

# SPD CAP Programmatic Review Plan

## ATTACHMENT 1A

### Review Plan Execution Sheet

*(using Template 3.12.18)*

#### Project Title: Lower Colma Creek, CAP 103

**CAP Section 103** of the Rivers and Harbors Act of 1962, as amended (33 USC 426g), authorizes the USACE to study, adopt and construct continuing authority **beach erosion control (coastal storm risk reduction)** projects. Per ER 1105-2-100: "This authority may be used for protecting multiple public and private properties and facilities and single non-Federal public properties and facilities against damages caused by storm driven waves and currents."

#### 0. PROJECT INFORMATION

##### • **Project Description.**

Local sponsor is City of South San Francisco, working through the South San Francisco Water Quality Control Plant (WQCP). The study is addressing coastal flood risk to the South San Francisco Water Quality Control Plant (WQCP). Inundation of the WQCP could potentially cause physical damages and loss of water quality control services, resulting in untreated sewage released into the Bay and potentially backing up in streets and homes in the service area. The WQCP critical infrastructure services San Francisco International Airport, Millbrae, Burlingame, and San Bruno. This area has more than 165,000 full time residents, plus the daily population of San Francisco International Airport who rely on the plant.

There have been no improvements to reduce flood risk in the area surrounding the plant. The project would address the problem of coastal flood risk to the SSF WQCP (caused by storm driven waves). Flood risk is expected to increase over time due to the location in a low-lying area.

Floodwalls and dry floodproofing are being considered, as well as a rerouting of the Bay Trail for recreation. Measures which were screened include levees, ecotone levees, storm surge barrier, relocation, elevating structures, and tide gates.

The draft estimated cost for the various alternatives is \$12.25M, \$9.53M, and \$4.79M, respectively.

##### a. **Factors Affecting the Scope and Level of Review.**

- i. The team has not identified any technical, institutional, nor social challenges for this study at this time.
- ii. The most critical uncertainty identified to date relates to future sea level rise, and the team will consider potential adaptability of an eventual recommendation and compare how

each alternative in the final array performs with all three sea level rise curves. The risk associated with plant failure to public health based on exposure to untreated sewage is high. No engineering risks have been identified at this time.

iii. The District Chief of Engineering has assessed whether there is a significant threat to human life associated with the project and concluded that there is not a significant threat to human life due to shallow and slow-moving flood depths and emergency electrical shutoff measures that are triggered by water. The biggest threat to human life would be if the electrical system does not shut off in a flood event and workers were to be electrocuted, or if someone gets injured or falls and is unable to get to a higher elevation or stand. These risks have been reduced by including an early warning system in all alternatives and measures, such as electrical raising and elevated walkways to the nonstructural only plan in order to make them complete. In the future without project condition, the workers would evacuate during a flood, which reduces the risk to life safety, though it carries other damages.

IEPR Type I is not likely to be required as flood depths are shallow (0.01 to 1.72 ft for a .2% annual exceedance probability event in 2073, using the USACE intermediate sea level rise curve.) and velocities are not expected to exceed 7.44 ft/s. The TSP is not likely to be justified by life safety, as the BCR exceeds 1.0 for all alternatives. However, life safety may still be a factor in screening the non-structural only alternative due to the operation needs of the plant to have workers on site and able to go safely between buildings when floodwater would otherwise be ponding for the non-structural alternative.

One objective of this study is to avoid plant shutdowns and loss of wastewater treatment services during a coastal storm event. Given the need for workers to manage flows and levels of the treatment tanks, etc., human life/safety assurance is a factor for evaluating the alternatives. This is especially true for the non-structural only alternative where buildings would be floodproofed, but floodwaters could surround them. The PDT will evaluate the safety of the operating environment for the wastewater treatment plan for workers during a flood event, and non-structural measures such as operating safety standards will also be evaluated. This is important to include as even shallow water can knock someone off their feet if attempting to walk through it. Furthermore, water in electrical systems could risk damage and inoperability should floodwaters enter a building where workers are operating the plant in a flood event. These risks to human life and safety will be part of the evaluation and plan selection, and consideration will be given to how to appropriately manage these risks. That said, there does not appear to be a significant threat to human life associated with this project.

