**Cost Management Plan**

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**Project Management Lesson Learned Web Application**

**ESPM Department University of Alaska Anchorage**

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**Revision History**

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# Introduction

## Purpose

The purpose of cost management is to ensure the project and its contractors will complete the project within budget. This Cost Management Plan identifies the processes and procedures used to manage costs throughout the project’s life cycle. The plan covers the cost management approach, expenditure tracking, variance analysis, oversight of contractor costs, and reconciliation.

Additionally, the plan covers who is responsible for tracking expenditures, how variances will be addressed, and the cost tracking and reconciliation between the State and project management cost processes. This plan also describes the cost management tool that will be used.

## Scope

The scope encompasses the two levels of cost management for OSI projects. One level is the detailed accounting level of tracking budget, expenditures, salary and benefits, and overhead costs in accordance with the normal State of California budget process. The second level is the project management level of tracking costs against work performed in accordance with the OSI Best Practices standards derived from the Project Management Institute’s Project Management Body of Knowledge (PMBOK). Table 1 shows the differences in terminology that will be used in this plan when discussing the two distinct levels.

Table 1. Levels of Cost Management

|  |  |
| --- | --- |
| Budgeting/Accounting | Project Cost Management |
| Budget Planning | Cost Planning |
| Accounting/Expenditure Tracking | Cost Tracking, Reporting and Metrics |
| Changes to the Budget | Cost Control and Changes |
| Reconciliation | Cost Closeout |

Adding to the complexity is the interaction of the budget and cost management processes with the contract management (acquisitions and invoicing) and time reporting (attendance and timesheet tracking) processes. All these processes must interact and reconcile with each other.

In the figure below, the items toward the left-hand side of the chart represent the state budget, accounting and contract management processes (lightly shaded bubbles). The items towards the right-hand side of the chart represent the project cost management processes (white bubbles). The two processes must reconcile at the Initial Baseline, in the monthly attendance and time reporting processes, in the monthly expenditure and cost update processes, and whenever there is a re-plan and a new baseline established.

## References

### Project Document Repository

The central document repository will be located in the PMLLWA Project folder under the Projects Repository on the P: drive.

### Project Cost Database and Tool

The current budget and expenditures are kept in a database/tool/spreadsheet located in the project document repository. The Project uses Microsoft Project for managing costs.

## Acronyms

|  |  |  |  |
| --- | --- | --- | --- |
| APD | | | Advance Planning Document |
| APDU | | | Advance Planning Document Update |
| BCC | | | Budget Change Concept |
| BCP | | | Budget Change Proposal |
| DGS | | | Department of General Services |
| DOF | | Department of Finance | |
| FSR | | Feasibility Study Report | |
| IPOC | | | Independent Project Oversight Consultant |
| IPOR | | | Independent Project Oversight Report |
| IV&V | | | Independent Verification and Validation |
| M&O | | | Maintenance and Operations |
| OSI | | | Office of Systems Integration |
| PCA | | | Program Cost Account |
| PIER | Post Implementation Evaluation Review | | |
| PMBOK | | Project Management Body of Knowledge | |
| SOW | Statement of Work | | |
| TAP | | | Task Accomplishment Plan |
| WBS | | | Work Breakdown Structure |

## Document Maintenance

This document will be reviewed monthly and updated as needed, as the project proceeds through each phase of the system development life cycle. This document contains a revision history log. When changes occur, the document’s revision history log will reflect an updated version number as well as the date, the owner making the change, and change description will be recorded in the revision history log of the document.

# Participant Roles and Responsibilities

This section describes the roles and responsibilities of the PMLLWA staff with regard to cost management. The following are the primary participants in the budget, accounting, and cost management processes from the project’s perspective. In some cases, one individual may perform multiple roles in the process.

## Office of Systems Integration (OSI)

The PMLLWA Office of Systems Integration (OSI) is responsible for coordinating the state budget and accounting processes with the projects in OSI and the appropriate control agencies.

### PMLLWA OSI Director

The OSI Director is responsible for approval of funding documents and representing PMLLWA at the budget hearings.

### PMLLWA Budget Office

The Budget Office is responsible for coordinating the review and submission of approval documents (e.g., Feasibility Study Reports (FSRs) and Advance Planning Document (APDs), Budget Change Concepts (BCCs), and Budget Change Proposals (BCPs)) to the appropriate state control agencies for all projects. They are the single point of contact for communications (Control Agencies, Project Sponsors, and other Agencies). The Budget Office also coordinates the development of the department’s travel budget which includes estimates for project travel.

