Princeton Shoreline, California

Continuing Authorities Program
Section 111

FEASIBILITY PHASE PROJECT MANAGEMENT PLAN

San Francisco District
South Pacific Division
December 2024

US Army Corps of Engineers®

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PMP APPROVAL AND ACCEPTANCE SHEET

We, the undersigned, have reviewed this document and concur with the Project Management Plan (PMP) and certify that it contains accurate content and is sufficient to guide project execution. We understand that this PMP is a "living" management document that will be updated as needed through the process stated within.

_____	_____
Quinton Link, Project Manager	DATE
_____	_____
Tessa Beach, Chief of Planning	DATE
_____	_____
Son Ha, Chief of Engineering	DATE
_____	_____
Jesse Anderson, Deputy District Counsel	DATE
_____	_____
Julie Beagle, Environmental Planning Section Chief	DATE
_____	_____
Juliette Hayes, Regional CAP Production Center Manager	DATE
_____	_____
Janice Lera-Chan, Supervisory Civil Engineer	DATE
_____	_____
Erika Powell, Chief of Civil Design Section	DATE
_____	_____
Warren Tan, Supervisory Cost Engineer	DATE
_____	_____
Bernard Wair, Chief of Geo-Sciences Section	DATE
_____	_____
Jaime O'Halloran, Planner	DATE

Seongjun Kim, Technical Lead	DATE
LTC Timothy Shebesta Lieutenant Colonel, U.S. Army District Commander and Engineer	DATE
XXXXX, Title for Non-Federal Sponsor	DATE
XXXXX, Title for Non-Federal Sponsor	DATE

DOCUMENT HISTORY

This Project Management Plan (PMP) is a managed living document. It is owned, maintained, and utilized by the Project Manager and Project Delivery Team (PDT) to support the successful delivery of the agreed project outputs. This PMP is the responsibility of the Project Manager and is the "road map" enabling the effective management and control of the project.

Original PMP Approval Date:				
Revision #	**Date**	**Description of Change and Location within the Document**	**Date Approved**	**Approved By**

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1.0 Introduction

The PMP for the Feasibility Phase defines the planning approach, activities to be accomplished, schedule, and associated costs that the Federal Government and the non-Federal sponsor (NFS) will be supporting financially. The primary purpose of the PMP is to serve as a management tool. It includes scopes of work that are used for funds allocation by the project manager. It forms the basis for identifying commitments to the NFS and serves as a basis for performance measurement. The PMP describes the initial tasks of the Feasibility phase and continues through the preparation of the final integrated feasibility report.

The PMP is a basis for change. Because planning is an iterative process without a predetermined outcome, additional or less costs and time may be required to accomplish reformulation and evaluations of the alternatives. Changes in scope will occur as the technical picture unfolds. With clear descriptions of the scopes and assumptions outlined in the PMP, deviations are easier to identify. The impact in either time or money is easily assessed, and decisions can be made on how to proceed.

The scope of this PMP is for the Feasibility Phase only, which culminates in a final decision document (Integrated Feasibility Report and appendices) detailing the preferred alternative chosen to carry into Design. A separate PMP will be provided for the Design and Implementation Phase of the project that incorporates negotiation of a Project Partnership Agreement, design, plans and specifications, construction, and project closeout. The scope, schedule, and budget for the second PMP are not included in this document as they are outside the scope of this phase.

1.1 Project Information

Project ID Number: 496124

Project Title: Princeton Shoreline, California, Continuing Authorities Program (CAP) Section 111

Authorization, Phase: CAP § 111, Rivers and Harbors Act of 1968 (33 U.S.C. § 426i), as amended, Feasibility Phase

Project Location: San Mateo County, California

Congressional Delegation: Senator Alex Padilla (CA), Senator Adam Schiff (CA), Representative Sam Liccardo, Congressional District 16 (San Mateo)

Non-Federal Sponsor: San Mateo County Harbor District

Planned Feasibility Phase Duration: 24 months

Estimated Total Study Cost: $2,598,000
For more information on this project, please refer to the project's approved Federal Interest Determination (FID) report.

2 Study Purpose

Section 111 River and Harbor Act of 1968 (33 U.S.C. § 426i), as amended, authorizes the US Army Corps of Engineers (USACE) to study, design, and implement measures (structural or nonstructural) to prevent or mitigate damage to shorelines attributable to Federal navigation projects. This authority is part of USACE's Continuing Authorities Program (CAP), which focuses on water resource related projects of smaller scope, cost, and complexity as compared to specifically authorized, traditional USACE civil works projects. The CAP includes delegated authority to plan, design, and construct certain types of water resource and environmental restoration projects without specific Congressional authorization. The maximum total Federal expenditure for a Section 111 project is $12,500,000.

The purpose of the Princeton Shoreline Study is to determine if there is a technically feasible, economically justifiable, and environmentally acceptable recommendation for Federal participation in the construction of a project to prevent or mitigate ongoing damage to the Princeton shoreline within Pillar Point Harbor, attributable to the Federal breakwaters, which were constructed in the area between 1966 to 1997.

The study area is in San Mateo County, California, at the northern end of Half Moon Bay, within Pillar Point Harbor (Figure 1). The existing Federal project comprises two rubble-mound breakwaters. The easternmost portion of the harbor (including the east breakwater) and the shoreline from the breakwater south to Miramontes Point are within the boundary of the City of Half Moon Bay. The west breakwater is in unincorporated San Mateo County. The inner breakwaters, also shown in red, are not part of the Federal project.

Figure 1. Pillar Point Harbor Federal breakwaters (East and West in red) and inner non-Federal breakwaters (also shown in red), Princeton shoreline (green). Miramontes Point is about a half mile below the bottom of the image.

The feasibility study will focus on Princeton Shoreline, where the Federal breakwaters have disrupted sediment transport, leading to accelerated erosion of the beach and low bluff (14-17 feet elevation), in front of the Princeton by the Sea community. Princeton Shoreline extends from the west breakwater of the inner harbor to Pillar Point Marsh, about 0.5 mi (Figures 2). Currently, the study area includes the beach, low coastal bluff, and the first row of commercial and privately owned parcels, including a yacht club and hotel. The FID was written and approved with the option to expand the study area if no separable element is identified to address the erosion at Princeton Shoreline and if it is necessary to provide a comprehensive and sustainable solution to the ongoing damage caused by the Federal breakwaters at the Princeton Shoreline. This will be determined prior to the Tentatively Selected Plan (TSP) Milestone. The scope for an expanded study area is not included in this PMP. If the PDT finds the study area and scope need to be expanded, they will highlight this for vertical team engagement and determine if a recommendation to convert the study to General Investigations should be made.

