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F27a & F28a

Addendum

April 12, 2016

TO: Coastal Commissioners and Interested Parties

FROM: Alison Dettmer, Deputy Director
Kate Huckelbridge, Senior Environmental Scientist

SUBJECT: Addendum to Staff Report for Application Nos. 9-15-0531, E-07-005-A2 and E-08-008-A2, Pacific Gas and Electric.

This addendum includes minor revisions and clarifications to the March 25, 2016 staff report on Pacific Gas and Electric's (PG&E) project to implement a final site restoration plan following decommissioning of Units 1, 2, and 3 at the Humboldt Bay Power Plant (HBPP). These revisions do not change staff's recommendation that the Commission approve the permit as conditioned.

REVISIONS TO FINDINGS: Staff recommends modifying the staff report as shown below in strikeout/underline:

Page 11, Special Condition 7, make the following changes:

7. Open Space Restriction. No development, as defined in Section 30106 of the Coastal Act, shall occur within the following areas: Charlie Road footprint (Area 1d), restored areas of the ISFSI Support Count Room Area ~~Stormwater Basin~~ (Area 2be), restored areas of the ISFSI Support Parking Lot (Area 2d), restored areas of Bayview Heights (area 3), Trailer City (Area 4a), Trailer City Stormwater Basin (Area 4b), restored areas of the HBPP Core Area (Area 6a) and the Waste Management Building (Area 6b), Alpha Road Overflow Parking Area (Areas 8d and 8e), Assembly Building Parking Lot (Area 9a), Assembly Building ~~Parking Area~~Stormwater Basin (Area ~~9b~~9c), Frog Pond (Area 9d), Frog Pond Detention Basin (Area 9de), Frog Pond Fringe (Area 9f), Buhne Point Wetlands Preserve (Area 10a), Buhne Preserve Fringe (Area 10b), Contractor Trail (Area 10c), CPL2 Laydown Area (Area 10d), MIT-7 (Area 11a), MIT-6 (Area 11b), MIT-1 (Area 11c), and CLP1 Northeast (Area 11d) except for: …

Page 12, Special Condition 9, make the following change:

9. Asbestos removal plan. NO LESS THAN 90 DAYS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES WITHIN THE ASBESTOS REMOVAL AREA~~PRIOR TO THE ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT,~~ the Permittee shall submit to the Executive Director for review and approval an Asbestos Removal Plan that describes protocols to be used to ensure that asbestos removal activities in the area adjacent to the Duck Pond do not adversely impact adjacent wetland areas…

Page 14, Special Condition 12, make the following change:

12. Traffic Control Plan. NO LESS THAN 90 DAYS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES ASSOCIATED WITH THE KING SALMON AVENUE SHOULDER WIDENING PROJECT~~PRIOR TO THE ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT~~, the Permittee shall submit to the Executive Director for review and approval a Traffic Control Plan for the King Salmon Avenue shoulder widening project component that incorporates the following elements:…

Page 18, 3rd paragraph, make the following changes:

…As part of the proposed project, PG&E will fill the Discharge Canal with up to ~~45~~55,000 cubic yards of clean soil from other locations onsite, recontour the surface to create a bluff slope up to Bayview Heights, and replant the area with coastal ~~sage~~ scrub.

Page 19, 4th paragraph, make the following change:

Once ACM removal and remediation activities are complete, the affected area will be restored to wetlands as part of the Shoreline Wetland Mitigation area. PG&E will grade the area to allow for connectivity between this area and the Shoreline Wetland Mitigation area and Duck Pond wetlands and then will replant the with native wetland and upland vegetation.

Page 19, 5th paragraph, make the following changes:

The HBPP Core Area includes the former power island areas for Units 1, 2 and 3 (Area 6a), and the existing Waste Management Building area (Area 6b) ~~and Frog Pond, a stormwater detention basin (Area 6c)~~… The Waste Management Building, currently a three-sided utility building, will be used during site restoration for soil remediation activities tied to the RAP and Final ~~Site~~ Status Survey.

