Apply the requirement set out in JJ-HS-PL-0002-JJ Driving Safety Policy

Complete the Jacobs (ADT) approved driver assessment and training. Once completed a permit to drive will be issued.

Select a suitable vehicle that is properly maintained – hire vehicles may only be rented through Jacobs' preferred suppliers

Ensure that your journey is thoroughly planned and that the most practical route is identified

Ensure the vehicle is checked prior to a journey

Ensure that you are competent, understand the risks and have had suitable training

Ensure TSPA documentation, breakdown and recovery details, appropriate first aid and safety equipment are taken on the journey with you.

A **Travel Safe Plan of Action (TSPA)** can assist you in traveling and arriving at your destination safely.

## 4.2 Safe System of Work & Point of Work Risk Assessment

A Hazard Identification and Risk Assessment (HIIRA) and the subsequent development of a Safe System of Work (SSOW) must be undertaken for all tasks undertaken by Jacobs Employees and their sub-contractors.

To ensure that every site task carried out by Jacobs personnel or our subcontractors receives proper HSE preparation immediately before commencement of work, a point of work risk assessment will be undertaken by the individual or team carrying out the task. By undertaking and recording the point of work risk assessment, those carrying out the task shall confirm that the basis of the safe system of work is still valid and/or identify and document any additional hazards present and any additional control measures required to carry out the task safely.

## 4.3 StepBack

A process that compliments the work planning process, whereby employees can step back from their activities in order to further evaluate risk in their work areas and to identify additional hazards that may be present in the work area.

StepBack is a task level, personal and team risk assessment and hazard identification process developed to help ensure that routine and non-routine tasks are completed without an adverse event occurring.

The guiding principles of StepBack are:

- Engage your mind at every stage during the execution of a task. Continually look for hazards and changes in the environment that may cause harm.
- Do you need to change something, or has something changed that will affect the task?
- Stop the task if you believe it cannot be completed safely
- After the job is finished check the area and make sure it is safe. Inform others if hazards exist. Update the pre-task plan.
- HSE StepBack Process

## 4.4 Occupied Facility Siting

See work instruction - JJ-HS-WI-0301-JJ Occupied Facility Siting

Jacobs requires that a Facility Siting Analysis (FSA) is performed for every occupied facility. Facilities that serve as regular or routine accommodation for one or more worker(s), including, but not limited to, field offices, office trailers, lunch and break facilities, and equipment staging and storage facilities.

The FSA serves primarily as a screening tool to identify hazards and assess risk to buildings, temporary facilities and personnel.

Occupied Facility Siting Review Checklist.

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# Training and Competency

All personnel must be competent before starting work at any field or site workplace.

## 5.1 HSE Induction

All Jacobs project employees including and Subcontractors/Sub-consultants either visiting or working on site shall undertake a HSE induction.

## 5.2 Skills and Competency

The PAMP leadership shall ensure that all employees, including subcontractors/subconsultants have the correct training, skills and experience to undertake the tasks they are engaged on. All project staff will have the necessary licenses to drive vehicles, operate equipment and undertake specialized work as required by law.

Sub-consultants shall ensure records are kept of all induction, HSE Plan and Safe Work Method training. Sub-consultants shall ensure certificates and licenses are documented in appropriate records.

Review BIAF HSE Training and Competency work instruction to ensure a consistent approach to HSE training and competency requirements.

IB-HS-WI-0200-IB BIAF Training and Competency

| Training Course | Source | All Project Staff *(Field HSE Training Category)* | Project Manager Role | Project Safety Liaison Role | Frequency |
|---|---|---|---|---|---|
| Field HSE Awareness | e3 Learning | X | | | |
| Global P&PS HSE Induction | e3 Learning | X | | | |
| ADT | Online through ADT | X | | | |
| Global Chemical Hazard Communication Program Awareness | e3 Learning | X | | | |
| OSHA 10-Hour - Construction | Classroom or e3 Learning | X | | | |
| Project HSE Plan Orientation | Classroom/Virtual | X | | | |
| Contractor Health and Safety Orientation | If required | X | | | |
| Health, Safety & Environment for Project Managers | e3 Learning | | X | | |
| Safety Liaison Initial Training | e3 Learning | | X | X | |
| Safety Liaison Refresher Training | e3 Learning | | | X | 3 Years |
| Bloodborne Pathogens Training | e3 Learning | | | X | Annually |
| CPR / First Aid / AED | Classroom/Online | | | X | Expiration |
| Critical Risk Awareness | e3 Learning | | X | | |
| Project Environmental Management | e3 Learning | | X | | |

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# HSE Program

## 6.1 Safe Work Permits

Permits to work will be issued in accordance with Jacobs' procedures. In some cases, the client/owner work permit process will be used to ensure that the appropriate precautions are taken prior to work commencing.

## 6.2 Project PPE and Dress Code Requirements

Define the minimum personal protective equipment and appropriate dress (PPE Guidance - USA) required for entry onto the project site.