Figure 2. Pillar Point Inner Harbor, Princeton-by-the Sea, Romeo Pier, Pillar Point Marsh, and Pillar Point (bottom to top in photo [flickr by Phliar: 15 February 2013]). The red line marks the bluff top in the study area. Romeo Pier was removed in 2018 for safety concerns.

3 Non-Federal Sponsor

The San Mateo County Harbor District is ~~the~~ Non-Federal Sponsor for the study.

4 Project Delivery Team

4.1 Project Delivery Team Members

The lead Federal agency for the feasibility study is the United States Army Corps of Engineers (USACE). The technical work for this study will be accomplished by USACE. In-kind work has not been identified for the study. The PMP will be updated if in-kind deliverables are identified later. All deliverables provided as work in kind will be subject to the same USACE policy guidance and review processes as internally produced deliverables. The current project team members are listed in Table 1.

Name	Role	Organization	Email
Seongjun Kim	Project Manager	CESPN-PMC	seongjun.kim@usace.army.mil
Katie LaFontaine	Project Scheduler	CESPN-PMP	katie.j.lafontaine@usace.army.mil
Lucinda Ballard	Budget Analyst	CESPN-PMP	lucinda.ballard@usace.army.mil
Grace Wieland	Economics	CESPN-PMC	grace.e.wieland@usace.army.mil
Jaime O'Halloran	Plan Formulator	CESPN-PMC	jaime.l.o'halloran@usace.army.mil
Jamie You	Environmental Manager	CESPN-PMC	jaime.you.usace.army.mil
Jamie You	Fish Biologist	CESPN-PMC	jaime.you.usace.army.mil
Tina Pico	Coastal Engineer/Engineering Technical Lead	CESPN	christina.m.pico@usace.army.mil
Luke Pratt	Civil Design Engineer	CESPN-PMC	lucas.r.pratt@usace.army.mil
Warren Tan	Cost Engineer	CESPN-ET-EC	warren.h.tan@usace.army.mil
Bernard Wair	Geologist/Geotechnical Engineer	CESPN-ET-EG	bernard.r.wair@usace.army.mil
Cultural Resources	Archeologist, Cultural Resources	CESPN-PME-P	ruzel.b.ednalino@usace.army.mil
Pamela Fischer	Reality Specialist	CESPK-RE-S	pamela.m.fischer@usace.army.mil
Sarah Rupper	GIS Coordinator	CESPN-PMC	sarah.k.rupper@usace.army.mil
TBD	Office of Counsel	CESPN-OC	@usace.army.mil
James (Jim) Pruett	General Manager Non-Federal Sponsor Representative	San Mateo County Harbor District	jpruett@smharbor.com

Table 1- PDT Members

4.2 Executive Committee

If the study coordination team cannot resolve technical or management issues, an executive committee will be convened to decide on a course of action. The executive committee consists of senior members of USACE and the San Mateo County Harbor District. Current designated members of the executive committee are noted in Table 2. Should the named individual no longer hold their position, his or her successor will be automatically assigned to the executive committee. The study coordination team will brief the executive committee on unresolved issues and provide recommendations for their resolution. The executive committee will consider such recommendations in good faith, but have the discretion to accept, reject, or modify the study coordination team's recommendations. It is expected that the executive committee will confer and reach consensus for a solution. The study coordination team will keep the executive committee informed of the progress of the study and any issues requiring resolution. The workings of the executive committee will not supersede any rights and responsibilities described in the cost-sharing agreement. Use of the executive committee process is normally not invoked during a normal, functioning study. Its use is reserved for rare cases when issues cannot be satisfactorily resolved within the project team members.

Name	Role	Organization	Phone	Email
LTC Timothy W. Shebesta	District Engineer	CESPN	415-503-6700	timothy.w.shebesta@usace.army.mil
Tommy Williams	Deputy District Engineer	CESPN	(510) 910-2752	thomas.r.williams@usace.army.mil
Tessa Beach, Ph.D.	Deputy DPM & Planning Chief	CESPN	(415) 444-6205	tessa.e.bernhardt@usace.army.mil
James Pruett	General Manager	San Mateo County Harbor District		jpruett@smharbor.com

Table 2 – Members of the Executive Committee

5 Project Delivery Team Milestones, Roles, and Responsibilities

The Work breakdown Structure (WBS) includes the two-remaining feasibility-phase CAP milestones: TSP Milestone and Final Integrated Report (Final Report Milestone). This PMP describes the deliverables to be completed by each responsible organization within the WBS milestone structure. For each milestone, the scope of work describes the work, including the specific activities, to be accomplished. The scopes of work have been developed by the Project Delivery Team (PDT). The project milestones and a brief description of the steps leading to each milestone are listed in Figure 3 below.