Page 20, 3rd paragraph, make the following changes:

…The proposed project includes paving of the road as well as a minor re-alignment of the Alpha Road intersection with King Salmon Road to meet Humboldt County safety standards. PG&E will create a 90 degree intersection angle at the intersection and install a mechanically-stabilized earth ~~wire~~ wall on the Buhne Slough side to minimize impacts to adjacent wetlands. This project element will result in permanent impacts to 5 m2 of wetlands and temporary impacts to 140 m2 of wetlands. PG&E will also restore two small, open parking areas located along the south side of Alpha Road to coastal bluff scrub vegetation (Areas 8d and 8e). Finally, an existing culvert

under Alpha Road that connects an intermittent drainage ditch with Buhne Slough ~~will~~ may be replaced to allow drainage from the HBGS switchyard to bypass the drainage ditch and drain directly to Buhne Slough. If the Commission approves the proposed project, Alpha Road will be added to the HBGS fenced area and incorporated into the HBGS's CEC license.

Page 20, 4th paragraph, make the following change:

This 0.8 acre area currently consists of a parking lot, two temporary buildings, several storage containers and a former security kiosk. Under the proposed project, PG&E proposes to remove all structures and paved surfaces, grade the area to remove compacted fill, and recontour the area to connect to adjacent areas. Once grading is complete, soils will be prepared for planting and then planted with native upland grassland vegetation~~. A portion of the ISFSI stormwater basin will extend into this area~~.

Page 21, 1st paragraph, make the following change:

…An existing culvert connecting Frog Pond to the Intake Canal is no longer needed and will be removed. Frog Pond also includes an area of contamination ~~located in the right-of-way of the adjacent Bravo Road~~. PG&E proposes to remove the contamination in conjunction with these activities.

Page 21, 3rd paragraph, make the following change:

…As part of the proposed project, PG&E will replace a culvert that connects the Preserve to the Intake Canal. An adjustable weir control structure ~~will~~ may be installed to protect against excessive flooding and to better manage the balance of fresh and saltwater in the Preserve.

Page 22, 1st paragraph, make the following change:

…MIT-1 (~0.43 acres) is allocated for mitigation of impacts associated with HBGS construction impacts (approved under ~~E-08-003 and~~ CEC Condition BIO-12), and MIT-6 (~0.24 acres) is allocated for mitigation of impacts associated with the Canal Remediation Project (approved under CDP 9-13-0621)…

Page 23, 4th paragraph, make the following changes:

California Energy Commission (CEC)
The CEC will consider an amendment to the ~~HBPP~~ Humboldt Bay Generating Station (HBGS) license to incorporate new areas and facilities into the ~~Humboldt Bay Generating Station (~~HBGS~~)~~ licensed area. PG&E's amendment application, submitted to the CEC in May of 2015, is pending Commission action on the proposed project.

Page 24, 1st paragraph, make the following change:

…License termination is expected to be completed in 2019/2020 following completion of Final ~~Site~~ Status Surveys (FSS) in 2018/2019.

Page 30, 2nd paragraph, make the following changes:

In the long-term, the proposed project will result in the restoration of more than 14 acres of new habitat on the HBPP site. The restored and mitigation areas will connect existing natural areas to form two large, contiguous areas of high-quality wetlands and native vegetation. This will improve habitat quality and availability for northern red-legged frogs, sea-watch and other special-status species. Wildlife-friendly fencing will be installed ~~around the perimeter of the site and~~ around some of the restored areas to allow wildlife entry. This fencing will be designed to allow larger animals such as deer, to pass through the fence to reach another area of the site, but to keep PG&E personnel and visitors out of the newly created habitat. The conceptual fencing plan is included in Exhibit 8 and is described in detail in the Conceptual Fencing Plan (included as Appendix ~~B~~C).

Page 30, 4th paragraph, make the following change:

To minimize indirect impacts to surrounding wetland areas associated with the road realignment, a mechanically stabilized earth ~~wire~~ wall will be installed on the Buhne Slough side of the road to protect the adjacent wetlands from erosion and stormwater impacts from the construction of the road realignment.