**b. In-Kind Contributions.** There are no in-kind contributions for this project.

**1. DISTRICT QUALITY CONTROL (DQC)**

**. Identification of DQC Lead.** Jaime O’Halloran

**a. Required DQC Team Expertise.**

DQC Disciplines	Expertise Required
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Planning	The plan formulation reviewer should have experience in USACE plan formulation, and the modernized CAP planning process, preferably in CSRSM studies.
Economics	The economics reviewer should be either from the certified list by business line, or for exceptions, be approved as developmental reviewer by the Economics Sub-Community of Practice. It is required for the Economics reviewer have familiarity with HEC-FDA.
Environmental Resources	The environmental reviewer should have demonstrated experience in the field of environmental effects analysis of coastal projects, preferably in and around west coast estuaries. The reviewer should be familiar with all threatened and endangered species in the area, as well as NEPA and the Coastal Zone Management, Clean Water and Marine Mammal Protection Acts.
Cultural Resources	The cultural resources reviewer should have experience in completing cultural resources analysis for a coastal storm or flood risk reduction study. An understanding on the significance of the region's precontact archaeological sites, such as shell middens, is needed due to this cultural resource type being situated throughout the study area. The reviewer should also have years of experience in complying with federal environmental and historic preservation law, specifically Section 106 of the National Historic Preservation Act and its implementing regulations under 36 CFR 800 as well as NEPA. Knowledge on USACE's tribal trust responsibilities and any other regulations tied to coordination with tribes and historic organizations is needed.
Hydrology & Hydraulic Engineering	The hydraulic engineering reviewer will be an expert in the field of hydrology and hydraulics and have experience in completing hydraulic modeling and analysis for a coastal storm or flood risk reduction project. They should have a thorough understanding of coastal flooding processes, open channel dynamics, application of flood walls, non-structural solutions involving flood warning systems and flood proofing, application of the USACE sea level rise curves, and operating 2D HEC-RAS hydraulic modeling software.
Geotechnical Engineering	The reviewer should have recent experience in the Corps' design requirements. This person should also have experience in investigating existing subsurface conditions and materials; determining their physical/mechanical and chemical properties that are relevant to the project considered, assessing risks posed by site conditions; designing earthworks and structure foundations; and monitoring site conditions, earthwork and foundation construction.

Civil Engineering	The reviewer should have recent experience in the design of plans for various coastal storm damage reduction features such as flood walls, flood gates, and non-structural measures.
Cost Engineering	The reviewer should be a cost estimating specialist competent in cost estimating for both construction and ecosystem restoration using MCACES/MII; working knowledge of construction and environmental restoration; capable of making professional determinations based on experience.
Real Estate	Real Estate reviewers should be senior real estate specialist with experience in coastal storm damage reduction studies.

**b. DQC Documentation.** DQC reviewers are requested to record comments in DrChecks, however, comments may also be recorded in either in tracked changes, as comments in documents, or in a Word document. Once comments are addressed and back-checked, USACE management certifies that DQC is completed. DQC documentation will be available for Agency Technical Reviewers.

**c. Identification of Special Project Delivery Team Roles.**

- i. **Review Manager.** Jamie O’Halloran will coordinate the DQC review. She is an experienced planner and project manager, who is currently managing a similar CAP study on the Gila River . Ms. O’Halloran is familiar with CAP and is a Project Manager and Senior Planner in the Regional CAP Production Center. She has the experience and skills to guide a virtual team through the review process.
- ii. **Planning Technical Lead.** Daria Mazey
- iii. **Engineering Technical Lead.** Seongjun Kim

**2. AGENCY TECHNICAL REVIEW (ATR)**

**. Identification of ATR Lead.**

**a. Required ATR Team Expertise.**

<b>ATR Disciplines</b>	<b>Expertise Required</b>
ATR Lead	The ATR lead should be a senior professional with extensive experience in preparing Civil Works decision documents and conducting ATR. The lead should also have the necessary skills and experience to lead a virtual team through the ATR process. The ATR lead may also serve as a reviewer for a specific discipline (such as planning, economics, environmental resources, etc.).
Plan Formulation	The plan formulation reviewer should have experience in USACE plan formulation, be familiar with the “Planning Guidance Notebook” (ER-1105-2-100), the Water Resources Council’s Principals and Guidelines, SMART Planning guidance, and the modernized CAP planning process, preferably in CSR studies.

Economics	The Economics reviewer should be a senior economist with experience in the analysis of demographics, land use, recreation analysis, and flood damage assessments using HEC-FDA; use of RECONS model to address regional economic development associated with a project; discussion of other social effects (OSE) associated with flood risk, and well as OSE benefits from reduction in flood risk; economic justification of projects in accordance with current USACE policy for urban flood damages and industrial flood damages.
Environmental Resources	The environmental reviewer should have demonstrated experience in the field of environmental effects analysis of coastal projects, preferably in and around west coast estuaries. The reviewer should be familiar with all threatened and endangered species in the area, as well as NEPA and the Coastal Zone Management, Clean Water and Marine Mammal Protection Acts.
Cultural Resources	The cultural resources reviewer should have experience in completing cultural resources analysis for a coastal storm or flood risk reduction study. An understanding on the significance of the region's precontact archaeological sites, such as shell middens, is needed due to this cultural resource type being situated throughout the study area. The reviewer should also have years of experience in complying with federal environmental and historic preservation law, specifically Section 106 of the National Historic Preservation Act and its implementing regulations under 36 CFR 800 as well as NEPA. Knowledge on USACE's tribal trust responsibilities and any other regulations tied to coordination with tribes and historic organizations is needed.
Hydrology, Hydraulic, & Coastal Engineering	The hydraulic engineering reviewer will be an expert in the field of hydrology and hydraulics and have experience in completing hydraulic modeling and analysis for a coastal storm or flood risk reduction project. They should have a thorough understanding of coastal flooding processes, open channel dynamics, application of flood walls, non-structural solutions involving flood warning systems and flood proofing, application of the USACE sea level rise curves, and operating 2D HEC-RAS hydraulic modeling software.
Geotechnical Engineering	The reviewer should be a geotechnical engineer familiar with sampling and laboratory testing, embankment stability and seepage analyses, planning analysis, floodwalls, fragility curves, and a number of other closely associated technical subjects.
Civil Engineering	The reviewer should be a civil engineer with experience in designing grading plans and floodwalls, and bank-protection removal or modification.
Cost Engineering	Cost MCX Staff or Cost MCX Pre-Certified Professional with experience preparing cost estimates for flood risk management projects and the application of scientific principles and techniques to problems of cost estimating, cost control, business planning and