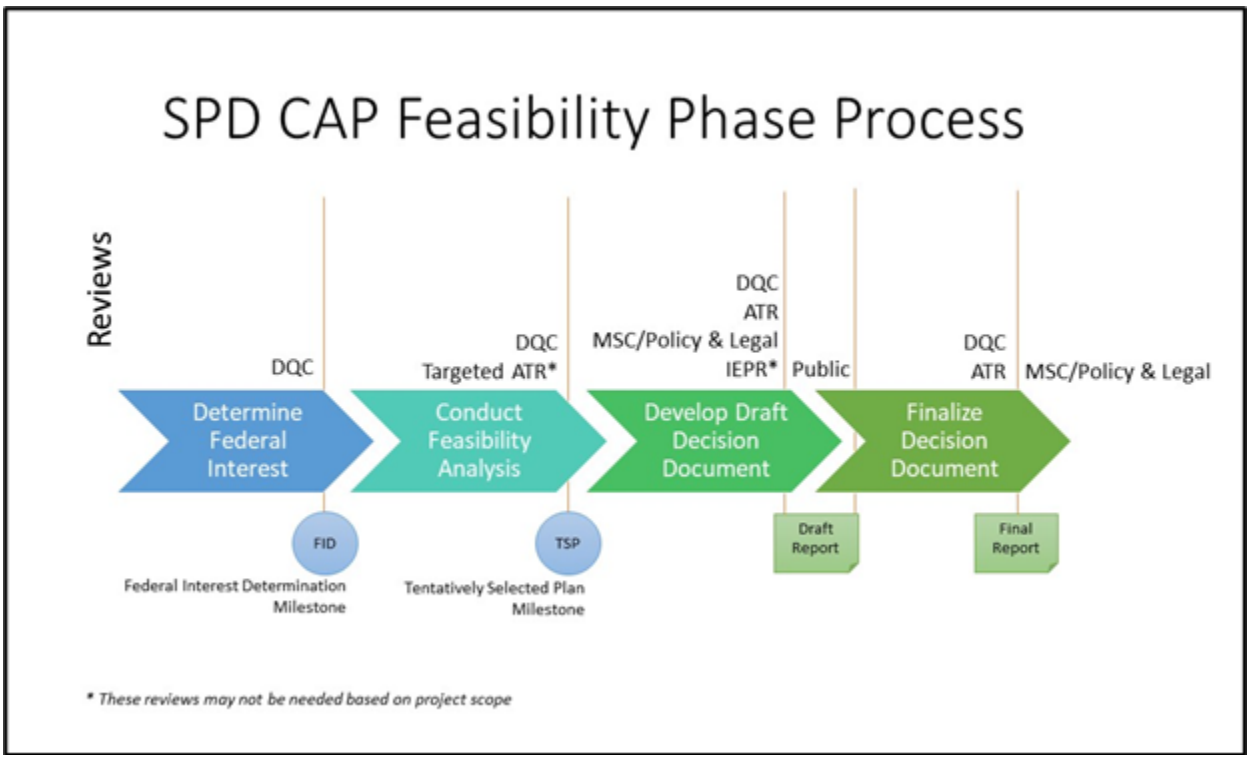

Figure 3. CAP Feasibility Phase Process. Milestones include the FID (completed), TSP Milestone, and Final Report Milestone.

The sections below describe the deliverables required to complete the TSP Milestone and the Final Report Milestone. These are the two milestones of the feasibility study phase. Work to complete these milestones begins after the Feasibility Cost Sharing Agreement (FCSA) is signed.

5.1 Tentatively Selected Plan (TSP) Milestone (CW-262)

Duration from FCSA to TSP Milestone = 12 months

The TSP takes place after the alternative plans have been formulated and prior to the release of the draft decision document for public review. The purpose of the TSP is to ensure that plans have been properly formulated, legal and policy issues have been identified and a consensus on resolution has been reached, and the Major Subordinate (MSC) concurs with the TSP that will likely proceed into the design and implementation (D&I) phase.

To prepare for this milestone, the PDT works together to formulate the projects measures and alternatives to address the ecosystem-related problems, opportunities, and project objectives. Preliminary alternatives are formulated and screened down to approximately 2 -3 final action alternatives. Costs and benefits are developed minimally for the final array of alternatives.

The Detailed Project Report (DPR) and National Environmental Policy Act (NEPA) document should be ready for concurrent Agency Technical Review (ATR) and MSC review within 2 months of the TSP. This will require that the DPR and NEPA document are drafted and entering District Quality Control (DQC) during the TSP phase. In addition, over-the-shoulder DQCs should be conducted on technical deliverables as they are developed, in order to ensure that the CAP schedule will be met. The remainder of Section 5.1 outlines the study components and reviews required to achieve the TSP Milestone.

5.1.1 Charettes Define the Study Roadmap

A series of planning charrettes and site visit are held at the beginning of the study process with participation from the entire team and non-Federal sponsor. The charrettes are held to define the problems, opportunities, objectives, constraints, and considerations that form the framework of the study. The team also defines the existing condition and identifies the assumptions for the future without project condition, determines data gaps, and creates and refines the roadmap for the feasibility study process.

5.1.2 Technical Analysis and Plan Formulation

Technical analysis and plan formulation comprise the bulk of the PDTs work on the feasibility study. Detailed scopes for each discipline are in Section 5.4. Feasibility-level analysis is done in preparation for the TSP Milestone to identify the design, quantities, benefits, costs, real estate requirements, and to evaluate the economic, social, environmental, and regional effects of each alternative. The engineering and technical work provide the data needed to assess the feasibility of the alternatives and to identify the tentatively selected plan to present at the milestone meeting. The PDT works together to formulate the measures and alternatives to address the water resources problems, opportunities, and project objectives. Preliminary alternatives are formulated and screened down to approximately 2 -3 final action alternatives and from there the TSP is identified based on comprehensive benefits ranking. The plan formulator will be given all data 4 weeks before the TSP read-ahead is due.

5.1.3 Environmental Resources Compliance

Environmental compliance is initiated at the start of the feasibility study. Interagency meetings will be conducted as needed and prior to any decision points. The Interagency meetings will lay the groundwork for the PDT to engage the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) to develop a scope of work for the Coordination Act Report (CAR) according to Fish and Wildlife Coordination Act (FWCA) and to determine the appropriate level of Endangered Species Act (ESA) Section 7 coordination. Leading up to the TSP Milestone, a draft Biological Assessment and Essential Fish Habitat pursuant to Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) will be prepared and a draft CAR will be obtained. Agency coordination for Marine Mammal Protection Act (MMPA) and Coastal Zone Management Act (CZMA) will occur during feasibility, but permitting effort will continue during design phase due to the permit duration for MMPA (valid for 1 year) and level of detail needed for the coastal zone consistency determination. The PDT may hold a public scoping meeting depending on the anticipated public interest and level of controversy around the project.

Additionally, as per the NEPA Guidance on Consideration of Greenhouse Gas Emissions and Climate Change (GHG Guidance) (CEQ 2023), climate change analyses will be conducted to incorporate GHG and climate change considerations into the NEPA process and consider the potential effects of a proposed action on climate change, including by assessing both direct and indirect GHG emissions and reductions from the proposed action, quantifying the baseline (No Action) emissions, and the effects of climate change on a proposed action and its environmental impacts.

5.1.4 Cultural Resources Compliance

The cultural resources specialist will ensure compliance with Section 106 of the National Historic Preservation Act of 1966, as amended, in coordination with NEPA review and development of the feasibility study. They will conduct a baseline conditions assessment of cultural resources within the study area, identify Native American Tribes that may have an interest in the area, characterize potential

impacts to cultural resources associated with each alternative, consult with the California State Historic Preservation Officer (SHPO) on the Area of Potential Effects (APE) and appropriate path for preservation or mitigation associated with the recommended plan, and consult with Tribes to identify properties of religious and/or cultural significance to the tribe. Additional cultural resources surveys may be necessary.