Page 35, 2nd paragraph, make the following change:

The goals, objectives success criteria and monitoring methods for each mitigation area are fully described in PG&E's Mitigation and Monitoring Plan for the HBPP Final Site Restoration Project (included as Appendix ~~A~~B)…

Page 37, 2nd paragraph, make the following changes:

Table 6 provides a summary for each area and subarea of the restoration acreage requirements for wetland and non-wetland areas and how the proposed FSR plan addresses those requirements. While some areas, such as Trailer City, provide an excess of restored area, other areas, such as the ISFSI and ISFSI support area fall short of the requirements imposed by the Commission under previous permits. When taken as a whole, the FSR plan will result in a total of ~~9.13~~10.62 acres of restored non-wetland area and ~~3.98~~4.95 acres of restored wetland area. These acreages are a total of ~~4.14~~3.70 acres short of non-wetland restored area requirements, and 0.~~38~~21 acres short of restored wetland acreage requirements. PG&E claims that based on existing and future needs for the HBGS and the ISFSI, there is no additional acreage on the HBPP site that can feasibly be restored to make up for this shortfall.

Page 37, 3rd paragraph, make the following change:

The goals, objectives success criteria and monitoring methods for each mitigation area are fully described in PG&E's Mitigation and Monitoring Plan for the HBPP Final Site Restoration Project (included as Appendix ~~A~~B).

Page 37, 4th paragraph, make the following change:

To address the shortfalls identified on the previous page, PG&E proposes to mitigate the loss of ~~4.14~~3.70 acres of non-wetland and 0.~~38~~21 acres of wetland restored areas on the HBPP site by relocating an existing 6-inch natural gas line (line L 126A), and decommissioning an existing 4-inch gas line (Line L 126B) (collectively called the gas line project)…

Page 38, 3rd paragraph, make the following changes:

If successful, the Commission finds that implementation of the gas line project in support of the Martin Slough Enhancement Project will provide adequate mitigation for the loss of ~~4.14~~3.70 acres of restored non-wetland area and 0.~~38~~21 acres of restored wetland area caused by the proposed project. This gas line project will, in combination with the overall restoration project proposed here, therefore satisfy previous CDP requirements that PG&E restore areas of the HBPP site. As stated above, the first priority was to identify areas for restoration on the HBPP site. The Commission staff worked extensively with PG&E throughout the permit review process to identify additional areas of the site that could be restored. As part of this process, PG&E proposed to restore areas, including the Assembly Building and Parking Area and the Buhne Preserve Fringe Area that were not included in previous permits and were not originally slated for restoration. PG&E also provided the justification and need for retaining the HBPP Core Area, Waste Management Building, the Count Room and Alpha Road for use by the HBGS or the ISFSI (see Appendix ~~D~~E). Based on the information submitted, the Commission concurs that the areas PG&E proposes to retain for use by the HBGS and the ISFSI are necessary, and that there is no additional acreage onsite that is available for restoration.

Page 39, 1st paragraph, make the following changes:

…Furthermore, the gas line project would facilitate the restoration of approximately 12.5 acres of tidal and brackish marsh and pond areas, as mitigation for ~~4.14~~3.70 acres of upland habitat and 0.~~38~~21 acres of wetland habitat, which, if habitat types are combined would represent more ~~a little less~~ than a 3:1 mitigation ratio. For the reasons stated above, implementation of the gas line project in support of the Martin Slough Enhancement Project provides adequate mitigation for the loss of 4.14 acres of upland habitat and 0.38 acres of wetland habitat at the HBPP site.

Page 45, 3rd paragraph, make the following change:

Unlike previous PG&E projects at the HBPP site, the primary purpose of the proposed project is to remove existing development and either restore the underlying landscape to a natural state, or repurpose the area for use by the HBGS and the ISFSI…

Page 141-145, Table 4, make the following changes:

Table 4: Project impacts on wetlands, proposed mitigation ratios, and proposed mitigation locations.