Additional project or task specific requirements such as flame-retardant overalls, color coded safety helmets, as well as dress requirements, shall be included as appropriate.

The typical minimum personal protective equipment and appropriate dress required for field project personnel includes:

- Hard hat meeting ANSI Z89.1
- Safety glasses with side shields meeting ANSI Z87.1
- Protective toe over the ankle footwear meeting ASTM 2412/2413
- Long pants/slacks
- Shirt/blouse with minimum four-inch sleeves
- Gloves - Type selected by hazard exposure assessment
- High Visibility Vest or other Apparel ASNI Class 2

PPE can be ordered via the *Jacobs Service Now Portal* using the *How to Submit a PPE Request* process. If PPE, beyond the minimum standard, is required the HSE Manager must be engaged prior to the task.

## 6.3 Recognition Programs

Recognition can be at the project, group, or individual levels and may include recognition for milestone achievement or for participation in HSE activities. Examples of recognition milestones include:

- Achieving project HSE milestones (e.g., participation in safety program, implementation of safety initiatives, BZO submittals, etc.),
- Reducing incidents by category (e.g., first aids, near misses, etc.),
- BeyondZero Awards including CEO BZO Monthly Award, BeyondZero Excellence Award, Significant Milestone Award and The Jacobs Chairman's Safety Award, and/or
- Timely Award Program nomination by employee's manager

## 6.4 Security Measures

The site security requirements include the following:

- All personnel must complete the Client required Site Safety Briefing and obtain a Site Badge
- Random vehicle inspection may be conducted
- In order to take photographs on site, an annual Photograph Authorization Form must be on file.

## 6.5 Traffic Management Plan and Vehicle Safety

During certain work tasks, the establishment of traffic control to adequately protect workers and the public may be required on-site by State or local specific requirements, up to and including permits. Additionally, project specific and task-specific requirements will be determined by the PM on a case-

by-case basis. Only approved traffic control devices will be used on public roadways in accordance with the applicable State or local regulatory guidance.

There are no site-specific traffic related requirements at this time.

## 6.6 Facilities

As applicable, the location and access of common areas and facilities on this project should be identified and listed in this section of the PHSEP.

- Break facilities are located in West Wing of PMO Office Space
- Showers, Locker rooms and changing rooms are located upstairs
- First aid supplies are located in West Wing of PMO Office Space
- AED is located in East Wing of PMO Office Space
- Smoking areas are located South of PMO

## 6.7 Medical Surveillance

There are no site-specific Medical Surveillance requirements at this time.

Medical surveillance provides supporting information for evaluating the effectiveness of workplace hazard controls for chemical, physical and biological hazards and to comply with regulatory requirements of OSHA *29 CFR 1910.120(f) Hazardous Waste Operations and Emergency Response (General Industry)*;, *29 CFR 1926.65(f) Hazardous Waste Operations and Emergency Response (Construction)*; and *29 CFR 1910.134(b) (10), Respiratory Protection*, and other established guidelines.

Review work instruction, HS-HS-WI-0101-PC-G-03 Occupational Health Guideline

## 6.8 Drug and Alcohol Testing

Jacobs does not tolerate illegal drugs, or any use of drugs, controlled substances, or alcohol that impairs an employee's work performance or behavior. Jacobs has established a policy (US-EB-PL-6830-US Drug and Alcohol-Free Workplace) that its employees and subcontractors shall not be involved in any manner with the unlawful manufacture, distribution, dispensation, possession, sale, or use of illegal drugs in the workplace. The use or possession of alcohol in the workplace is also prohibited, except for Jacobs Management authorized functions.

Drug and Alcohol-Free Workplace Policy

# Communication, Consultation & Reporting

## 7.1 Communication

Communication on HSE matters will be through internal project team meetings and through regular client meetings.

Communication with employees will be in a form and/or language readily understandable by all affected employees on matters related to occupational safety and health, including provisions designed to encourage employees to inform their supervisors of hazards at the worksite without fear of reprisal.

Jacobs will inform all employees of the companies:

- New hire orientation including HSE policies and procedures.
- Workplace safety and health training programs.
- Regularly scheduled safety meetings with lessons learned included with all HSE incidents.
- Posted or distributed safety information.

## 7.2 Safety Meetings

Safety meetings provide a method for maintaining safety awareness and communicating safety-related information, training to employees and opportunity for input and feedback in performing daily work activities.

Prior to field activities being conducted, the PM, onsite supervisors or other field leads shall conduct task planning and reviews with their respective teams/crew members. Information discussed, and training performed shall pertain to current project activities and scope of work. It is encouraged to use this time for employee input and task-specific training. Safety Meeting Attendance form should be completed and maintained on site for the duration of the project.

## 7.3 Consultation

Consultation on HSE issues shall include:

- Daily pre-start briefings
- Risk Assessments and Safe System of Work development,
- And regular toolbox talks.

