PROJECT MANAGEMENT PLAN

Potential Habitat Breaks (PHBs)
February 2021

PROJECT MANAGEMENT PLAN OVERVIEW

The Project Management Plan breaks down project work into logical steps to help provide a framework to efficiently allocate resources, reliably estimate project costs, and help guide schedule, budget development and project scope. Previously in the CMER Protocols and Standards manual (PSM), this document was titled an implementation plan. The Project Management Plan documents and tracks the progress of a CMER project through its various stages. The contents of the Project Management Plan will vary depending on the type and complexity of the project. The Project Team is the primary audience for the Project Management Plan; however, SAG/CMER members are encouraged to provide feedback on the plan.

OVERSIGHT COMMITTEE

Instream Science Advisory Group (ISAG)

BACKGROUND

In 2001, the Washington State Forest Practices Board (Board) approved a comprehensive set of new forest practice rules based on the Forest and Fish Report (FFR). One of the goals of these rules is to protect water quality, including aquatic life, in streams on non-federal forest lands in Washington State. In concurrence with the approval of the FFR, the Board adopted a Forest Practices Adaptive Management Program (AMP). The purpose of the Forest Practices AMP is to "provide science-based recommendations and technical information to assist the Board in determining if and when it is necessary or advisable to adjust rules and guidance for aquatic resources to achieve resource goals and objectives". To provide the science needed to support adaptive management, the Board established the CMER Committee which has been tasked with performing research in support of the AMP.

The Board is currently in the process of establishing a permanent water typing rule. Ultimately, the rule must be implementable, repeatable, and enforceable by practitioners and regulators involved in the water typing system. The Board is considering the use of a fish habitat assessment method (FHAM) that incorporates known fish use with potential habitat breaks (PHBs) to identify fish habitat. The Board recommended that PHBs be based on permanent physical channel characteristics such as, gradient, stream size, and/or the presence of natural non-deformable vertical and non-vertical obstacles as potential barriers to upstream fish movement.

In 2018, a Science Panel convened by the Board developed a study design to validate PHBs. The purpose of this study is to develop criteria for accurately identifying PHBs through

the evaluation of PHB criteria selected by the Washington Forest Practices Board (Board) for use in the fish habitat assessment methodology (FHAM) as part of a water typing rule.

The study design (Roni et al. 2019) was reviewed and approved by ISPR, however there were varying levels of comments and criticisms from all caucuses participating in the forest practices adaptive management program to particular aspects of the study design and the review process. In 2019, the Forest Practices Board remanded the project to the Department of Natural Resources' adaptive management science program. The Cooperative Monitoring, Evaluation and Research (CMER) committee was tasked with revising the study design following CMER's protocols and standards, referenced in AMP board manual (Section 22). CMER then tasked the Instream Science Advisory Group (ISAG) with revising the study design. The Project Team, a subgroup of ISAG members, is currently developing the study design.

All project phases may be impacted by Covid-19 restrictions, particularly in FY21-22. If restrictions continue into the implementation phase, the project will be re-evaluated to ensure that policies and guidelines can be followed, without compromising project outcomes and budget.

PROJECT MILESTONES AND TASKS/PROJECT DELIVERABLES

		Estimated Dates of Completion								
Project Milestones	**Responsible Party**	**FY21**	**FY22**	**FY23**	**FY24**	**FY25**	**FY26**	**FY27**	**FY28**	**FY29**
Study Development										
Charter - updated	ISAG subgroup	Mar-21								
Scoping & BAS Alternatives	ISAG subgroup	NA								
Study design - ISAG approved	ISAG subgroup		Jul-21							
Study design - CMER approved	ISAG subgroup		Nov-21							
Study design - ISPR approved	ISAG subgroup			May-22						
Site Selection and Data Management Document	ISAG subgroup			Apr-22						
Field Implementation										
RFQQ for field implementation	Project Manager			Jul-22						
Site Selection and Field Reconnaissance	ISAG Subgroup/ Contractor			Oct-23						

Data Collection	Contractor				Dec-26					
QA/QC	ISAG Subgroup/ Contractor				Jan-27					
Data Analysis and Reporting										
Data analysis	PI/Contractor				Mar-27					
Final Report - ISAG approved	PI/Contractor								Sep-27	
Final Report - CMER approved	PI/Contractor								Dec-27	
Final Report - ISPR approved	PI/Contractor								Jun-28	
6 Questions Document	Project Team									Sep-28
Board approval	ISAG Subgroup									Nov-28
Publication to DNR and CMER Websites	Project Manager									Dec-28
Written and verbal updates to the Board and CMER	Project Manager	As needed								