5.1.5 District Quality Control (DQC) Review of Technical Deliverables

All technical analysis, models, and supporting documentation will undergo DQC review prior to being submitted to the Project Manager, Engineering Technical Lead, and Lead Planner for use by the PDT for analysis. DQC is a review done by District-level staff who are not directly working on the project. DQC will be performed on a rolling basis as deliverables are completed to ensure the validity of data and analysis used in the formulation, evaluation and comparison of alternatives. DQC of the Draft DPR and NEPA document will be initiated later, leading up to the TSP Milestone. All DQC reviews will be conducted in accordance with the Civil Works Review Policy, Engineer Regulation (ER) 1165-2-217.

5.1.6 Targeted Agency Technical Review (Targeted ATR)

Targeted ATR is a review done by staff certified by USACE as subject matter experts. The reviewers must be from outside of the home district and not affiliated with the project. The study's Review Management Organization (RMO), the MSC in this case, will identify the ATR Lead, who will assign specific reviewers. At this early stage of the study, Targeted ATR is done for products that are critical to the PDTs analysis and formulation, such as coastal modeling. All ATR reviews will be conducted in accordance with the Civil Works Review Policy, ER 1165-2-217.

5.1.7 Abbreviated Cost Schedule Risk Analysis (ACSRA)

An ACSRA will be completed prior to the TSP Milestone. The USACE Cost Center of Expertise in the Walla Walla District will lead and facilitate the session with full PDT participation.

5.1.8 Concurrent DQC and Legal Sufficiency Review of the Draft DPR and NEPA Document

The Draft DPR and NEPA document will be submitted for DQC and District Legal Sufficiency Review prior to the TSP Milestone. As part of this process the PDT and DQC team will be responsible for a complete reading of the Draft DPR and NEPA document to assure the overall integrity of the report, technical appendices, and the recommendations. These reviews do not need to be completed prior to the TSP Milestone. However, they should be well underway to ensure timely release of the Draft DPR and NEPA document after the TSP Milestone, accounting for the requirement to complete ATR, MSC Quality Assurance Review, and Policy and Legal Compliance Review, prior to public release of the Draft DPR and NEPA document.

5.2 Draft Report milestone (CW-250)

The next milestone marks the release of the draft DPR and NEPA document for public and agency review. This milestone includes the work necessary to complete the draft report and appendices, to manage concurrent ATR and MSC Policy and Legal Compliance Reviews of the draft DPR and NEPA document, to document and respond to comments, and update the draft report prior to release.

5.2.1 Internal Concurrent Agency Technical Review (ATR), Major Subordinate Command Quality Assurance (MSC QA) and Policy and Legal Compliance Review (P&LCR)

Completion of DQC and legal review marks the start of concurrent ATR, MSC QA and P&LCR. All comments from these reviews should be incorporated into the report prior to release of the draft. An interim-ATR Certificate and/or documentation of ATR backcheck and closeout, and a MFR documenting resolution of MSC Quality Assurance and P&LCR will be produced. This will signify readiness to release the document for external public and agency review.

At the time of the release of the draft, most projects generally host a public. The level of public involvement is scalable to the needs of the project throughout the study and will be determined early in the feasibility phase. DPR, NEPA document, and appendices generally included the following: (1) main report with integrated NEPA document; (2) Civil Design Appendix; (3) Water Resources Appendix; (4) Geotechnical Engineering Appendix; (5) Cost Engineering appendix with MCACES report; (6) Real Estate Plan; (7) Environmental-related appendices.

5.2.2 External Concurrent External Public and Agency Review

The next step is the release of the Draft DPR and NEPA document for concurrent public and agency review. This milestone includes the work necessary to manage and document the public and agency comments received. The draft report is NOT updated based on public and agency comments until the final report phase.

5.3 Final Report Submission Milestone (CW-160)

This project phase is concluded when all comment responses for the public and agency reviews are incorporated into the draft document to create the final report. A second round of DQC and ATR will be done on the final report to ensure comments from the concurrent public and agency reviews have been incorporated.

5.3.1 Final Report Requirements

For the final report, civil designs are produced to approximately 35% design and cost engineering prepares a MCACES cost estimate. Environmental planning is completed to the degree necessary to ensure that the tentatively selected plan is policy compliant and legally sufficient. The final package includes the following: (1) Cover/Transmittal Memo; (2) Document Submittal Checklist; (3) Final DPR and NEPA document with Appendices; (4) Environmental Compliance Documentation; (5) Real Estate Plan; (6) Cost Estimate; (7) District Legal Certification; (8) ATR Certification Package of Final Report; and (9) DQC Certification Package of Final Report. Also see the CAP Milestones and Report Submittals Standard Operating Procedures (SOPs).

5.4 Project Closeout

At the completion of the study, the USACE project manager shall initiate the financial closeout process. The non-Federal sponsor must provide documentation for all in-kind services and costs attributed to this assessment. This documentation will be used for properly crediting the non-Federal sponsor for their work effort. Closeout will include a final accounting, a letter to the sponsor informing them of the accounting results, and reconciliation of final cost-sharing obligations. The PDT will ensure that all project documents are appropriately filed.

5.5 Team Roles and Responsibilities

5.5.1 Project Manager

The Project Manager (PM) will prepare budget documents, project justifications, update schedules and perform financial tracking and record keeping as well as coordinate on a non-technical level with the non-federal sponsor (NFS) on project activities and issues. PM is the co-lead in developing the PMP, along with the lead planner, and with assistance from the PDT, and will coordinate with the Office of Counsel on preparing the feasibility cost-sharing agreement (FCSA). The project manager will attend project team meetings and NFS meetings as required and coordinate with the lead planner in resolving issues concerning the project within the District as needed. The program analyst will assist the PM in preparing budget documents and fact sheets. In addition, the project manager will coordinate any procurement or Architect/Engineer (A/E) task order actions needed for project execution.

5.5.2 Project Management Support

Assist with management of schedule, budget, funding requests and data calls to the MSC and headquarters of the U.S. Army Corps of Engineers (HQUSACE). Provide funding for PDT member labor, project contracts, and other activities.