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# Management of Subcontractors to Jacobs

## 8.1 Procurement and pre-start

The Project Manager subcontracting any field or site-based work activity will take reasonably practicable steps to ensure that our subcontractor is competent and able to carry out work safely before they start work. Specifically, they will:

- Assure all subcontractors performing field or site-based work are approved to provide services per IB-HS-WI-0510-IB Supplier HSE Prequalification and Selection
- Carry out competency checks i.e. view safety policy, risk assessments, ascertain experience, technical knowledge & competence
- Provide the subcontractor with information on foreseeable hazards and the controls required by Jacobs
- Communicate Jacobs HSE expectations in our subcontract and at start-up
- Discuss job/safety requirements and co-ordinate work activities
- Demand and review the subcontractor's task/location specific safe systems of work and risk assessments
- Ensure that the subcontractors' personnel are briefed on their own risk assessments and safe systems of work
- Coordinate work activities which may require an emergency response with the Client Representative
- Determine level of supervision to be provided by subcontractor and Jacobs
- Provide a Jacobs induction
- Ensure a Client induction is given where required

Review HS-HS-WI-0520-PC-F-01 Health, Safety, and Environment Requirements for Subcontractors

Include Subcontractor list in table:

| Company | Contact | Phone | Email |
|---|---|---|---|
| HDR | Kevin Doyle | 907.952.0551 | Kevin.doyle@hdrinc.com |

## 8.2 During work

The Project Manager will:

- Ensure that our subcontractor pre shift briefing and point of work risk assessment immediately before commencement of work
- Monitor our subcontractor when they are working in proportion to the risk
- Hold them accountable for any substandard HSE performance.

## 8.3 After work

The Project Manager will review and document the subcontractor's performance and consider:

- Was subcontractor satisfactory?
- Was our risk assessment valid?
- Any changes for the future?

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# Monitoring

## 9.1 Operational Project Reviews

HSE performance of the Jacobs project team on projects will be reviewed by the DPEs at Operational Project Reviews (OPRs). Evidence will be required to be presented by the Jacobs PM to demonstrate that:

- A Project HSE plan is in place that is reviewed, approved and current
- Safe systems of work are in place for any field activity
- Competent people are engaged on the Project team
- Competent subcontractors are engaged to carry out work on our behalf
- SORs are being raised
- StepBack is being used effectively
- Any incidents have been reported, investigated and the lessons learned communicated
- Deficiencies and recommendations arising from Project audits by the Corporate HSE Team have been actioned and closed out

## 9.2 Audits and Inspections

Audits and inspections will be undertaken as determined with the project risk profile and an audit schedule will be set and monitored.

Representatives of regulatory agencies may have statutory authority to evaluate Jacobs operations for compliance with health, safety and environmental regulations. Project Staff are to cooperate with all such inspections.

At a minimum, the Jacobs Project Manager will be responsible for managing any regulatory inspections to ensure any infractions observed or identified are noted appropriately and the client receives the correct information pertaining to the inspection. Additionally, the Jacobs Project Manager will participate in inspections to ensure that Jacobs is not cited for something we are contractually responsible for.

In the event of an environmental non-compliance notice (notice of violation, non-compliance letter, citation, fine or other sanction), the Jacobs Project Manager is responsible to contact the Program Environmental Manager or Construction EM.

## 9.3 BeyondZero Observation Reports (BZOs)

Projects are encouraged to identify and submit near misses, at risk conditions, unsafe conditions and positive observations via the BeyondZero Observation form.

No employee or supervisor will be disciplined for reporting unsafe conditions or practices. In addition to the following reporting procedures, employees can also call the Responsible HSE Manager to anonymously report project health and safety concerns.

The following reporting procedures will be followed by project staff:

- Upon detection of any unsafe condition or practice, the responsible employee will attempt to safely correct the condition.
- The unsafe condition or practice will be brought to the attention of the worker's direct supervisor unless the unsafe condition or practice involves the employee's direct supervisor. If so, the project manager needs to be notified at once by the responsible employee.
- The project manager will act promptly to correct the unsafe condition or practice.

## 9.4 Project HSE Reporting Requirements

A brief report on Project HSE Performance will be collated each month.

The report should include;

- Accidents/serious near-misses in the field involving Jacobs personnel (including Agency or self-employed persons)
- Accidents/serious near-misses in the field involving sub-contractors to Jacobs
- Serious accidents involving contractors, third parties or the public.
- Proactive HSE activities carried out
- HSE Audits/tours/inspections carried out
- Upcoming HSE challenges
- Hours worked in the field by sub-contractors to Jacobs
- HSE induction and training

# Incident Reporting and Investigation

Incident reporting and investigation will be carried out in compliance with local regulatory, statutory, Jacobs and where applicable client's contractual requirements.