PROJECT TEAM MEMBERS

Name, Title, Affiliation, Contact Info	Roles and Responsibilities
Project Manager: • Eszter Munes eszter.munes@dnr.wa.gov	• Monitor project activities and the performance of the Project Team. • Communicates progress, problems, and problem resolution to the Adaptive Management Program Supervisory Project Manager and Administrator (AMPA), and CMER. • Work with ISAG/CMER, and Project Team to help develop Project Charters and Project Plans, and keep them updated as needed over time. • Work with ISAG, CMER, and Project Team (including PI, contractors, and other Team members) to resolve problems and build consensus. • Work with PI and Project Team members to develop interim and final reports. • Ensure communication between all team members is clear, concise, and consistent.

	• Maintain contact and process access agreements, once site access is granted. • Ensure coordination between ISAG/CMER, Project Team and landowners. • Coordinate all technical reviews and responses in a timely fashion. • Facilitate archiving of all data and documents. • Works with PI to manage documents on Microsoft Teams. • Work with the AMPA, ISAG/CMER, and Project Team to develop and review proposals, RFPs or RFQQs, review contractor proposals, monitor contract performance, and provide input on budgeting, schedule, scope changes, and contract amendments. • See that contract provisions are followed. • Provide direction and support to the Project Team to achieve clear and specific scopes of work, schedules, and budgets within approved contracts. • Communicate and/or authorize communication with all project-related contractors. • Maintains sole responsibility for all aspects of project management even if other individuals are completing or helping complete parts of the project.
Principal Investigator(s): *TBD*	• Attends ISAG and Project Team Meetings. • Oversees the technical aspects of the project including protocol development and refinement, site selection, data collection, analysis, and reporting. • Works with PM and field manager in overseeing data collection by field crew. • Oversees and conducts data analysis and QA/QC of data provided by field staff. • Leads in developing, writing, and preparation of the final report. • Lead author of findings report. • Responds to comments by reviewers of reports. • Prepares quarterly summary and progress reports of project status, as needed. • Presents technical findings to ISAG, CMER, TFW Policy, and the Board as necessary. • Communicates concerns or issues that arise with PM.

Project Team members: • Donald Nauer Donald.Nauer@dfw.wa.gov • Douglas Martin doug@martinenv.com • Christopher Mendoza cmendoza2@comcast.net • John Heimburg John.Heimburg@dfw.wa.gov • Jenelle Black jblack@nwifc.org • Cody Thomas cody.thomas@spokanetribe.com • Jason Walter Jason.Walter@weyerhaeuser.com	• Attends Project Team and ISAG meetings. • Provides expertise as necessary for successful completion of project. • Assists PI for addressing technical and scientific questions/issues. • Assists PI with communications, data analyses, and reporting, as needed. • Provides timely review and constructive feedback on project documents and the final report. • Participates in completing site selection. • May assist contractor and PI with training of field crews. • Helps implements QA/QC protocol.
Contracted Field Manager: *TBD*	• Works with PI to coordinate field activities. • Provides primary oversight of field crew schedules, logistics, and needs. • Works with PI to provide training to field crews. • Communicates implementation status, changes, and needs to PI and PM. • Provides expertise as necessary for successful completion of project. • Provides timely review and constructive feedback on project documents and the final report. • Participates in project meetings and conference calls, as needed.
Contracted Field Crew: *TBD*	• Collects and QA/QCs field data. • Responsible for field gear and equipment. • Transmits data to Field Manager and PI according to designated schedule. • Participates in project meetings and conference calls, as needed.
Contracted Technical Lead Staff: *TBD*	• In coordination with the PI, oversees and conducts QA/QC of data provided by field staff. • Conducts project data summaries and analyses. • Assists PI with reporting. Helps prepare interim and final reports. • Responds to comments by reviewers of reports. • Creates spatial and tabular databases for all project data. • Participates in project meetings and conference calls, as needed.