	management science, profitability analysis, project management, planning and scheduling.
Real Estate	The real estate specialist should be familiar with real estate valuation, gross appraisal, utility relocations, takings, and partial takings as needed for implementation of Civil Works projects.
Risk Analysis	The risk analysis reviewer will be experienced with performing and presenting risk analyses in accordance with ER 1105-2-101 and other related guidance, including familiarity with how information from the various disciplines involved in the analysis interact and affect the results. The reviewer should also be familiar with failure tree statistical analysis and flood risk transfer. The risk analysis review may also be completed by the plan formulation, economics, and H&H/coastal engineering reviewers.
Climate Preparedness and Resilience CoP	A member of the Climate Preparedness and Resilience Community of Practice will participate in the ATR review as required by ER 1165-2-217 for studies involving inland hydrology or coastal sea level change.

**3. INDEPENDENT EXTERNAL PEER REVIEW (IEPR)**

**4. Decision on Type I IEPR.** In accordance with Director of Civil Works Memorandum (05 APR 2019), Interim Guidance on Streamlining Independent External Peer Review (IEPR) for Improved Civil Works Product Delivery, the three mandatory conditions determining whether Type I IEPR is undertaken are as follows:

- . When the estimated total cost of the project, including mitigation costs, is greater than \$200 million.

Not applicable here.

- a. When the Governor of an affected state requests a peer review by independent experts.

Not applicable here.

- b. When the Chief of Engineers determines the project study is controversial due to significant public dispute over the size, nature, or effects of the project or the economic or environmental costs or benefits of the project (including but not limited to projects requiring an environmental impact statement (EIS)).

The decision to forgo Type I IEPR will be reviewed at the TSP Milestone and the TSP MFR will document the MSC’s risk-informed assessment of the expected contribution of IEPR and determination that Type I IEPR is not required. Due to the limited scope of this study, it is anticipated that Type I IEPR would not provide substantial benefit to the project. The project is not expected to have significant environmental impacts and will therefore be completing an EA, not an EIS. There is also a low potential for public controversy and complexity. The consequences of non-performance on project economics, the environmental and social well-being (public safety and social justice) could potentially be substantial and will be evaluated as part of the Feasibility Study. Additionally, the outcomes of the study are not anticipated to contain influential scientific information or highly influential scientific assessment. No additional action to exclude the study from IEPR is necessary.

c. Required Type I IEPR Panel Expertise.

IEPR Panel Disciplines	Expertise Required
NA	NA

d. Anticipated Type II IEPR (Safety Assurance Review (SAR)).  
Not anticipated.

5. MODEL CERTIFICATION AND APPROVAL

• Planning Models.

The following planning models are anticipated to be used in the development of the decision document:

Model Name and Version	Brief Description of the Model and How It Will Be Applied in the Study	Approval Status	Peer Review Anticipated
HEC-FDA v. 1.4.3	FDA has been used to compute without project damages, and with project benefits.	Certified	N/A. DQC and ATR will review how the model was applied.
Excel – Flood Depths by Structure	Extreme Tide Elevations for every year, ACE event, and SLR scenario combination were measured against the building elevations to determine flood depths for each significant structure in the WQCP. Elevations were taken from as-built plans, ground elevations, and a survey of the building floor slab elevations in September 2021. This is necessary as the terrain data in the HEC-RAS model does not accurately represent the elevation where the structures begin to flood.		March 4- March 25, 2022 via DQC

• Engineering Models.