Jacobs will follow the requirements in *HS-HS-WI-0400-PC Incident Reporting & Investigation* in the event of an incident or near miss. Initial incident reports of all incidents including near misses, injuries, illnesses, property damage, environmental, security events, and motor vehicle incidents will be entered into Jacobs electronic Incident Management platform - Intelex.

**Injury/Illness incident:** Jacobs requires all employees to notify their supervisor immediately if they are injured at work or they believe an injury or illness is caused by work.

**In an Emergency:** If the event is an emergency or you are not sure if it is an emergency, activate your emergency response system (911 or another emergency number applicable to your workplace).

**Non-Emergency:** Contact **WorkCare™** Incident Intervention Hotline **number 888.449.7787** and report the injury to the clinician for assessment and guidance.

To support our Culture of Caring efforts, Jacobs has contracted with **WorkCare™** to provide **24-hour telephonic access to occupational health nurses and board-certified physicians** who will provide clinical guidance if you experience a work-related injury or illness. Should an incident occur, we want to provide our employees the right care, at the right time, in the right setting.

## 10.1 Verbal reporting chain

The Jacobs Verbal Reporting Chain for notifying Jacobs Management of any site or field incidents on the Project involving Jacobs personnel or subcontractors to Jacobs is given in Attachment D-4.

## 10.2 Incident Notification and Reporting

Upon ***any*** project incident (injury, fire, spill, near miss), notify the PM as soon as reasonable. Always ensure that the scene is safe and the appropriate response to the incident is in progress prior to reporting.

In the case of an emergency, call 911 immediately.

***Employees***, if you are injured:

1. In the event of an emergency, call 911.
2. Obtain medical treatment as directed, and follow the medical providers directions
3. Notify your supervisor when reasonable and safe to do so

***Supervisors***, if your employee is injured:

1. Notify your regional HSE manager.
2. Complete the incident report form with as much information as you know at that time.
3. Determine, with the help of your regional HSE Manager if WorkCare should be notified **888-449-7787**.
4. Provide light duty when necessary, and ensure the restrictions given by the medical provider are followed.

## 10.3 Client Incident Reporting Requirements

- Upon any project incident (fire, spill, injury, near miss, death, etc.), immediately notify the Port of Alaska and the PMO Program Manager.
- For JACOBS subcontractor incidents, complete an incident report form and submit to JACOBS Program Manager.
- Notify and submit reports to JACOBS and to the client as required in the contract.

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# Protection of the Environment

Every project has the potential to be subject to environmental regulation and impact the environment based on project office or field activities (e.g., using, storing or shipping/transporting hazardous materials; managing waste; demolition or renovation; asbestos or lead based paint abatement; abrasive blasting; any invasive or land disturbing work; drilling; field sampling and monitoring; etc.).

Identify and obtain required environmental permits to conduct field/site work, including applicable permit compliance environmental plans (e.g., storm water management or pollution prevention plan, spill prevention, control and countermeasures plan, etc.); including adding in the Intelex permit register. (Ref. HS-HS-WI-0320-PC Environmental Permits, Orders, Licenses and Authorizations).

For Environmental guidance / consultation, contact Environmental Manager, Carla Rellergert 303.330.6495.

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# Emergency Preparedness

An emergency may be an injury to a worker, a medical emergency, an evacuation, fire, chemical release or other events. Employees must know what to do if an emergency occurs. This requires pre-planning and communication of these plans to employees. Refer to the Jacobs Emergency Response Plan (ERP) for guidance on an event specific emergency. This ERP establishes the procedures necessary to protect Jacobs employees, property and information during an emergency, disruptive incident or disaster situation.

Ensure project staff are familiar with the Emergency Response Plan Employee Handbook in the event of an emergency, in addition to any client/facility requirements.

## 12.1 Emergency Notification List

| Company/Role | Contact | Phone | Email |
|---|---|---|---|
| Jacobs Program Manager | David Ames | 347.601.8549 | David.Ames@jacobs.com |
| Client Contact | Steve Ribuffo | 907.310.1160 | steve.ribuffo@anchorageak.gov |
| Contractor Contact(s) | Chris Lundfelt | 907.350.5599 | chrisl@pacificpile.com |
| *Additional Contacts* | | | |
| Jacobs MOP | Bud Alto | 907.748.9021 | Bud.alto@jacobs.com |
| NW HSE Manager | Mike Sinon | 406.559.0891 | Michael.sinon@jacobs.com |
| NW Operations Leader | Kristie Casarez | 253.709.6876 | Kristie.casarez@jacobs.com |
| NW Geographical Operations Manager | Julian Hoyle | 702.953.1252 | julian.hoyle@jacobs.com |

## 12.2 Fire Emergency Response

The site-specific fire emergency response procedures include:

- Two fire extinguishers are located in the office space that are inspected monthly
- Jared Akins is the designated Fire Warden
- See location of evacuation of assembly area below

# JACOBS Port of Alaska Evacuation Map


## 12.3 Medical Emergency Response

**In an Emergency:** If the event is an emergency or you are not sure if it is an emergency, activate your emergency response system (911 or other emergency number applicable to your workplace).