PROJECT CONSTRAINTS AND ASSUMPTIONS

Schedule constraints:

- The PHB project timeline may be influenced by scheduling and deliverable milestones of other ISAG/AMP projects.
- The PM will revisit the project timeline with the Project Team at least one time per month. Changes to the timeline will be made in consensus. The PM will communicate any changes to the timeline to AMP within one week.
- Extension of study design development and/or review periods within the current timeline developed by the PM may result in implementation delay from FY22 to FY23.
    - The Project Team only has partial influence on the ISPR review timeline, including the development of a comment matrix and making revisions to the document. An ISPR review process that exceeds six months may delay implementation from FY22 to FY23.
- Contracting should be initiated approximately three months in advance of anticipated contract start date for site selection.
- Equipment procurement and replacement must occur in a timely manner to prevent any delays in field work. Equipment should be available for crew field training.
- There are inter- and intra-annual constraints on site visits. Sampling must occur at a frequency and timing to be determined in the final study design.

Budget constraints:

- There is currently no Board-approved budget for the water typing projects, including PHBs. It may need to be secured through a one-time, supplemental legislative request by the DNR.
- The PHB study design phase does not have a budget.
    - Funding for a biometrician will require a request for AMP funds.
- The current project budget (below) is in-part, based on the assumptions from the Science Panel version of the study design. It will be refined on the basis of the ISAG study design and Site Selection and Data Management Document. The PM, in consultation with the Project Team, will create a detailed budget to ensure the requested funds accurately reflect project needs.
- Project expenditures will be constrained to the final legislature-approved, supplemental budget.
    - Expenditures above the project budget will require a request of additional funds.
- Ongoing covid-19 restrictions may result in added and/or unexpected expenditures, such as extra vehicle rental and personal protective equipment. These potential expenses are captured in the “on-going expenses and supplies” line item of the budget, which also includes other field consumables and equipment replacement costs.

Human resource constraints:

- The Project Team will develop the study design and other deliverables (primarily) using resources within AMP. Roles are defined in the Project Team table above.

    - Changes to the Project Team may impact project development, execution, and reporting.
- The Project Team may contract with a biometrician for the study design/and or final report.
- Contract support will be necessary for field implementation and reporting. Contract staff may include lead field staff, field technicians, as well as technical staff to assist with oversight, data analysis and reporting.
    - The PI, lead field staff, and possibly contracted technical leads, will provide oversight for field crew training and data collection effort, ensuring QA/QC protocols are followed.
- The PM will facilitate successful execution of contracts.

Resource constraints:

Technical, study site, and equipment/supply constraints will be most applicable to the implementation phase of the PHB study.

- Field crews will require rigorous training in field protocols and equipment, including e-fishing, data entry on tablets, stream measurements, and possibly, eDNA sampling.
- Equipment and supplies will need to be procured within budget constraints. Replacement of lost or damaged equipment must occur in a timely manner to avoid project delays.
- Sites will be screened according to criteria from the study design. Availability of these sites may be constrained by land ownership, landowner willingness, and accessibility by road, accessibility by season, and/or any changes in accessibility.

Project assumptions:

Project assumptions largely reflect schedule, budget, human resource, and resource constraints.

Assumption	Risk	Mitigation
The Science Panel version of the study design (in the absence of a scoping document) serves as a proxy for a scoping document.	1. Changes to scope without oversight committee approval violate PSM guidelines. 2. Changes to scope without adequate planning can adversely affect project outcomes.	1. Project Team will regularly revisit core objectives, timelines, and budgets to avoid "scope creep". 2. Necessary changes to scope will be identified as soon as possible. 3. Changes to scope will be brought to CMER and the Board for approval.
Milestones and deliverables will follow the project timeline.	Deviations may affect timelines and budgets of other AMP projects.	PM, in coordination with the Project Team, monitors timeline on a weekly basis and promptly communicate changes to SAG, CMER, and AMP.
Project Team members will reach consensus on deliverables.	Non-consensus will delay study implementation or lead	Project Team members will identify source of non-consensus