5.5.3 Coastal Engineering – Water Resources

The coastal engineer is responsible for the collection, review, and summarization of existing information, identifying data gaps, and determining and acquiring the necessary hydrodynamic information to be used for wave and sediment transport modeling. The coastal engineer will evaluate and establish the existing and future without project conditions for the study area, while considering the potential impacts of climate change on sea level change per USACE guidance ECB 2018-14 (Guidance for Incorporating Climate Change Impacts to Inland Hydrology in Civil Works Studies, Designs, and Projects). The coastal engineer may coordinate with the Coastal Planning Center of Expertise to review the model approach. The coastal engineer will assist in developing project measures, develop preliminary alternatives from the proposed measures, evaluate the performance of the alternatives through modeling, and prepare technical documents for each milestone. The coastal engineer will assist with the development of conceptual drawings, quantities, site plans, cost estimates, and specifications. The coastal engineer will participate in PDT meetings, public meetings, site visits, charrettes, reviews, and milestone meetings.

5.5.4 Civil Design Engineering

The engineering team will evaluate all engineering criteria needed based on USACE guidance and policy for the project and coordinate with the PDT, the Sponsor, and the appropriate regulatory agencies with the assistance of the environmental planning lead. The engineering team will estimate volumetric, linear and structural element quantities needed to construct each alternative including the TSP Plan (and Locally Preferred Plan, if needed). These quantities will be provided to the cost engineer to estimate the projected cost of each alternative. Each alternative will be compared and evaluated for improvements, additions, and modifications. Each alternative will undergo additional investigation and comparison based on its feasibility. The feasibility analysis will justify that the recommended plan be technically and structurally feasible. The PDT will identify the TSP from the various design alternatives. The Engineering Appendix summarizes key assumptions, analyses methods, and engineering decisions made throughout the Feasibility Phase. In addition,

the appendix will explain the features shown in the engineering design plans. The appendix will describe the materials and deconstruction methods to safely remove and stabilize the project site. The engineering team will participate in PDT meetings, public meetings, site visits, charrettes, reviews, and milestone meetings.

5.5.5 Cost Engineering

The cost engineer will review existing cost estimates necessary to evaluate alternative plans and prepare a detailed baseline cost estimate for the recommended plan to be used for project approval, development, and completion. The estimates will include all USACE and non-Federal costs for lands and damages, all construction features, relocation of facilities and utilities, mitigation, environmental concerns, planning, engineering and design, and supervision and administration, along with the appropriate contingencies and escalation associated with each of these activities through project completion. The TSP Milestone deliverables include Class 4 level estimates for 3 alternatives, and completion of the Abbreviated Cost Schedule Risk Analysis for the purposes of assigning planning level cost contingency. The final product will be a reliable, accurate Class 3 cost estimate in MCACES and schedule that defines the non-Federal sponsor's obligations and supports project approval within established statutory limits.

5.5.6 Geo-Science

Geo-sciences include geology and geotechnical engineering. The geo-sciences team member will collect, review, and summarize information and data concerning the geologic framework and subsurface conditions of the project area. The scope and cost assume that field explorations and laboratory testing will not be performed to obtain necessary subsurface data along the proposed project area. Geotechnical engineering analyses may be performed to identify critical design elements and provide a basis for geotechnical recommendations.

Geotechnical Analyses for this study will be focused on the following general items:

- Collection and review of existing data (no new field investigation),
- Geological and geotechnical site characterization,
- Development of alternatives, ~~and~~
- Reporting.

5.5.7 Plan Formulation

Plan formulation includes the iterative process of evaluation of alternative plans and selection of the recommended plan and includes activities that are not directly associated with other study tasks. It is the process whereby project alternatives, including the existing and future without and with-project condition, are evaluated. Alternative plans, beginning with those that have already been developed by the NFS and those included in the FID Report, will be formulated in consideration of four criteria: completeness, effectiveness, efficiency, and acceptability. The alternatives will be evaluated and compared based on a comprehensive and data-driven understanding of each alternatives' social effect, environmental impact, and contribution to national and regional economic development. As formulation progresses, alternatives will be considered in increasing level of detail and the number of alternative plans will decrease in number, until a recommended plan is selected, and a detailed evaluation is completed. The formulation process will analyze all available information and data assembled from many different components of the study. The Corps and the Sponsor will jointly conduct plan formulation.

5.5.8 Economics

The PDT will utilize the 'least cost' method in selecting the TSP and Recommended Plan and therefore no quantitative analysis will be conducted. The economist will be responsible for describing the qualitative economic benefits of the project. The economist will be responsible for developing evaluation criteria for Other Social Effects (OSE) and Regional Economic Development (RED) accounts and evaluate the OSE and RED benefits for alternative comparison. The economist will perform and document life safety considerations as part of the OSE evaluation. The economist will evaluate recreational resources.

5.5.9 Environmental

The environmental planner will participate in plan formulation, conduct agency coordination, NEPA scoping, coordinate and participate with the appropriate team members to compare alternatives, and produce appropriate NEPA documentation to evaluate the effects of the proposed action and any applicable action alternatives on the environment. The environmental manager will coordinate and monitor the production of a NEPA document to determine how the baseline environmental conditions identified below would be changed by implementation of feasible alternatives under future with-project conditions. Responsibilities will include the collection and review of existing literature and/or surveys in the project area, focusing on habitat, Federal and state endangered/threatened species and species of concern, and commercially important species. This baseline data is necessary for subsequent impact assessments that will predict changes to existing conditions that could result from the various alternatives under future with-project conditions. Additional environmental compliance requirements will be completed as applicable including FWCA, Endangered Species Act (ESA), Magnusson-Stevens Fishery Conservation and Management Act (MSFCMA), MMPA, Clean Water Act (CWA), Clean Air Act (CAA), and Coastal Zone Management Act (CZMA) compliance as well as any other applicable environmental compliance. Mitigation measures will be developed to avoid and minimize any adverse environmental impacts expected to result from the recommended plan.