The following engineering models are anticipated to be used in the development of the decision document:

Model Name and Version	Brief Description of the Model and How It Will Be Applied in the Study	Approval Status	Peer Review Anticipated
HEC-RAS 6.0	Hydraulic Engineering Center’s River Analysis System (HEC-RAS) will be used to create a 2-D model of the project area. This model will help visualize the depths, extents, and progression of all the flooding scenarios. The model will be used to view existing conditions as well as future project	Certified	N/A

	a lternatives and how they may affect the flooding depths, extents, and progression.		
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## 6. REVIEW SCHEDULES AND COSTS

**TSP Milestone:** 28 March 2022

**Pre-TSP IPR:** 21 March 2022 and read aheads due

**Release Report:** Thursday April 22, 2022

- a. **DQCSchedule and Cost.** March 31-April 21, 2022 (3 weeks)
- b. **ATR Schedule and Cost.** Estimated cost is \$65k. Schedule: April 22, 2022 – Friday, June 2, 2022 (6 weeks)
- c. **Planning and Engineering Model Peer Review Schedule and Cost.** March 8 - April 21, 2022 (via DQC. DQC for H&H, Geotech, Civil will all start in March, and DQC on Econ, PLF, and Env will follow as soon as sections are completed)
- d. **Type I IEPR Schedule and Cost.** N/A
- e. **Type II IEPR (SAR) Schedule and Cost.** N/A

## 2. PUBLIC PARTICIPATION

The PDT has been coordinating with local resource agencies, tribes, and other stakeholders working on projects near the project area. Coordination included engagement during project scoping and follow-up engagement is planned prior to the TSP milestone after the array of alternatives has been analyzed. The draft report will be released for public comment after the TSP milestone.

## 3. REVIEW PLAN POINTS OF CONTACT

Public questions and/or comments on this review plan can be directed to the following point(s) of contact:

Daria Mazey, Lead Planner, [daria.s.mazey@usace.army.mil](mailto:daria.s.mazey@usace.army.mil)

Robert Grimes, Project Manager, [robert.j.grimes@usace.army.mil](mailto:robert.j.grimes@usace.army.mil), 505-342-3389

## 4. TEAM ROSTER

Discipline or Role	Team Member Name	Organization	Credentials, Years of Experience	Contact Information (email and phone)
<b>Project Delivery Team</b>				
Project Manager/ Economist	Robert Grimes	USACE, RCPC	15 years	<a href="mailto:Robert.J.Grimes@usace.army.mil">Robert.J.Grimes@usace.army.mil</a> , 415-858-8566
Planner	Daria Mazey	USACE, RCPC	MPA, WRCP, 15 years	<a href="mailto:Daria.s.mazey@usace.army.mil">Daria.s.mazey@usace.army.mil</a> , 213-330-9356 (mb)
Environmental Lead	Jeneya Fertel	SPN Environmental Planning Section	MS, 6 years	<a href="mailto:Jeneya.A.Fertel@usace.army.mil">Jeneya.A.Fertel@usace.army.mil</a> , 415-503-6839

Cultural Resources Lead	Ruzel Ednalino	SPN Environmental Planning Section	MA, 4 years	<a href="mailto:Ruzel.B.Ednalino@usace.army.mil">Ruzel.B.Ednalino@usace.army.mil</a> , 415-503-6661
H&H Engineer	Seongjun Kim	USACE, RCPC	MS, 3 years	Seongjun.Kim@usace.army.mil, 415-289-3351
Coastal Engineer	Spencer Harper	SPN, Water Resources Section	PE, CFM, MS, 4 years	<a href="mailto:Spencer.H.Harper@usace.army.mil">Spencer.H.Harper@usace.army.mil</a> 415-503-6809
Civil Design	George Fong	SPN, Civil Design	CalPE, 21 years	<a href="mailto:George.g.fong@usace.army.mil">George.g.fong@usace.army.mil</a> , 415-308-2580 (mb)
Geotechnical Engineer	Fyodor Delyaei	SPN, Geotechnical	PE, 14 years	<a href="mailto:fyodor.delyaei@usace.army.mil">fyodor.delyaei@usace.army.mil</a> , 408-933-8241 (mb)
Real Estate	Robert Grunert	SPK, Real Estate	3 years	<a href="mailto:Robert.e.grunert@usace.army.mil">Robert.e.grunert@usace.army.mil</a> 415-503-6823
Cost Engineer	Mike Vo	SPN, Cost Engineering	BS, 8 years	<a href="mailto:mike.vo@usace.army.mil">mike.vo@usace.army.mil</a> , (415) 503-6810; 817-528-7640 (mb)
<b>District Quality Control Team</b>				
Planner/ Project Manager	Jaime O'Halloran	USACE, RCPC		Jaime.l.o'halloran@usace.army.mil, (415) 503-6738
Water Resources	Patrick O'Brien	SPN, Water Resources	PhD, PE, 26 years	Patrick.S.O'Brien@usace.army.mil, 503- 344-8752
Environmental	Julie Beagle	SPN, Environmental Resources		julie.r.beagle@usace.army.mil
Cultural	Stephanie Bergman	SPN, Environmental Resources		
Design	Arhit Laikram & Jin Yang	SPN, Civil Design		
Economics	Jim Howells	SPN, Economics		
Geosciences	Bernard Wair	SPN		
Real Estate	Keisha Salaam	SPK, Real Estate		
Cost	Warren Tan	SPN, Cost		
<b>Agency Technical Review Team</b>				
ATR Lead / Plan Formulation Reviewer	Rachel Haug	USACE, NAO		
<b>South Pacific Division</b>				
DST Lead	Jay Kinberger	SPD- CWID		<a href="mailto:jay.kinberger@usace.army.mil">jay.kinberger@usace.army.mil</a> , 415-260-7800
Planning QA Lead	Cynthia Fowler	CESPD-PDP		<a href="mailto:cynthia.j.fowler@usace.army.mil">cynthia.j.fowler@usace.army.mil</a> , (415) 638-1869
<b>Review Management Organization (if not SPD)</b>				