### PMLLWA Accounting Office

The Accounting Office is responsible for coordinating the accounting, customer billing, invoice approval processes, travel advances, and travel claims for all projects. The Accounting Office works with the Budget Office to reconcile the budget to the expenditures.

### PMLLWA Acquisition Center

The Acquisition Center is responsible for coordinating the acquisition of IT and Non-IT goods and services on behalf of the project.

### PMLLWA Project Manager

The Project Manager is responsible for managing and reviewing project costs from a project management perspective to ensure appropriate progress is being made for the funds being expended. The Project Manager works with the financial staff to reconcile the cost management data to the current accounting data.

### PMLLWA Project Functional Manager(s)

The Functional Manager(s) are responsible for identifying funding needs and for assisting with the tracking of expenditures, including tracking of staff effort and costs.

## Contractors

The Contractor is responsible for reporting appropriate costs to the project and to their efforts as described in their contract. The contractor is responsible for managing costs internal to their activities. The contractor should report their costs in their monthly status reports and raise potential or actual cost variances or problems to the project team at appropriate status meetings.

# Budget and Accounting Approach

The following sections summarize the project’s involvement in the budget and accounting processes.

* Step 1 - Budget Planning
* Step 2 - Acquisitions Tracking
* Step 3 - Acquisitions Reports and Metrics
* Step 4 - Changes to the Budget
* Step 5 - Budget Reconciliation

## Budget Planning

The company budget is established on a yearly basis, the funding for the project is only secured for one year at a time (although requests for future year funding may be reviewed, but not guaranteed).

### Project Concept Approval

When appropriate, new project concepts or staffing requests are proposed through the development of a Budget Change Concept (BCC) and high-level cost estimates (refer to Section 4.1 for more on developing cost estimates). The project financial staff prepares the BCCs in accordance with instructions provided by the Budget Office. The OSI Budget Office coordinates the review of BCCs with the OSI Director and Agency.

### Project Document Development

If the BCC is approved, the project financial staff create a project document which requests approval for the project. In addition, the project financial staff reviews the project’s current expenditures and identifies any adjustments which may need to be made because of changes or because of project progress.

The Project Manager coordinates approvals from OSI, and the Budget Office coordinates approvals from the state control agencies.

### Project Estimation Techniques

The original project budget estimates were developed using past experience **and** validated using expert opinion**.** Estimates for new concepts use the same techniques.

### Budget Hearings and Questions

The Budget Office coordinates any questions regarding the budget proposals and assists with the budget hearings. The Project Manager and Project Assistant reviews the budget against the cost estimates, and adjust the cost baseline, if necessary.

### Acquisitions for IT and Non-IT Goods

The project Administrative and IT staff work with the Acquisition Center to identify and document specific requirements for equipment. The Acquisition Center solicits vendors to obtain the desired equipment at the best price from the approved supplier lists. The project notifies Acquisition Center and the Accounting Office when the equipment is received and if it meets the stated requirements. Upon approval by the project office, the Accounting Office coordinates payment to the vendor.

### Acquisitions for Services

The project Procurement and Contract Management staff work with the Acquisition Center to identify and document specific requirements for the desired services. The Acquisition Center solicits offers/proposals from qualified bidders, coordinates questions/answers to the requirements and oversees with the review and evaluation of offers/proposals. The project works with Acquisition Center to conduct interviews, if appropriate, and selects the winning bidder. The Acquisition Center creates and issues the contract documents.

Depending on the contract amount, either the OSI Director or Agency Secretary is the final approver of consultant contracts. The Project Manager is the approver of the Task Accomplishment Plans (TAPs), and consultant invoices. The Project Functional Manager tracks the contractor day-to-day tasking, performs review of consultant work products, and assists with invoice review and approvals.

The project has three to five working days to respond to contractor invoices. The contractor submits official invoices to Accounting and the Accounting Office sends the Project Manager a copy of the invoice for review and approval. The project staff review the invoice against the deliverable tracking log and the attached timesheets to validate the information. The Project Manager reviews the invoice, comments, and recommendations, and makes the final decision to approve or reject an invoice. The approval or rejection notice is sent to the Accounting Office who coordinates payment. Refer also to the Contract Management Plan for more on invoice processing and review.

### Personnel and Operations Expenditures

The project tracks all contract, personnel, and operations expenditures in Microsoft Project. At the close of each month, the project receives expenditure reports from the Accounting Office showing the funds that were expended. The Project Manager reviews and validates the expenditures match with their records of expenditure approvals and works with the Accounting Office to resolve any discrepancies.