5.5.10 Real Estate

This task includes all required real estate studies and analysis to support the project plan formulation and selected plan. Products include but are not limited to the following: real estate coordination, preparation of a cost estimate (gross appraisal) for lands, easements, rights-of-way, relocations and disposal (LERRD), preparation of a baseline estimate for real estate costs (M-CACES), preparation of real estate drawings/maps, Physical Takings Analysis, if necessary, Attorney's Opinion of Compensability for facility and utility relocations, if necessary, , obtaining rights-of-entry, preparation of the real estate plan, and procuring title information. At this time, it is not anticipated that the performance of a PL 91-646 Relocation Benefits Survey and plan or a request for a non-standard estate would be necessary. Real Estate Coordination and Evaluations

This subtask includes all the coordination and evaluations required to complete Real Estate effort for the feasibility study. Major work efforts include:

- **Real Estate Coordination:** Includes, but is not limited to, CESPK-RE participation in team meetings, negotiation of work requirements, coordination with other offices on study data needed for Real Estate's major study products and monitoring of progress and findings associated with Real Estate study products.

- **Gross Appraisal:** This work will be completed by an appraiser and will include preparation of a detailed estimate of all real estate costs associated with acquisition of the real property requirements (see ER 405-1- 12, Chapter 12, Section III, Appraisals, paragraph 12-12b, and Real Estate Policy Guidance Letter Number 3, Guidance for Preparation of Gross Appraisals.).
- **Baseline Real Estate Cost Estimate:** This work includes accounting for the plan's total estimated real estate cost in Code of Accounts format as required by EC 1110-2-528 under Feature Codes 01, Lands and Damages. This estimate of total real estate cost should include estimated costs for all Federal and non-Federal sponsors activities necessary for completion of the plan.
- **Preliminary Real Estate Acquisition Maps Preparation:** Determine tract ownership and acreage. Prepare real estate preliminary take line drawings.
- **Optional Task as Needed: Physical Takings Analysis:** Analytical task to evaluate if the plan development hydraulically affects property by taking or diminishing property or rights for the public's use by modifying the frequency, depth, or duration of water upon the property.
- **Optional Task as Needed: Preliminary Attorney's Opinion of Compensability:** Investigation and attorney's determination, if owners of facilities or utilities affected by the plan have a vested interest and compensable interest in the property, regarding the real estate taking. If so, the obligation or liability of the Federal Government is the cost of providing substitute facilities or utilities, if necessary, for existing publicly owned roads and utilities, as well as existing privately owned railroads and utilities.
- **Rights of Entry:** CESPK will coordinate requests and work with the sponsors to obtain rights-of-entry for the survey, Hazardous, Toxic, and Radioactive Waste (HTRW (not anticipated)), cultural resources, and geotechnical exploration work required. Rights-of-entry must be obtained before testing can be done on privately owned property.

Report Preparation

This subtask includes completion of real estate documentation for the feasibility study. Major work efforts include:

- **Preparation of Real Estate Plan:** This work includes preparation of the Real Estate Plan, which is an overall plan describing the minimum real estate requirements (see ER 405-1-12, Chapter 12).
- **Review and Revision of Report Documents:** Includes all CESPK-RE activities involved in reviewing the feasibility report and responding to CESPD comments.
- **Work with the Non-Federal Sponsor to complete the assessment of the Non-Federal Sponsor's Real Estate Acquisition Capability.**

5.5.11 Geographic Information System (GIS)

GIS technology will be used to manage the diverse geospatial data and information to be used to visualize, evaluate, and document alternatives. Tasks include developing a Geospatial Data Management Plan, identifying, and compiling existing environmental, economic, real estate and infrastructure data; creating additional data layers and corresponding metadata; providing GIS support for Hydraulics and Hydrology (H&H) models; and preparing maps for public meetings, real estate planning, feasibility report and environmental documentation.

5.5.12 Cultural Resources

The cultural resource tasks will ensure that the study complies with Section 106 of the National Historic Preservation Act, which requires federal agencies to consider the impacts from their undertakings to historic properties and significant cultural resources. The USACE will be responsible for consulting with the California SHPO as well as affiliated Tribes and historic preservation organizations throughout the Section 106 process. Tasks to comply with Section 106 involve literature research, report writing, surveys, subsurface testing (need determined during early consultation), and conducting a records search of the federal and state archaeological databases for historical and archaeological information. These tasks will help USACE to establish a solid baseline for the study area's cultural resources inventory and to determine impacts as well as ways to resolve adverse effects to a significant cultural resource through avoidance, minimization, or mitigation. The records search will require a shared cost with the non-federal sponsor and will be held at the Northwest Information Center of the California Historical Resources Information System at Sonoma State University. All recorded cultural resource sites and known surveys within the project area will be obtained from the records search. The USACE as the lead federal agency for Section 106 will lead consultation with the study area's affiliated Tribes in collaboration with the non-federal sponsor. This includes coordination with the Native American Heritage Commission.

6 Critical Assumptions and Constraints

6.1 Critical Assumptions

The scope, schedule and cost for the study are based on the following assumptions:

1. The study will focus on Princeton Shoreline only as authorized and described in section 2 of this PMP.
2. DQC will be conducted on a rolling basis. All technical deliverables will undergo DQC prior to being given to the PDT for use.
3. The Coastal modeling will undergo targeted ATR.
4. An Environmental Assessment is anticipated to be sufficient to meet NEPA requirements.
5. CAP staff will prioritize CAP work over other non-CAP competing priorities.

6.2 Constraints

1. The Federal CAP limit is $15,000,000 for the FID, PMP, FCSA, Integrated Feasibility/NEPA Study, Design and Implementation.
2. There is limited Non-federal sponsor cost sharing for Section 111, resulting in a very limited budget for the study, design and construction.

7 Study Cost Estimate

The total study cost is estimated to be $2,435,00.

Activity Name	USACE Labor Cost	USACE Non-Labor Cost	Non-Fed Labor Cost WIK	
Project Management	$170,016	$500		
Geotechnical Engineering	$141,680	$500		
Civil Design Engineering	$165,094	$5,044		
Coastal Engineering	$317,216	$1,618		
GIS	$36,513	$0		
Cost Engineering	$172,859	$500		
Real Estate	$182,299	$0		
Environmental	$261,602	$50,000		
Cultural Resources	$121,716	$3,500		
Plan Formulation	$246,854	$0		
Public Engagement	$19,136	$0		
Economics	$57,960	$2,500		
External Teams Support (Reviews and Report Editing/Formatting)	$202,58	$0		
Totals	$2,090,418	$64,662		
Totals with Contingency	$2,360,218	$74,361		
Rounded Totals	**$2,360,00**	**$74,000**		

Table 3 - PDT Members Cost Estimate

7.1 Work in Kind

Work in-Kind is work that the Federal government would otherwise have performed or provided that the Non-Federal Sponsor will perform or provide. Work products provided by the Non-Federal Sponsor as in-kind contributions must be completed in accordance with the USACE Quality Management Procedures to assure the production of that work product is of a high quality.