## 5. PROJECT FACTSHEET REVISIONS

Revision Date	Description of Change	Page / Paragraph Number

6. CURRENT APPROVED SPD CAP PgRP (attached)

**7. DISTRICT CONCURRENCE**

We the undersigned concur in the review plan execution sheet, dated 22 April 2022, for the Lower Colma Creek CAP 103 project.

\_\_\_\_\_  
Thomas Kendall, PE  
San Francisco District Planning Chief

\_\_\_\_\_  
date

\_\_\_\_\_  
Son Ha, PE  
San Francisco District Engineering Chief

\_\_\_\_\_  
date

# SPD CAP Programmatic Review Plan

## ATTACHMENT 1B

### Review Plan Execution Sheet Instructions\*

**\*Instructions in are in Blue.**

A review plan execution sheet (RP execution sheet) is required for every SPD Continuing Authorities Program (CAP) study covered by the **Programmatic Review Plan (PgRP) for SPD CAP**. It is in the RP execution sheet that project-specific details and the rationale for the peer review strategy are provided. Use the instructions provided below to complete the Project Review Plan Execution Sheet with the project information.

**Project Title:**

**CAP Section:**

#### 1. PROJECT INFORMATION

- **Project Description.** **DESCRIBE** the basic background information on the project to provide an overview for the PDT, RMO, review teams, and public. At minimum, briefly describe the study area, the types of measures/alternatives to be considered in the study, the estimated cost (or range of cost) for a potentially recommended plan, and the non-Federal sponsor(s). Also identify the status of any existing or anticipated policy waiver requests (pursued per paragraph F-10.f.(4) of ER 1105-2-100, Appendix F).

For Section 107 studies also **INCLUDE** information regarding the status of the Section 107 Fact Sheet prepared for approval by HQUSACE in consultation with the OASA (CW) during the fully Federal funded portion of the feasibility phase of the study.

- **Factors Affecting the Scope and Level of Review.** **DISCUSS** the factors supporting the use of the PgRP to determine the appropriate scope and level of review for the study. The discussion must be detailed enough to assess the applicability of the PgRP and determine the types of expertise needed on the various review teams. At minimum, the discussion should address:
  - i. If parts of the study will likely be challenging (with some discussion as to why or why not and, if so, in what ways – consider technical, institutional, and social challenges, etc.).
  - ii. A preliminary assessment of where the project risks are likely to occur and what the magnitude of those risks might be (e.g., what are the uncertainties and how might they affect the success of the project).
  - iii. An assessment by the District Chief of Engineering as to whether there is a significant threat to human life associated with the project.

The discussion should also support the determination that IEPR Type I is not required for **Section 14, 107, 111, 204, 206, 208 and 1135** projects and IEPR Type I is required for **Section 103 and 205** projects.

- **In-Kind Contributions.** **DESCRIBE** the expected in-kind products/analyses to be provided by the non-Federal sponsor (including those produced by contractors), or indicate that no in-kind products are anticipated. Products and analyses provided by non-Federal sponsors as in-kind services are subject to DQC and ATR, similar to any products developed by USACE.

## 2. DISTRICT QUALITY CONTROL (DQC)

- **Required DQC Team Expertise.** **PROVIDE** a list of potential DQC disciplines required and briefly describes the types of expertise that will be represented on the DQC team.

DQC Disciplines	Expertise Required
<i>Select from the disciplines listed below, delete any disciplines that are not applicable and add other disciplines as appropriate...</i>	<i>Add the expertise required for each discipline based on the specific needs of the study...</i>
Planning	
Economics	
Environmental Resources	
Cultural Resources	
Hydrology	
Hydraulic Engineering	<u><i>Example Description:</i> The hydraulic engineering reviewer will be an expert in the field of hydraulics and have a thorough understanding of – insert specific requirements based on study objectives and proposed measures – for example, knowledge of open channel dynamics, enclosed channel systems, application of detention/retention basins, application of levees and flood walls, non-structural solutions involving flood warning systems and flood proofing, etc. and/or computer modeling techniques that will be used such as HEC-RAS, FLO-2D, UNET, TABS, etc.</u>
Coastal Engineering	
Geotechnical Engineering	
Civil Engineering	
Structural Engineering	
Electrical/Mechanical Engineering	
Cost Engineering	
Value Engineering	<u><i>This DQC role will be fulfilled by the District Value Engineering Officer.</i></u>
Geospatial Data Management	<u><i>This DQC role will be fulfilled by the District Geospatial Data Manager.</i></u>
Construction/Operations	

Real Estate	
Hazardous, Toxic and Radioactive Waste (HTRW)	

- **DQC Documentation.** Briefly **DESCRIBE** how DQC will be documented and what DQC documentation will be provided to the ATR team and SPD, with specific focus on any deviations from the parameters described in the PgRP.
- **Identification of Special Project Delivery Team Roles**
  - **Review Manager.** **IDENTIFY** who, at the district, will coordinate all review tasks and **DESCRIBE** his or her qualifications. The Review Manager should be a senior professional familiar with CAP, preferably with experience in conducting DQC and ATR. The manager should also have the necessary skills and experience to guide a virtual team through the review processes.