	to termination of project within the SAG.	and initiate dispute resolution per the PSM.
Project Team members will stay consistent throughout the project.	Project Team member turnover may result in inefficiencies to work flow. Loss of Project Team members increases workload for remaining members and may lead to delays.	1. Ensure Project Team time commitment is clear to all members. 2. Anticipate and communicate changes to Project Team in a timely manner.
The project will be developed with the full extent of expertise needed to complete all deliverables.	Knowledge gaps may produce deficiencies in the study design and reporting.	1. Identify necessary expertise. 2. Project Team may consult with someone within or outside of AMP who has appropriate expertise to bridge any knowledge gaps. 3. Report any assumptions and/or knowledge gaps in deliverables.
Supplemental budget can be secured to implement and complete the project.	Project cannot be completed without contractor support. Funding through the AMP budget will affect other projects.	1. Delay project until funding can be secured. 2. Look for internal/external funding and grant opportunities to decrease ask from legislature.
Expenses for field implementation will remain at or below the project budget.	Project may be delayed or compromised if budget gap cannot be filled.	1. Be proactive. See *Budget Constraints*. 2. Make additional funding requests in a timely manner.
Covid-19 restrictions will not impair data collection activities or add unexpected expenses to the budget.	Ongoing or changes to restrictions may complicate logistics, delay data collection, and/or increase project expenses.	1. See *Budget Constraints*. 2. Monitor covid-19 guidance and policy at multiple levels. Assess impact to workflow and budget.
There will be a sufficient number of sites available to meet minimum sample size requirements as defined in the study design.	If the minimum number of sites cannot be secured, the statistical power to detect an effect will be reduced.	1. Oversample during the site screening process. 2. If needed, revise and/or re-scope the project to accommodate a smaller sample size, if alignment with original questions and objectives is possible.
Access to sites will not change throughout the study.	Loss of access reduces amount of data collected for analysis.	1. Oversample during the site screening process. 2. Be prepared to use backup sites.
Field technicians will have sufficient skill to ensure consistent data collection among crews and years.	Inconsistent data collection will produce poor-quality data and compromise project.	1. Ensure crews are consistently and centrally-trained.

		2. Produce well-defined data collection protocols, forms, and checklists. 3. Ensure robust QA/QC procedures. Identify and rectify inconsistencies in field crews quickly.

A separate Risk Management Plan will not be developed unless one of these constraints or assumptions occurs or if one is deemed necessary. The process for developing a detailed Risk Management Plan is outlined in section 7.11 of the PSM. A Risk Management Plan identifies potential actions to avoid, reduce, and/or mitigate impacts to a project.

DECISION-MAKING AUTHORITY

The Forest Practice Board (Board) has approval authority over proposed CMER projects, annual work plans, and expenditures. The Board manages the Timber, Fish and Wildlife Policy Committee (Policy), the Cooperative Monitoring, Evaluation, and Research (CMER) Committee, and the Adaptive Management Program Administrator (AMPA) to assist with the Board's directives. Policy assists the Board by providing guidance to CMER and recommendations on adaptive management issues. CMER is responsible for understanding available scientific information that is applicable to the questions at hand, selecting the best and most relevant information and synthesizing it into reports for Policy and the Board. The AMPA coordinates the flow of information between Policy and CMER according to the Board's directives. Decision-making authority described in this section needs to be consistent with CMER process and ground rules per the Board Manual section 22.

For PHBs and other water typing projects, the role of Policy will be fulfilled by the Board. This deviation is reflected throughout this document, typically as a substitution of "the Board" for "TFW Policy". The substitution is notated if it's a part of standard PSM language.

Decisions related to science and/or technical items is the responsibility of the PIs and the Project Team. If needed, decisions for scientific and/or technical items could be expanded to include the SAG and CMER. Final documents will be prepared by the project team and then reviewed and approved by the SAG, CMER, Independent Scientific Peer Review (ISPR), and the Board. Although the PM will assist in the facilitation of the discussion and decision making process, the PM will not be directly involved in decisions related to science and/or technical items.

Decisions related to contractual (scope of work, RFQQ, contract process, contractor interaction, etc.) and budgetary items is the responsibility of the PM along with input from the Project Team. Requests for additional funding will be approved by the PM and Project Team and sent to the SAG and CMER for formal approval. Minor budgetary or contractual items will be handled directly by the PM with notification provided to the Project Team. Major budgetary or contractual items will be decided between the PM, Project Team, and AMPA. If needed, decision making for budgetary items may require CMER and/or Policy input and/or approval.

PROJECT RESOURCE NEEDS

The list of project resources is *preliminary and tentative*. It will be fully detailed in the Site Selection and Data Collection Document. The budget will be updated in the charter as resource needs are refined.