## Expenditure Reports and Metrics

Expenditure reports are generated for project use in validation and tracking of expenditures against the budget. The Accounting Office is responsible for sending appropriate reports to the sponsor, as requested.

## Changes to the Budget

If the project budget needs to be adjusted, the Project Manager determines if an approval document and/or BCP/SPI needs to be written to address the change. If a change is deemed necessary, the financial staff develops the approval document and/or BCP/SPI. The Budget Office coordinates the submission and approvals of the document(s) in accordance with the budget cycle.

Once the change is approved and included in the appropriate fiscal year budget, the Project Manager works with the financial analyst to re-baseline the cost data and estimates.

### Monthly Reconciliation of the Project’s Financial Books

The Project Manager is responsible for coordinating and performing the reconciliation of the actual expenditures to the approved budget and working with the Accounting Office to address any issues. Project staff performs an internal reconciliation monthly in preparation for the official reconciliation with the Accounting Office. Reconciliation includes a comparison of actual to planned expenditures as well as actual expenditures against the approved budget.

# Cost Management Approach

The following section summarizes the project management processes for managing costs on the project as tailored from the PMBOK[[1]](#footnote-1).

* Step 1 - Cost Planning
* Step 2 - Cost Tracking
* Step 3 - Cost Reporting and Metrics
* Step 4 - Cost Control and Changes
* Step 5 - Cost Closeout

Communication is a key part of the cost management process and occurs at every step of the process among the project team, project stakeholders and consultant team.

## Cost Planning

### Resource Planning

Cost estimation begins upon completion of the project WBS[[2]](#footnote-2). Resource skills are determined based on the needs of the project and the products being produced. The project uses and tailors the personnel resource information from the PMLLWA Staff Management Plan and PMLLWA Responsibility Assignment Matrix for determining needed resource skills.

### Cost Estimating

Hour estimates are created for each WBS item. The necessary skill sets, and staff labor categories are identified for each WBS element. Approximate costs are estimated based on the anticipated classification of staff assigned to the work.

The anticipated costs are allocated to each WBS item and totaled. Resource/labor costs are allocated by resource category and total. The estimates are then used to request funding or funding adjustments for the project (refer to Section 3). Risks associated with the cost estimates are documented and included in the risk register.

### Establishing the Cost Baseline

Once the Budget is approved, the Project Manager will review the cost allocation (of funding per WBS item) against the approved budget, and adjust the allocations, if necessary, to reflect the approved funding for the year. Upon approval by the Project Manager, the cost allocations are baselined. For more information on the current cost allocations to WBS items, refer to the project’s Master Project Plan.

## Cost Tracking

Actual hours expended are recorded and validated against attendance records and contractor monthly reports. The hours are converted to costs for tracking the cost of current progress to determine if the project is staying within and expected to complete within budget.

### Project Labor Hour Tracking

Project staff will track their labor hour rates individually and submit a weekly report to the PMLLWA Project Manager.

The Project Manager will record hours spend on project activities in the Microsoft Project tracking software.

### Consultant Costs and Labor Hours Tracking

Consultants are required to submit monthly timesheets showing labor hours worked by SOW tasks. Each SOW task is mapped to a specific WBS item by the Project Functional Manager.

### Overall Cost Tracking

Overall costs are compared to the budgeted project costs monthly by the Project Manager. The overall costs are comprised of the actual labor hours and project expenditures for the month. Variances are reviewed and analyzed to determine the cause and mitigations or corrections.

## Cost Reporting and Metrics

To assist with tracking actual costs against the baseline, the following charts/reports are used. The charts are available in Microsoft Project and are updated as described below.

* Spending Plan (by fiscal year) – a run chart showing the actual costs against the baseline by month for the fiscal year and the cumulative total to date for the fiscal year.
* Cost by WBS Item - a bar chart showing the labor costs by Level 1 WBS items by month for the fiscal year and the cumulative total to date for the fiscal year.
* Cost Variance by WBS Item – a bar chart showing the actual costs against the baseline to date.
* Labor Hours by WBS’ Deliverable Item – a bar chart showing the amount of effort expended towards the Level 1 WBS items by month for the fiscal year and the cumulative total (to date) for the fiscal year.

## Cost Control and Changes

### Cost Variances

For variances against the baseline of more than ten percent at the Level 1 WBS deliverable items, the rational for the variance is documented in the associated report and discussed at the management staff meeting. If the variance does not affect the overall project cost baseline, no other actions are required.