**Not an Emergency:** Contact the WorkCare™ Incident Intervention Hotline number and report the injury to the clinician for assessment and guidance.

(888) 449-7787

All incidents, no matter how minor, must be reported to the **Project Manager** and the **Jacobs HSE Manager** as soon as possible.

List and Location of Emergency Equipment and Supplies:

| Emergency Equipment and Supplies | Location |
|---|---|
| Fire extinguishers (A, B, and C classes) | Field Vehicle/Project Trailer/Client Facility |
| First aid kit | Field Vehicle/Project Trailer/Client Facility |
| AED | Project Trailer/Client Facility |
| Personal eye wash | Field Vehicle/Project Trailer/Client Facility |
| Potable water | Field Vehicle/Project Trailer/Client Facility |
| Bloodborne-pathogen kit | Field Vehicle/Project Trailer/Client Facility |

## 12.4 Environmental Spill or Response Procedure – N/A

# Attachment D1
# HSE Project Risk Register

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## HSE Project Risk Register

Check all that apply and contact your HSE manager to ensure restricted risk or high risk HSE tasks are managed appropriately. Refer to the following documents for further information and instruction:

JJ-HS-WI-0101-JJ HSE Risk Management

JJ-HS-WI-0101-JJ-01-G, HSE Risk Implementation

| Restricted Risk Tasks | | High Risk Tasks | |
|---|---|---|---|
| Third party HSE responsibility | ☐ | Project Residual Risks | ☐ |
| Providing HSE Training | ☐ | Critical Risks – Fall protection, Energy Isolation, Confined Spaces, Electrical Work, Excavation/Trenching/Ground Penetration, Drilling, Diving, Working Around Water, Exposure to regulated substances, Charter Air Services | ☐ |
| Asbestos, Lead and Mold | ☐ | Significant Environmental Risks | ☐ |
| Hazardous Waste Generator or Transporter | ☐ | Implementing Client or 3rd Party Environmental Permits | ☐ |
| Environmental Site Assessments | ☐ | Medical/Health Risk | ☐ |
| Standard Setting | ☐ | New Work Category | ☐ |
| Environmental Permits Issued to Jacobs | ☐ | Guarantees – Providing HSE performance or process guarantee by contract | ☐ |
| Arc Flash/PSM Assessments | ☐ | Jacobs Managed Contractors Working Unsupervised | ☐ |
| Radioactive, Mixed Waste, Nuclear Site Work | ☐ | Emergency Response Services | ☐ |
| Explosives, Unexploded Ordinance and/or Military Chemical Agents | ☐ | Controversial/Sensitive work activities | ☐ |

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# Attachment D2
# HSE Legislative Compliance

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HSE Legislative Compliance

| ID | Legislation Reference (SI= Statutory Instruction) | Legislation Title | Summary | Compliance (Full, Partial, Non-compliant) | Evidence to support compliance | Hyperlink |
|---|---|---|---|---|---|---|
| | United States Department of Labor - OSHA | General Industry 29 CFR 1910 & Construction 29 CFR 1926 | Federal OSHA covers Idaho, Montana, North Dakota and South Dakota | Full | Company health and safety policy, project specific health and safety plan, task hazard analysis, training and recordkeeping. | https://www.osha.gov/ |
| | Alaska Occupational Safety and Health (AKOSH) | Alaska Administrative Code | State plan | Full | Company health and safety policy, project specific health and safety plan, task hazard analysis, training and recordkeeping. | https://labor.alaska.gov/lss/oshhome.htm |
| | Environmental Protection Agency (EPA) | Title 40 Code of Federal Regulations | Environmental Regulations | Full | Adhere to company environmental policies.<br>Environmental Management System Manual | Environmental Protection Agency (EPA) |

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# Attachment D3
# Program Scope of Services

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## Program Scope of Services

The Program's Scope of Services is documented in Aconex in the form of a Master Service Agreement and Task Orders.

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# Attachment D4
# HSE Induction Record

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HSE Induction Record

| Project Health, Safety, Security, Environment & Community Induction Record | | |
|---|---|---|
| *Note: Inducted Persons are to TICK YES or NO to each question BELOW.* | | |
| **Questions:** | **Employee** | |
| I have been instructed by the Project Manager (or their nominee) in the following safety and environmental requirements: | **YES** | **No** |
| Review of this Project HSE Plan | ☐ | ☐ |
| Review of Safe system of work guidance | ☐ | ☐ |
| Review of project Hazards – Hazard ID/Impact and risk assessment (HIIRA) | ☐ | ☐ |
| I have been trained in the use of Personnel Protective Equipment | ☐ | ☐ |
| I am aware of the Project Emergency Procedure requirements. | ☐ | ☐ |
| I have been introduced to scope of works and general locations | ☐ | ☐ |
| I have completed an orientation of my work area with my team Leader. | ☐ | ☐ |

| | |
|---|---|
| Project Manager name (print): _____ | Personnel name (print): _____ |
| Signature: _____ | Signature: _____ |
| Date: _____ | Company: _____ |
| | Date: _____ |

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# Attachment D5
# Site Rules

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## Site Rules

Based on best practice and experience, Jacobs has defined a minimum set of control measures (site rules) that are mandatory for all Jacobs employees and our subcontractors at all field and site workplaces irrespective of whether Jacobs has control of the workplace.