### 3. AGENCY TECHNICAL REVIEW (ATR)

- **Required ATR Team Expertise.** **IDENTIFY** the disciplines and expertise that should be represented on the ATR team. An ATR Team member may review multiple disciplines if the scope of the study and the level of effort warrant. The ATR Team Leader role can be assigned to any of the ATR team members. The ATR Team Leader should use the “ATR Lead Checklist” and “ATR Charge Template” developed by the National Planning Centers of Expertise as resources when conducting the review. The names, organizations, contact information, credentials, and years of experience of the ATR members should be included in Section 9. Planning and Engineering ATR team members should be ATR certified.

ATR Disciplines	Expertise Required <sup>1</sup>
<i>Pick from the disciplines listed below, delete any disciplines that are not applicable and add other disciplines as appropriate...</i>	<i>Add the expertise required for each discipline based on the specific needs of the study...</i>
ATR Lead	The ATR lead should be a senior professional preferably with experience in preparing CAP decision documents and conducting ATR. The lead should also have the necessary skills and experience to lead a virtual team through the ATR process. Typically, the ATR lead will also serve as a reviewer for a specific discipline (such as planning, economics, and environmental resources). The ATR lead can be from within SPD.
Planning	
Economics	
Environmental Resources	
Cultural Resources	
Hydrology	

<sup>1</sup> Planning and Engineering ATR team members should be ATR certified.

Hydraulic Engineering	<u>Example Description: The hydraulic engineering reviewer will be an expert in the field of hydraulics and have a thorough understanding of – insert specific requirements based on study objectives and proposed measures – for example, knowledge of open channel dynamics, enclosed channel systems, application of detention/retention basins, application of levees and flood walls, non-structural solutions involving flood warning systems and flood proofing, etc. and/or computer modeling techniques that will be used such as HEC-RAS, FLO-2D, UNET, TABS, etc.</u>
Coastal Engineering	
Geotechnical Engineering	
Civil Engineering	
Structural Engineering	
Electrical/Mechanical Engineering	
Cost Engineering	<u>Cost DX Staff or Cost DX Pre-Certified Professional with experience preparing cost estimates for....add the specific experience required (e.g., Harbors, levee projects, etc.)</u>
Construction/Operations	
Real Estate	
Hazardous, Toxic and Radioactive Waste (HTRW)	
Risk Analysis (Section 103 and 205 studies)	<u>The risk analysis reviewer will be experienced with performing and presenting risk analyses in accordance with ER 1105-2-101 and other related guidance, including familiarity with how information from the various disciplines involved in the analysis interact and affect the results.</u>

**4. INDEPENDENT EXTERNAL PEER REVIEW (IEPR)**

- **Decision on Type I IEPR.** **DESCRIBE** if Type I IEPR is applicable, per the discussion in Section 1.b. of the PgRP.
- **Required Type I IEPR Panel Expertise.** If Type I IEPR will not be conducted for this study, ‘**Not-Applicable**’ should be indicated; otherwise **IDENTIFY** the disciplines and expertise that should be represented on the Type I IEPR team.

<b>Type I IEPR Panel Disciplines</b>	<b>Expertise Required</b>
Economics (an economics panel member is required; the PDT may specify one or more specific economic disciplines to participate on the panel – e.g., Navigation	The specific experience/credentials required for the reviewer should be described here.

Economist and Agricultural Economist)	
Environmental (an environmental panel member is required; the PDT may specify one or more specific environmental disciplines to participate on the panel – e.g., NEPA Compliance Expert and Fisheries Biologist)	
Engineering (an engineering panel member is required; the PDT may specify one or more specific engineering disciplines to participate on the panel – e.g., Hydraulic Engineer and Geotechnical Engineer)	Example Description for a geotechnical engineering panel member: The geotechnical engineering reviewer should have an extensive experience in <inert specific requirements based on study objectives and proposed measures – for example, geotechnical evaluation of flood risk management structures such as static and dynamic slope stability evaluation, evaluation of the seepage through earthen embankments and underseepage through the foundation of the flood risk management structures, including dam and levee embankments, floodwalls, closure structures and other pertinent features, and in settlement evaluation of the structure.
Add additional IEPR panel members as needed (may include additional economic, environmental, or engineering disciplines or other disciplines such as real estate, planning, etc) <sup>2</sup>	

- **Anticipated Type II IEPR (Safety Assurance Review (SAR)). DESCRIBE** the Type II IEPR that is anticipated for the design and implementation phase.