Specifically, these work products need to undergo a similar peer review and QA/QC review process as required for work products prepared by the Corps. Each submittal must have a USACE-approved Quality Control Plan on file, which identifies the Quality Control methodology.

There will be a USACE team member assigned from each technical discipline to assist with development of the scopes of work and to review the in-kind deliverables to ensure they meet the USACE policy and study requirements. Scopes of work will be reviewed by a Contracting Officer Representative for format and consistency, whenever possible. This will also help ensure that in-kind service credit will be granted for the work performed.

Table 4 - NFS Cost Estimate

Activity Name	NFS Labor Cost	NFS Non-Labor Cost	TotalStudyCost
Contingency			
Total			

8 Funding Requirements

The CAP includes delegated authority to plan, design, and construct certain types of water resource and environmental restoration projects without specific Congressional authorization. The maximum total Federal expenditure for a Section 111 project cannot exceed $15,000,000.

CAP 111 studies are initiated with up to $100,000 in Federal funds. Feasibility study costs exceeding $100,000 are cost shared based on the cost share of the original project causing damage to the shoreline (the Federal breakwaters at Pillar Point Harbor). NFS cost share may include cash, work-in-kind, or a combination of both.

NFS must provide all lands, easements, rights-of-way, relocations, and dredged material disposal areas (LERRDs) needed for project construction and maintenance. NFS cost share includes credit for provision of required LERRDs and pre-approved work-in-kind. At least 5 percent of the cost share requirement must be provided in cash. NFS is responsible for all project operation and maintenance (O&M) costs when the project is completed. A new or updated PMP will be developed for Design and Construction.

The PM will provide a quarterly cost share update to the NFS, documenting expenditures and cost share balance/remaining balance due and request an auditable package for expenses incurred by NFS for WIK every six months. The PMP will be updated if WIK is determined to be appropriate.

The PM will request Federal feasibility funding after the FCSA is executed. Total estimated Federal cost not including D&I is $2,388,168. The PDT cannot start work until Federal funding is available even if the Non-Fed funding has been received. No expenditures can occur until the both sponsors have contributed equally either through funds or in-kind work.

9 Study Schedule

The total duration of the study is estimated to be 24 months. Completing the study on schedule is one of the primary objectives of all PDT members.

Milestone	Description	Date	Notes
CW040	Project Management Plan	DEC 2024	PMB is 26 Nov 2024
CW130	Feasibility Cost Sharing Agreement	May 2025	PMB is 22 Apr 2025
CW262	Tentatively Selected Plan	May 2026	No PMB
CW170	Final Report Approval	February 2027	No PMB

Table 5 - Study Schedule

10 Supporting Documents

The Project Management Plan includes the project-specific supporting documents discussed below.

10.1 Quality Management Plan and Objectives

10.1.1 Quality Management Plan

The project will adhere to EM 5-1-11, ER 5-1-11 and to quality assurance procedures outlined in the project's Review Plan (RP) (ER 1165-2-217) once it is developed. The RP will be approved by SPD and posted on the district's website for public review and comment in accordance with ER 1165-2-217. Like any aspect of the PMP, the RP is a living document and may change as the Investigation progresses.

Guidance on policy compliance review and approval of decision documents is provided by EP 1105-2-61. SPN performs quality assurance and will be responsible for vertical and horizontal coordination and provide the on-going technical, policy and legal compliance support to SPD. Key coordination points during the planning process are shown in the project schedule attached to this PMP.

The feasibility-level reviews outlined in RP will include DQC and ATR will be done on the Draft and Final Integrated Report, including the NEPA document, technical and engineering appendices, and models.

DQC is the review of basic science and engineering work products focused on fulfilling the project quality requirements defined in this PMP. DQC will be managed and conducted by staff in SPN. As part of this process the PDT and DQC team will be responsible for a complete reading of the Feasibility Report to assure the overall integrity of the Report, technical appendices, and the recommendations.

ATR is an in-depth review, managed with the USACE, and conducted by a qualified team outside SPN that is not involved in the day-to-day activities associated with the study. In accordance with EC 1165-2-217, a review team comprised of technical experts from other USACE Districts will review the feasibility report for technical accuracy and policy compliance. Comments will be documented in Dr. Checks. The purpose of ATR is to ensure the proper application of clearly established criteria, regulations, laws, codes, principles, and

professional practices. The ATR will be managed by the RMO. An ATR Summary Report will be produced for the record.

10.2 Acquisition plan

The award of any contract, which obligates Federal or State appropriations, is exclusively within the control of the Federal or local Government, respectively. The award of any contract by the NFS, which obligates funds of the NFS shall be exclusively within the control of the NFS but shall be subject to applicable Federal and local statutes and regulations.

The procurement of professional services for the project will be accomplished through open-end indefinite quantity and/or indefinite delivery type contracts and specific service contracts. The Engineering Division will prepare scopes for Professional Service and Architect-Engineer (A-E) contracts in accordance with project requirements. The Project Manager will assure that funding is appropriate and proper accounts are utilized. USACE procurement activities will be conducted by the contracting elements of the San Francisco District in accordance with the Federal procurement regulations.

No contract work is anticipated currently.

10.3 Risk Management Plan

Engineer Manual 5-1-11, Management Project Delivery Business Process, outlines processes for project risk analysis. Risk Analysis includes risk identification, qualitative and quantitative assessment, response and monitoring. The PDT will use a risk register to analyze risks. The risk register will be updated as needed and at each milestone. The risk register includes identification of the risk and a risk description, probability and impact of the risk, cost and/or schedule impact, who's responsible, and the response strategy. The PDT will use the USACE e-Risk Tool: https://err.sec.usace.army.mil/projects.