### Personal Protective Equipment (PPE) requirements

1. Safety helmets shall always be worn when on a construction site or process plant, and elsewhere when an overhead hazard exists.
2. Safety glasses (wrap around or with rigid side shields) shall always be worn on a construction site, and elsewhere when an eye hazard exists. Dark tinted safety glasses shall not be worn indoors, inside closed structures, or at night.
3. Hearing protection shall be worn when noise levels exceed 85 decibels (dB) or when normal speech cannot be heard at a distance of 2 meters.
4. Work gloves appropriate for the hazard and shirts with sleeves and long trousers (or coveralls) shall be worn on all field and construction sites.
5. High visibility clothing shall be worn on all construction sites, and elsewhere when there is a risk of being struck by vehicles or mobile plant.
6. Safety boots (not trainers) with toe and mid-sole protection shall be worn on all construction sites, and elsewhere when there is a risk of foot injuries.

### Other Requirements

1. Working at height will only take place where there are no other reasonably practicable means of avoiding it. Where it is unavoidable work must be properly planned, supervised and executed following risk assessment by a competent person to eliminate or minimize any risks involved. Control measures must be identified and applied following a hierarchy that seeks to eliminate risk in the first instance. Consideration must also be given to the wider working area and protection for people not directly involved in the activity for example other workers, visitors and members of the public. Harnesses and lanyards can only be used by trained and competent persons with fall prevention lanyards being selected over fall arrest where reasonably practicable to do so. Where fall arrest is used there will be a potential for a person to be suspended in a harness and a suitable rescue procedure must be in place. Advice on how to satisfy these requirements can be obtained from your Health and Safety department.
2. Scaffolding shall be used only if inspected by a competent person prior to initial use, once per week and after any event that could affect its structural integrity.
3. No straight ladder shall be climbed unless it is securely fastened at the top or footed at the base.
4. If using a work platform is not reasonably practical and work from a stepladder is required, then it shall be of appropriate height and type for the task. The top rung of the steps must be kept at or above waist height.
5. No excavation or trench shall be entered unless it is adequately battered, shored or supported, barricaded and with suitable access and egress and inspected by a competent person.
6. All applicable Permit-to-Work systems shall be followed e.g., ground disturbance greater than 300mm, unit entry, hot work, confined space entry, electrical isolation, etc.
7. No confined space shall be entered without a risk assessment and method statement, a permit authorizing entry and training.
8. Good “housekeeping” shall be maintained continually, “a clean site is a safe site”.
9. Report all incidents immediately to your Line Manager

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# Attachment D6
# COVID-19 Precautions for Field Projects

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Attachment D6. COVID-19 Precautions for Field Projects

In response to the Coronavirus pandemic, we've taken appropriate steps to ensure the health and well-being of our people and the continuity of our business operations around the world.

## D6.1 Applicability

This procedure applies to all Jacobs Port of Anchorage Project Management Office (PMO).

## D6.2 Purpose and Scope

In January of 2020, the World Health Organization (WHO) declared the outbreak of the novel coronavirus (COVID-19) a global public health emergency. While public health authorities across the world are taking action to contain the COVID-19 outbreak, it is important that businesses and individuals play a role as well to stop the spread of this disease.

People of all ages can be infected by COVID-19. Symptoms of COVID-19 infection can cause illness ranging from mild to severe and, in some cases, can be fatal. Symptoms typically include fever, cough, and shortness of breath and loss of taste/smell. According to the CDC, symptoms of COVID-19 may appear between 2 and 14 days after exposure.

This procedure establishes policy, assigns responsibilities, and provides guidance to Jacobs field projects regarding COVID-19 action plans. The response to the pandemic is an evolving situation, as a result follow the Center for Disease Control (CDC) guidelines as a primary strategy to avoid exposure. It includes general information on actions to be taken by Jacobs management and employees to help prevent the spread of this illness.

The objectives of this procedure are to:

1. Identify expectations for employees;
2. Identify expectations for management;
3. Identify specific actions to be implemented at project locations.

## D6.3 Implementation

Field Activities: Implementation of this program is the responsibility of the Project Manager/Construction Manager/Supervisor.