## 5. PLANNING AND ENGINEERING MODELS

- **Planning Models. LIST** the planning models, including version number as appropriate, to be used, briefly describe each model and how it will be applied ON THIS STUDY, and indicate the approval status of each model. Include a justification for the use of any non-approved models. Planning models could include, but are not limited to: economic damage models (e.g., HEC-FDA, Beach FX, IMPLAN), environmental models for habitat evaluation or mitigation planning (e.g., IWR Plan, HEP HSI models, HGM), transportation or navigation models, and homegrown or spreadsheet models (e.g., excel spreadsheets, @Risk; see EC 1105-2-412 for more information about what constitutes a planning model). Below are some examples of the type of information that might be included in this section. Lesser

<sup>2</sup> Add the expertise required for each discipline based on the specific needs of the study

known models, including local/regional models, will need a more complete description than widely used, nationally recognized models.

The following planning models are anticipated to be used in the development of the decision document:

Model Name and Version	Brief Description of the Model and How It Will Be Applied in the Study	Approval Status	Peer Review Anticipated <sup>3</sup>
Example: Example: HEC-FDA 1.4.2 (Flood Damage Analysis)	The Hydrologic Engineering Center’s Flood Damage Reduction Analysis (HEC-FDA) program provides the capability for integrated hydrologic engineering and economic analysis for formulating and evaluating flood risk management plans using risk-based analysis methods. The program will be used to evaluate and compare the future without- and with-project plans along the Wild River near River City to aid in the selection of a recommended plan to manage flood risk.	Certified	N/A
Example: Study specific spreadsheet model	Add model description and how it will be applied...	N/A	Provide justification for using the model and describe peer review strategy.

- Engineering Models.** LIST the engineering models (including version number as appropriate) to be used, briefly describe each model and how it will be applied ON THIS STUDY, and indicate the approval status of each model. Include a justification for the use of any non-approved models. The approval status of many engineering models can be found on the Planning Community Toolbox at: <https://planning.erc.dren.mil/toolbox/library/Misc/PCXGuildATRReview090112.pdf>. Engineering models could include, but are not limited to: hydrologic, hydraulic, geotechnical, civil, structural, cost engineering and similar models. Below is an example of the type of information that might be included in this section. Lesser known models will need a more complete description than widely used, nationally recognized models.

The following engineering models are anticipated to be used in the development of the decision document:

Model Name and Version	Brief Description of the Model and How It Will Be Applied in the Study	Approval Status	Peer Review Anticipated <sup>4</sup>
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<sup>3</sup> All models require some peer review: DQC at a minimum, and ATR under certain circumstances. For models not already approved and certified, provide a peer review strategy, including a specific justification for use of the model. Model certification is not required under CAP.

<sup>4</sup> All models require some peer review: DQC at a minimum, and ATR under certain circumstances. For models not already approved and certified, provide a peer review strategy, including a specific justification for use of the model. Model certification is not required under CAP.

Example: HEC-RAS 4.0 (River Analysis System)	The Hydrologic Engineering Center’s River Analysis System (HEC-RAS) program provides the capability to perform one-dimensional steady and unsteady flow river hydraulics calculations. The program will be used for steady flow analysis to evaluate the future without- and with-project conditions along the Wild River and its tributaries. [For a particular study the model could be used for unsteady flow analysis or both steady and unsteady flow analysis. The review plan should indicate how the model will be used for a particular study.]	HH&C CoP Preferred Model	N/A
Example: Study specific spreadsheet model	Add model description and how it will be applied...	N/A	Provide justification for using the model and describe peer review strategy.

## 6. REVIEW SCHEDULES AND COSTS

- DQC Schedule and Cost.** **IDENTIFY** the estimated schedule and cost for DQC. An adequate schedule and cost estimate should be provided for DQC on draft and final decision documents, environmental compliance documents, planning and engineering models, SMART Planning tools, and supporting documents and analyses. **On average, a minimum of 4 weeks duration** for DQC with 2 weeks for comment submittal and another 2 weeks for response, backcheck and revisions should be anticipated. The duration can vary by products; for example, interim products may require less while draft and final decision documents may require more.
- ATR Schedule and Cost.** **IDENTIFY** the estimated schedule for ATR and provide an estimated cost for the ATR effort. Coordination with the RMO may be needed to complete this section. The ATR schedule and budget should include participation of the ATR Lead in the MSC Decision Milestone conference to address the ATR process and any significant and/or unresolved ATR concerns.

**NOTE:** For ATR, a minimum of 6 weeks duration for ATR of a complete draft decision document package is generally advised when developing study schedules: a minimum of 2 weeks for comment submittal and approximately 4 weeks total for response, backcheck, and report preparation. Actual durations are highly dependent on the quality and complexity of the document provided for ATR, which generally cannot be fully anticipated up front. A final report review can be more limited than a draft report review, depending on the changes between draft and final, but a minimum of 2 weeks for planning purposes is recommended. Interim reviews also can vary greatly, depending on the product.