### Cost Re-Planning

If a re-plan is deemed necessary by the PMLLWA Project Manager, the project prepares documents to address the re-plan. The funding documents are included in the next budget cycle and are subject to the normal review and approval processes.

### Cost Re-Baselining

Once the re-plan is approved, the Project Manager works to re-baseline the cost data and estimates based on the approved funding. The project works with the Accounting Office to adjust their encumbrances and accounting tools to reflect the re-plan.

## Cost Closeout

At the end of the project, the cost historical information is completed by the Project Manager, reviewed by the Project Manager, submitted to Budget Office for review.

### Annual Cost Summary

At the end of the fiscal year, the Project Manager summarizes the actual hours and costs expended against the baseline for the fiscal year. The annual summary is archived for historical purposes.

### Lessons Learned on Cost Management

Lessons learned related to costs and cost estimation are used in the development of the subsequent fiscal year’s cost baseline.

# Reconciling the Budgeting Process to the Project Process

As discussed previously, the budgeting and accounting processes operate separately from the project cost management processes, though they are related. This section discusses the relationships and where these processes must interact and synchronize.

## Budgeting and the Cost Baseline

Once the project management baseline (or revised) budgets have been finalized, the PMLLWA team must determine if future budget demands require adjustments to the project’s base spending authority. If additional spending authority is required, a BCP must be prepared. If additional spending authority is not required, the project adjusts the cost baseline to reflect the actual approved budget for the fiscal year.

## Attendance Tracking and Time Reporting

Staff submits monthly attendance reports at the end of the month. The Accounting Office use these reports to bill the project for state staff salary and benefits.

## Invoice Processing

Invoices must clearly identify the products (deliverables) and service period for which the invoice is requesting payment. The contractor must adhere to specific invoice requirements set forth in the contract. All contractor invoices are sent directly to the Accounting Office. This office logs the invoice, begins the processing cycle, and coordinates the actual payment once all the appropriate approvals have been received. The Accounting Office retains the original invoice.

After logging the invoice, the Accounting Office routes a copy of the invoice to the project for review and approval. Upon receipt of the invoice at the project, it is routed to the Project Manager who verifies that the personnel, classifications, and rates in the invoice correspond to the terms in the contract. The Project Manager also verifies the accounting codes are correct, if applicable. If travel expenses have been included, the Project Manager verifies the contractor is authorized to bill for travel expenses, the necessary receipts are present and under no circumstances will claim exceed the allowable travel rates.

If all the information is acceptable, the invoice is passed to the Project Manager for final review and signature. If the Project Manager approves the invoice, the approved paperwork is sent back to the Accounting Office, who will then send a payment request.

If some or all the deliverables or services were unacceptable, the Project Manager notifies the Accounting Office that the invoice is unacceptable and indicates why the invoice is being disputed. The Accounting Office sends a notice of invoice dispute to the contractor indicating why the invoice cannot be paid and what must be done or corrected. The 45-day processing clock stops when the Accounting Office sends the notice of invoice dispute to the contractor. After addressing the problems, the contractor re-submits an invoice for payment to the Accounting Office and the processing clock is reset and restarted.

## Budget Changes and Cost Control

Changes to the annual budget and spending plan may be required by the project to support a re-plan. The Project Manager will partner to ensure that the budget and the project management baseline estimates match. Corrective actions or change requests will follow the appropriate project change or budget change processes.

## Reconciliation

At the end of the fiscal year and at the end of the project, a reconciliation must be completed using both the project cost management and project accounting processes. The expenditures must reconcile to the approved budget and to the accounting system.

# Project Cost Tool

Project costs will be tracked using Microsoft Project. The project file will be in the project directory under the PMLLWA project folder.

The Project Manager will be primarily responsible for tracking and updating project costs in the software.

1. The project has chosen to tailor the PMBOK guidance on Cost as follows: The planning processes of Cost (Resource Planning, Cost Estimating, and Cost Budgeting) have been consolidated into a section called Cost Planning. The PMBOK Controlling processes (Cost Control) have been expanded into four sections called Cost Tracking, Cost Reporting and Metrics, Cost Control and Changes, and Cost Closeout. [↑](#footnote-ref-1)
2. Refer to the project Master Project Plan to obtain the project’s WBS and refer to the project Schedule Management Plan for a description of how the WBS was established. [↑](#footnote-ref-2)