## D6.4 Requirements

### D6.4.1 Employees are Expected to:

1. If sick/not feeling well – **STAY HOME!** (Regardless of positive or negative COVID test, if you experience ANY symptoms)
   a) If you or a family member have been exposed to the Coronavirus or are experiencing symptoms of COVID-19 (e.g. fever, aches, chills, congestion, sore throat, cough, etc.), please take the following actions:
      (1) Seek immediate medical attention.
      (2) Stay home and self-quarantine in accordance with Jacobs/client/local guidelines.
      (3) Notify your supervisor and HR partner as soon as possible.
   b) Your supervisor and HR partner will work together to determine whether you are able to work remotely or what additional measures, such as isolation or quarantine, should be taken.

Wash your hands frequently with soap and water for 20 seconds – if there is no soap, use alcohol-based hand sanitizer (containing at least 60% alcohol).

Cover your mouth when you cough or sneeze with a tissue, then throw the tissue in the trash and wash your hands.

Avoid close contact with people who are sick. If observing someone sick at work, please notify your supervisor.

### D6.4.2 Managers/Supervisors are Expected to:

1. Follow guidelines set forth in the previous section
2. Ensure relevant COVID-19 information is posted (i.e., handwashing, signs & symptoms, etc.)
3. Promote frequent and thorough hand washing/sanitizing.
4. Make sure there is an isolated area/room that has paper tissues and/or face masks readily available for anyone who develops symptoms.
5. Increase cleaning services (cleaning frequency and type of cleaning) in offices, bathrooms and eating areas using alcohol-based cleaners.
6. Stay up to date with local Covid-19 restrictions and apply as appropriate to project offices and sites. (varies from state to state)

### D6.4.3 Exposure and/or Positive Test

1. If an employee reports that they have tested positive for COVID-19 or have had contact with someone who has tested positive, notify your direct supervisor.
   (1) HR will help with tracking of personnel under self-isolation or potential COVID-19 exposures.
   (2) Follow Jacobs/client or local quarantine protocols. Jacobs PMO requires the following protocols before returning to work.
      1. Minimum 5-day quarantine away from office before returning.
      2. May return to office after quarantine only after two negative antigen home tests on consecutive days. (Jacobs will provide Covid-19 home antigen tests as needed.
      3. Mask required in common areas of office for one week after return.
   (3) Contact Tracing – HR will help with contact tracing efforts.
      1. Close contact is defined by CDC as someone who was **within 2 meters of an infected person for at least 15 minutes within a 24-hour period** starting from 2 days before illness onset (or, for asymptomatic cases 2 days prior to positive specimen collection) until the time the patient is isolated. The World Health Organization (WHO) additionally includes persons with direct physical contact with a probable or confirmed case, direct care for a patient with probable or confirmed COVID-19 disease without using proper personal protective equipment, and other situations as indicated by local risk assessments.
      2. Confirmed and probable COVID-19 staff will be interviewed to determine close contacts.
         a. If staff are not available for interview, management will determine close contacts based on typical daily work.
         b. Close contact goes back 2 days from the onset of symptoms or positive COVID 19 test.
      3. Close contacts will be notified as soon as possible (within 24 hours of contact elicitation)
         a. The identity of the patient or other identifying information will not be revealed, alluded to, or confirmed by the contact tracer, even if explicitly asked by a contact.
         b. HR will ask staff if personal information can be used to increase efficiency of notifications.
      4. Close contacts of confirmed or probable COVID-19 cases will need to follow CDC quarantine guidelines.
         a. Stay home for 14 days after your last contact with a person who has COVID-19.

### D6.4.4 Project teams are required to:

1. Provide training and education to all onsite staff on these COVID-19 procedures.
2. Take steps to reduce the number of visitors coming to the project site.
3. Inform all visitors of additional control measures.
4. Be observant of team members, its normal to feel down, low, anxious at this time and many will be distracted and may become complacent about other project safety risks. Be vigilant of one another and stay safe.

#### D6.4.5 Posting

Post signage reminding employees to wash hands frequently and how to reduce the spread of respiratory illnesses around the workplace where they will be seen. CDC COVID-19 resources/posters

#### D6.4.6 Training

1. Train all employees regarding the requirements of this COVID-19 Plan and retain documentation of training in the project files.
2. Ensure personnel are trained to recognize the signs and symptoms of COVID-19.
3. Provide COVID-19 awareness training to all staff.