Project Resource	Purpose	Quantity
Global Positioning System Units	Navigation	TBD
Field laptops	Interact with scanner and data transfer	TBD
1 TB SSD's	Data storage and backup	TBD
Data collection tablets	Data collection and photos	TBD
Field files: maps, data forms, phone numbers, gear checklist	Navigation, access information, safety contacts	TBD
Consumables: logger tape, batteries, magic markers, tree tags or placards, rebar, flagging, hip chain string,	Data collection	TBD
Personal protective equipment	Data collection	TBD
Laser range finder	Data collection	TBD
Clinometer	Data collection	TBD
Hip chain	Data collection	TBD
Tape measure	Data collection	TBD
Stadia rod	Data collection	TBD
4 Port eDNA sampling unit and pump	Data collection	TBD
PX80 scanner and peripherals	Data collection	TBD

PROJECT BUDGET

The budget is *preliminary and tentative* and will be revised upon the completion of the study design. It is aligned with the timing of implementation and deliverables from table above. It contains funding for data analysis and reporting, which may add members to the Project Team. Any changes to the budget or Project Team will be reported in the charter and submitted for CMER and Board review and approval.

Budget/Cost Items	Expenditures FY17 - FY19	FY22	FY22	FY23	FY24	FY25	FY26	FY27	Project Total
Inter-Agency Agreements (IAAs)	**$0**	**$0**	**$175,400**	**$727,800**	**$902,300**	**$905,400**	**$366,200**	**$59,500**	**$3,136,600**
Field implementation (IE USGS) - Field Manual, Site Selection, and Reconnaissance	$0	$0	$175,400	$112,400	$0	$0	$0	$0	$287,800
Field implementation (IE USGS) - training, data coll. and mgmt.	$0	$0	$0	$615,400	$902,300	$902,300	$278,600	$0	$2,698,500
Field implementation (IE USGS/USFS) - eDNA sampling	$0	$0	$0	$0	$0	$3,100	$0	$0	$3,100
Reporting (IE USGS)	$0	$0	$0	$0	$0	$0	$87,600	$59,500	$147,100
Service Contracts (PSCs)	**$319,076**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$319,076**
Wild Fish Conservancy	$3,950	$0	$0	$0	$0	$0	$0	$0	$0
Cramer Fish Sciences (Pilot Study)	$124,497	$0	$0	$0	$0	$0	$0	$0	$0
Cramer Fish Sciences (Study Design)	$190,629	$0	$0	$0	$0	$0	$0	$0	$0
Project Team (PSC)	**$76,293**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$76,293**
Pete Bisson	$3,680	$0	$0	$0	$0	$0	$0	$0	$0
Jeff Kershner	$36,377	$0	$0	$0	$0	$0	$0	$0	$0
Patrick Trotter	$36,236	$0	$0	$0	$0	$0	$0	$0	$0
Supply and Expense (On-going)	**$0**	**$0**	**$0**	**$0**	**$27,600**	**$27,600**	**$27,600**	**$0**	**$82,800**

Science Technician Supplies (Small Supplies, Tools)	$0	$0	$0	$0	$27,600	$27,600	$27,600	$0	$82,700
Supply and Expense (One-time)	**$0**	**$0**	**$10,200**	**$183,600**	**$0**	**$20,400**	**$25,500**	**$0**	**$239,700**
eDNA analysis	$0	$0	$0	$0	$0	$0	$25,500	$0	$25,500
eDNA sampling equipment	$0	$0	$0	$0	$0	$20,400	$0	$0	$20,400
Data Collection devices/Equipment Manufacture/Equipment Purchase	$0	$0	$10,200	$183,600	$0	$0	$0	$0	$193,800
FY Total	**$395,369**	**$0**	**$185,600**	**$911,400**	**$929,900**	**$953,400**	**$419,300**	**$59,500**	**$3,854,469**

Project Total: $3,854,469

PROJECT SITES

Specific information about project sites and site selection is pending completion of the study design and Site Selection and Data Collection Plan. Preliminary site selection is scheduled for FY22-23, with field reconnaissance in FY23-24 (Spring – Fall 2023). Sites will be located throughout Washington State, and will require contract support for field reconnaissance and data collection.

COMPANION CMER DOCUMENTS

Companion documents were produced by the Board Designated Science Panel, outside of the CMER process. Therefore, documents are not necessarily CMER-approved or include all project documents as required by the PSM. The previous and current effort share many elements, and the documents are listed here to provide continuity. Project documents that have not been completed yet are listed in the *Milestones, Tasks, and Deliverables* table above.

Document	Completion Date (Act.* or Est.)
Science Panel Project Charter	4/5/2019*
Science Panel Final Study Design	3/20/2019*
Science Panel Field Manual (Site Selection and Data Collection Plan)	5/22/2019*
Science Panel Pilot Study Manuscript	7/8/2019*

*Actual dates.