- **Planning and Engineering Model Peer Review Schedule and Cost.** IDENTIFY the estimated schedule for peer review of Planning and Engineering models used, and provide an estimated cost for this effort. Coordination with the RMO may be needed to complete this section. *ATR on any planning or engineering models shall be completed prior to the MSC Decision Milestone.*
- **IEPR Schedule and Cost.** If Type I IEPR will not be conducted for this study, 'Not-Applicable' should be indicated; otherwise, IDENTIFY the estimated schedule for Type I IEPR and PROVIDE an estimated cost for the IEPR effort. Typical timelines are provided in the enclosed document below. *Any deviations from these timelines should include a robust rationale.*



Type I IEPR  
Timeline\_Sep 2017.dc

- **Type II IEPR (SAR) Schedule and Cost.** If SAR will not be conducted for this study, 'Not-Applicable' should be indicated; otherwise, IDENTIFY the estimated schedule for SAR and PROVIDE an estimated cost for the SAR effort. The District Engineering Technical lead will select the needed expertise of the SAR panel, but such panels typically include H&H, geotechnical, and general civil design expertise. Each study expertise should be evaluated on a case-by-case basis.

**7. PUBLIC PARTICIPATION**

DESCRIBE how and when there will be opportunities for public comment on the development of the decision document and how the final decision document and associated review reports will be made available to the public.

**8. REVIEW PLAN POINTS OF CONTACT**

Public questions and/or comments on this review plan can be directed to the following points of contact:

- Add title and phone number for the point of contact(s) at the home district

**9. TEAM ROSTER**

PROVIDE a roster and contact information for the PDT, DQC, ATR team, and MSC.

Discipline or Role	Team Member Name	Organization	Credentials, Years of Experience	Contact Information (email and phone)
<b>Project Delivery Team</b>				
<b>District Quality Control Team</b>				
<b>Agency Technical Review Team</b>				
<b>South Pacific Division</b>				
DST Lead				

Planning QA Lead				
<b>Review Management Organization (if not SPD)</b>				

**10. PROJECT FACTSHEET REVISIONS**

Revision Date	Description of Change	Page / Paragraph Number

**11. CURRENT APPROVED SPD CAP PgRP (ATTACH to the completed RP execution sheet)**

**12. DISTRICT CONCURRENCE**

- **ATTACH** a copy of the signed concurrence page of the project management plan. If this review plan execution sheet was not reviewed and approved as part of the PMP, then insert the following statement in this section and obtain signatures from the District Planning and Engineering Chiefs:

“We the undersigned concur in the review plan execution sheet, dated [insert date], for the [insert name of project].

\_\_\_\_\_  
[title of District Planning Chief]

\_\_\_\_\_  
date

\_\_\_\_\_  
[title of District Engineering Chief]

\_\_\_\_\_  
date

# SPD CAP Programmatic Review Plan

## ATTACHMENT 2

### Sample Statements of Completion and Certification of ATR for Decision Documents

#### COMPLETION OF AGENCY TECHNICAL REVIEW

The Agency Technical Review (ATR) has been completed for the <type of product> for <project name and location>. The ATR was conducted as defined in the project's Review Plan to comply with the requirements of EC 1165-2-217. During the ATR, compliance with established policy principles and procedures, utilizing justified and valid assumptions, was verified. This included review of: assumptions, methods, procedures, and material used in analyses, alternatives evaluated, the appropriateness of data used and level obtained, and reasonableness of the results, including whether the product meets the customer's needs consistent with law and existing US Army Corps of Engineers policy. The ATR also assessed the District Quality Control (DQC) documentation and made the determination that the DQC activities employed appear to be appropriate and effective. All comments resulting from the ATR have been resolved and the comments have been closed in DrChecks<sup>sm</sup>.

SIGNATURE

Name  
ATR Team Leader  
Office Symbol/Company

\_\_\_\_\_  
Date

SIGNATURE

Name  
Project Manager (home district)  
Office Symbol

\_\_\_\_\_  
Date

SIGNATURE

Name  
Architect Engineer Firm Project Manager<sup>1</sup>  
Company, location

\_\_\_\_\_  
Date

SIGNATURE

Name  
Review Management Office Representative  
Office Symbol

\_\_\_\_\_  
Date

#### CERTIFICATION OF AGENCY TECHNICAL REVIEW

Significant concerns and the explanation of the resolution are as follows: Describe the major technical concerns and their resolution.

As noted above, all concerns resulting from the ATR of the project have been fully resolved.

SIGNATURE

Name  
Chief, Engineering Division (home district)  
Office Symbol

\_\_\_\_\_  
Date

SIGNATURE

Name  
Chief, Planning Division (home district)  
Office Symbol

\_\_\_\_\_  
Date

<sup>1</sup> Only needed if some portion of the ATR was contracted