10.4 Safety and Occupational Health Plan (N/A for Feasibility)

It is equally important to include safety, health, and loss control in the decision-making process for plan selection, engineering, and design, and in the preparation of the plans and specifications. All project participants have a responsibility to be aware of and help identify and resolve safety issues such as hazardous operations, special conditions, and community or environmental concerns as early in the project as possible. The USACE Safety and Occupational Health Office will provide guidance and advice in all areas of safety. Periodical reviews of the project for safety consistent with that office's mission and function will be performed. It is the USACE objective to identity potential hazardous situations early and to manage them properly within the constraints of operational effectiveness, time, and cost.

During preparation of plans and specifications, a preliminary hazard analysis shall be prepared. A copy of this document shall be provided to the District Safety Office and the NFS. This preliminary hazard analysis will be reviewed when this effort is initiated. Emergency Disaster Management (EDM) 56, Implementation and Safety Requirements in A-E and CE Contracts will be reviewed and followed. The preliminary hazard analysis will serve as the written safety program referred to therein.

10.5 Change Management Plan

The purpose of a Change Management is to define and manage the project's baseline performance measurement thresholds for changes in scope, schedule, and cost to determine if actual project performance has exceeded these thresholds. Project change can be:

Schedule Change - Minor changes to a project's schedule occur frequently, and many can be absorbed by adjusting either the sequence or duration of tasks. Threshold = critical milestone slips of more that 15 percent (e.g., 2 months slip within a FY).

Scope Change - If the change is determined to impact one or more of the project's technical elements, all of which are represented as members of the PDT, these members will be consulted by the Project Manager to evaluate how that change can be best incorporated with the least impact. Threshold = depends on the resultant cost impact.

Cost Change - The most significant project change is a change in the project's cost. Most projects are now cost-shared between the Government and a non-Federal sponsor and any change in their contribution can have a significant impact on the sponsor's ability to provide that contribution. The Project Manager must constantly monitor schedule and scope changes and assess how these changes impact on the project's cost. If these changes indicate that a change in the project's cost is necessary, the sponsor must immediately be consulted and agree to the change in project cost before that change can be implemented. Threshold = cost increase of more than 10 percent in each FY.

The PMP will be revised (minimally) at the beginning of each fiscal year (FY) and incorporate changes in the work planned for that FY because of changes in the schedule, scope and/or cost addressed during the previous FY. If significant changes occur during a FY (based on threshold values), a revision of the PMP will be necessary.

10.6 Communication Plan

Communications occur in two major arenas -- internal to the PDT and external to the PDT. A communication plan establishes internal and external communication strategies and to determine the information needs of the PDT members and stakeholders – who need what information, when they will need it, how it will be given to them, and by whom. The following paragraphs describe our approach to communications.

10.6.1 Internal/ NFS

Coordination between different parties of the PDT is necessary to disseminate information and/or educate for project purposes. All parties are free to discuss any pertinent concerns and reserve the right to request other PDT members for an audience or points of concerns. Methods of internal team communication can include the following: electronic communications via email, publications, or internet site; printed communication via printed or copied documents; verbal communication via face-to-face discussions, meetings, or phone calls; visual communications via PowerPoint, videos tapes, posters, or pictures.

Bi-weekly PDT meetings will be held, including the NFS. USACE and NFS PMs will hold monthly meetings and informal communication as needed. Notes will be sent to participants and saved in ProjectWise and Teams project folders. Key issues will be carried forward in agendas for subsequent meetings until resolved. Section Chiefs will be updated at the monthly Civil Works In-progress Risk and Action Review (IPR-A). The Project Review Board will be briefed about the project as needed, no less than twice a year. An ExCOMM will be held once a quarter. The PM, RCPC Program Manager, SPN Executive Management, and NFS Executive Management will attend. Key decisions for all the above meetings will be captured in a decision log.

All team members are responsible for staying current with policies and processes affecting their work and checking for new communications.

10.6.2 External

A Public Involvement Plan will be developed by the PDT and NFS at the beginning of the study to identify stakeholders and document the communication process.

Proper procedure should be followed while communicating with contractors and non-government personnel to ensure the protection and non-disclosure of sensitive information. The Public Affairs Office (PAO) is the communications consultant to assist stakeholders and to develop communications requirements on behalf of the PDT. The USACE communications principles include listening to all constituents, both inside and outside USACE, respecting their viewpoints on issues of concerns.

- Communicate Vision and Scope Statement to all stakeholders, through meetings, interviews, and initial communications via website.
- Participate in local sponsor meetings.
- Participate in resource agency meetings.
- Support for community meetings.
- Closeout Plan

Appendix A – Acronyms and Abbreviations

A/E	Architect/Engineering
ACSRA	Abbreviated Cost Schedule Risk Analysis
APE	Area of Potential Effects
ATR	Agency Technical Review
CAA	Clean Air Act
CAP	Continuing Authorities Program
CAR	U.S. Fish and Wildlife Service, Coordination Act Report
CPRA	Coastal Protection and Restoration Act
CWA	Clean Water Act
D&I	Design and Implementation
DPR	Detailed Project Report
DQC	District Quality Control
EDM	Emergency Disaster Management
ER	Engineer Regulation
ESA	Endangered Species Act
FCA	Flood Control Act
FID	Federal Interest Determination
FSM	Feasibility Scoping Meeting
FCSA	Feasibility Cost Sharing Agreement
FWCA	Fish and Wildlife Coordination Act
FY	Fiscal Year
GIS	Geographic Information System
H&H	Hydraulics and Hydrology
HQUSACE	Headquarters, U.S. Army Corps of Engineers
HTRW	Hazardous, Toxic, and Radioactive Waste
IPR-A	In-progress Risk and Action Review
LERRDs	Land, Easements, Right-of-Way and Relocations and Disposal/Borrow Areas
MMPA	Marine Mammal Protection Act
MSC QA	Major Subordinate Command Quality Assurance
NEPA	National Environmental Policy Act

NFS	Non-Federal Sponsor
NMFS	National Marine Fisheries Service
O&M	Operation and Maintenance
OSE	Other Social Effects
PAO	Public Affairs Office
PDT	Project Delivery Team
P&LCR	Policy and Legal Compliance Review
PM	Project Manager
PMP	Project Management Plan
RED	Regional Economic Development
RIT	Regional Integration Team
RMO	Review Management Organization
RP	Review Plan
SHPO	State Historic Preservation Officer
SOP	Standard Operating Procedure
TSP	Tentatively Selected Plan
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
WBS	Work Breakdown Structure
WMA	Wildlife Management Area
WRDA	Water Resources Development Act

Appendix B – References

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