PROJECT COMMUNICATION OVERVIEW

Transparent and accurate communication between the different adaptive management parties (Project Team/SAG/CMER/AMPA/Board[1]) is critical for the AMP to guide and oversee the work of the Project Team. This section provides a framework to manage and coordinate the communications needed for all phases of a project. If a separate Communication Plan is needed for a project, see section 7.6 of the PSM for detailed guidelines.

Two primary pathways exist for project communication to occur when working on CMER projects - 1) between the Project Team and project oversight committees (i.e. SAGs/CMER/Board), and 2) communication within the Project Team.

PROJECT OVERSIGHT COMMITTEE COMMUNICATION

This section covers communication between the Project Team and the project oversight committees (i.e. SAGs/CMER/Board[1]). Project oversight communication includes three categories of documents/communication: 1) Project management documents that enable oversight committees to understand how projects will be managed, 2) Project tracking and communication to enable the oversight committee(s) to track project progress and provide guidance and approvals to move projects forward, and 3) communication with contractors.

[1] Indicates change CMER Protocol and Standards Manual language change from "TFW Policy" to "Board"

1. **Project management documents**
   The PM is the lead author for the Project Charter, Project Management Plan, and other project management documents. If the Principal Investigator (PI) has been identified at the time of project launch, the PM will work with the PI to draft the Project Charter and Project Management Plan, in consultation with the oversight committee.

Project Management Documents*	Primary Author	Collaborators	Final Approval	Primary Audience
Project Charter	PM	PI and Project Team (if identified)	CMER and the Board[1]	Project Team, SAG, CMER, and Board[1]
Project Management Plan (including communication and risk sections)	PM	PI and Project Team	CMER	Project Team, SAG, and CMER
Document Management and Closure Plan	PM	PI	N/A	Project Team, SAG, and CMER

*For details regarding these documents, see PSM Section 7.6

2. **Project tracking and guidance documents**
   The PM is responsible for ensuring that all reporting tasks are complete and provided on schedule. When preparing progress reports, the PI is responsible for providing detailed and comprehensive costs, schedule, and project updates, in writing, to the PM consistent with prior written agreement. The PM, in turn, is responsible for summarizing project update information into progress reports, and presenting these progress reports to the overseeing SAG and to CMER per the project schedule or as requested by the SAG or by CMER. The PM may delegate preparation or presentation of progress reports to the PI or other Project Team members, with their consent.

Project Tracking/Guidance Documents*	Primary Author	Collaborators	Final Approval	Primary Audience
Project updates	PM	PI	N/A	Project Team, SAG, CMER, and Board[1]
CMER quarterly and annual project progress reports	PM	PI	N/A	SAG and CMER
CMER Requests	PM	Project Team	CMER	CMER
Board Requests/Check-ins	AMPA/Project Team	Project Team	CMER	Board[1]
Public Presentations	PI/PM	Project Team	N/A	Public

*For details regarding these documents, see PSM Section 7.6

[1] Indicates change CMER Protocol and Standards Manual language change from "TFW Policy" to "Board"

3. **Contractor Communications**
   In all cases, the PM is primarily responsible for facilitating open and transparent communication between contractor(s) and project oversight committee(s) members. Committee members should generally not directly communicate with the contractor(s) about substantive project elements outside of formally organized meetings, conference calls, or PM-facilitated group e-mail discussions, unless specifically authorized in pre-established contract terms, or approved in advance to do so by the PM. The PM may verbally grant authorization, and the rest of the Project Team and oversight committee members should be informed when this occurs. The PM is responsible for informing the contractor(s) of this policy as well.

INTRA-PROJECT TEAM COMMUNICATION

The PM provides assistance to Project Team members by coordinating communication (e.g. one-on-one and group meetings, conference calls, etc.) when needed as well as maintaining the e-mail distribution list for the Project Team. The PM also ensures that any communication resulting in a formal decision about the project occurs in a transparent and inclusive way.

The PI is responsible for preparing and writing technical reports for CMER. How the PI communicates and works with other Project Team members to produce these documents will vary based on the nature of the project and dynamics of the Project Team. The PI works together with the PM to coordinate communication with other team members as needed.

Communication by individual team members includes participation at meetings and conference calls, providing feedback on draft documents, researching specific topics/issues, taking the lead on writing report sections, and/or acting as co-author(s) of CMER documents. The expectation is that Project Team members, including PMs and PIs, who communicate outside of normal project meetings, conference calls, and other venues will share substantive, project-related conversations they have with the rest of the Project Team. For additional details regarding project team communication see PSM section 7.6.3.

Communication structure