#### D6.4.7 Communications

This Plan should be shared with project Leadership

1. Communicate with Owners/Clients. Let them know we have a COVID-19 Plan.

### D6.5 Documentation Summary

#### D6.5.1 Field/Project Office

File these records in the Project Safety Filing System:

1. COVID-19 Action Plan
2. Training records

### D6.6 References

1. http://www.osha.gov COVID-19
2. JacobsConnect COVID-19
3. Centers for Disease Control and Prevention (CDC)
4. World Health Organization (WHO)

### D6.7 Attachments

1. Jacobs COVID-19 Course of Action Plan
2. Jacobs COVID-19 Return to the Workplace Post Isolation/Quarantine Guideline

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# Attachment D7
# Verbal Reporting Chain

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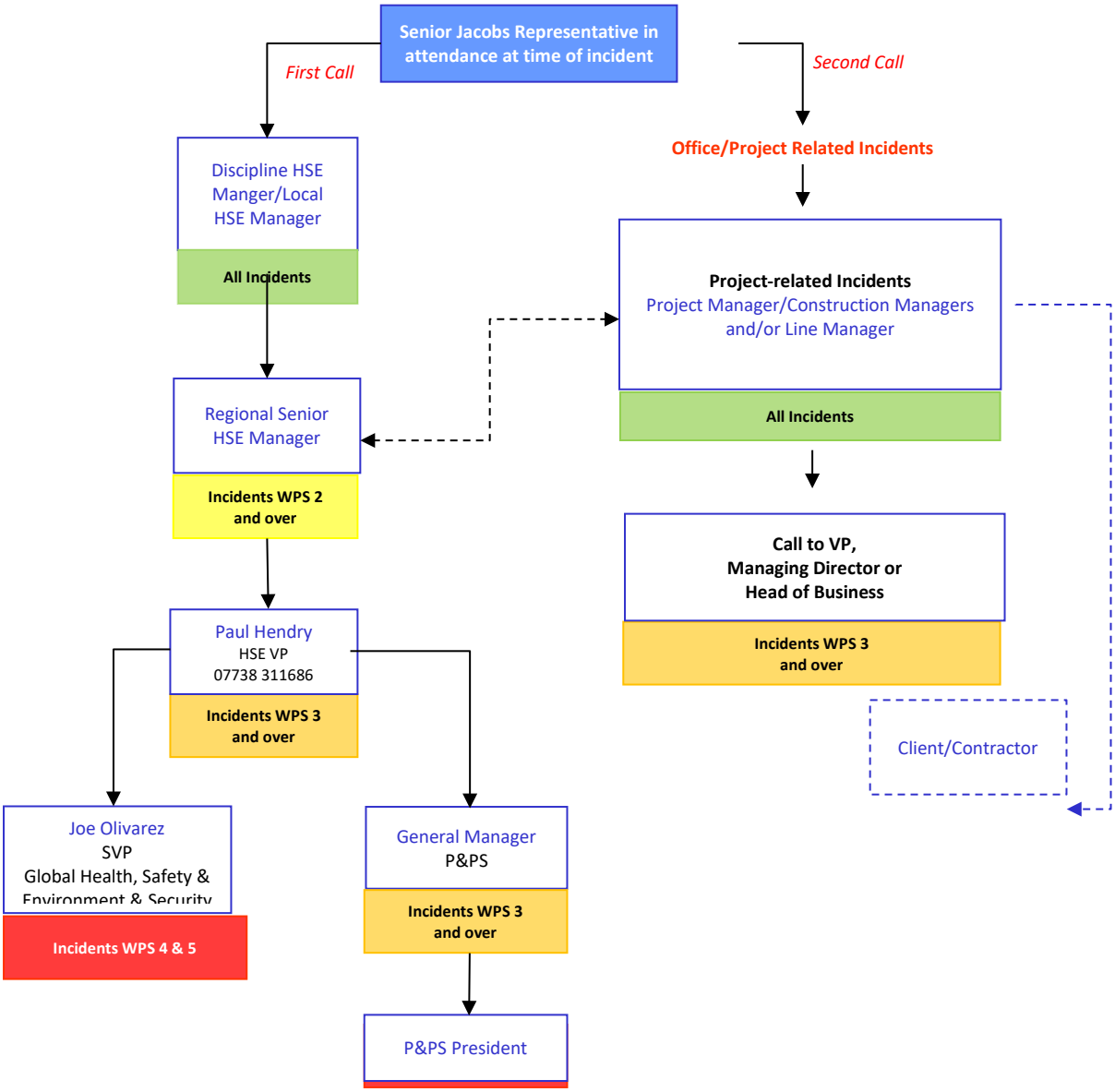
## Verbal Reporting Chain




**Notes:**

1. **Each Project/Region and LOB shall provide their own Verbal Reporting Chain customized as required.**
2. Actual 4 and 5 must be communicated to Legal and Communications by the HSE VP or GVP
3. All incidents involving Jacobs employees or a sub-consultant or subcontractor under Jacobs control (including motor vehicle accidents, injuries, environmental incidents and near-misses) shall be reported as soon as possible **in person or by telephone**.
4. If your Project Manager is not your Line Manager, it is essential that a call is made to both.
5. Calls must be made to both the relevant Corporate HSE Representative and the Establishment Manager/Office Leader or Project Manager/Construction Managers and/or Line Manager (as appropriate). These are not alternatives
6. Security and Sustainability Directors/VPs will be notified where appropriate by HSSEQ VP/HSE VP
7. Where required by legislation, a Jacobs HSES&S Manger will make the necessary report to the enforcing authorities.

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