Location, habitat type, and duration	Impact	Actual/Anticipated impact timing	Affected area (ac)	Proposed mitigation ratio	Affected area times ratio (ac)	Mitigation location (Figure 5)	Anticipated mitigation timing	Restoration, creation, or enhancement action
NO CHANGES TO FIRST 7 ROWS OF TABLE								
Intake Canal USACE and CCC jurisdictional wetlands (temporary)	Culvert replacement and Bridge footing removal	2019	0.018	1:1	0.018	Intake Canal~~Buhne Point Wetlands Preserve~~	2019	Restore impacted areas and enhance existing wetlands by removing invasive species and replanting with native species
Intake Canal Waters of the U.S. (temporary)	Culvert replacement and Bridge footing removal	2019	0.018	1:1	0.018	Intake Canal~~Buhne Point Wetlands Preserve~~	2019	Restore impacted areas and enhance existing wetlands by removing invasive species and replanting with native species
Frog Pond Stormwater detention basin USACE and CCC jurisdictional wetlands (permanent)	Grade existing stormwater detention basin; creating ISFSI entrance road	2018	0.295	2:1	0.590	Shoreline Wetland	2018	Create additional wetlands ~~as part of the enhanced stormwater detention basin~~in the wetland mitigation area

Location, habitat type, and duration	Impact	Actual/Anticipated impact timing	Affected area (ac)	Proposed mitigation ratio	Affected area times ratio (ac)	Mitigation location (Figure 5)	Anticipated mitigation timing	Restoration, creation, or enhancement action
King Salmon Avenue CCC jurisdictional wetlands (temporary)	creation of adjacent mitigation area	2021	0.040	1:1	0.040	King Salmon Avenue~~/Mit 7~~	2021	Restore impacted areas and enhance existing wetlands by removing invasive species and connecting to mitigation wetlands
King Salmon Avenue Waters of the U.S. (temporary)	creation of adjacent mitigation area	2021	0.023	1:1	0.023	King Salmon Avenue~~/Mit 7~~	2021	Restore impacted areas and enhance existing waters by removing invasive species and connecting to mitigation wetlands
Duck Pond USACE and CCC jurisdictional wetlands (temporary)	creation of adjacent mitigation area	2021	0.1	1:1	0.1	Duck Pond	2021	
Trailer City drainage ditch Waters of the U.S. (temporary)	creation of ~~stormwater detention basin and~~ wetland mitigation area	2020	0.016	1:1	0.016	Trailer City drainage ditch/ Shoreline Wetland	2020	Restore impacted areas and enhance existing drainage ditch by removing invasive species and replanting with native species

Location, habitat type, and duration	Impact	Actual/Anticipated impact timing	Affected area (ac)	Proposed mitigation ratio	Affected area times ratio (ac)	Mitigation location (Figure 5)	Anticipated mitigation timing	Restoration, creation, or enhancement action
Trailer City drainage ditch Waters of the U.S. (permanent)	creation of stormwater detention basin ~~and wetland mitigation area~~	2020	0.023	2:1	0.046	Shoreline Wetland	2020	Create additional wetlands in the~~as part of the enhanced stormwater detention basin and~~ wetland mitigation area
ISFSI Support office parking area - CCW-F historic wetland	temporary impact made permanent—keeping Portal Road and parking area	2010	0.001	4:1	0.004	Mit-7	2021	Create additional wetlands as part of the enhanced wetland mitigation area
King Salmon Avenue, Alpha Road, Duck Pond, Intake Canal, Buhne Point Wetlands Preserve and Trailer City drainage ditch ~~Frog Pond Stormwater detention basin~~ waters and wetlands (temporary impacts and temporal loss)	temporary impacts	2018–2021	0.351	2.8:1	1.01	Buhne Point Preserve Fringe	2018	Enhance the Buhne Point Preserve Fringe area by removing non-native species and replanting with native vegetation

Page 148-149, Table 6, replace the entirety of Table 6 with the version included below:

Table 6: Restored Area Acreage Required and Proposed

HBPP Area and Subareas	CDP No.	HBPP Area and Subarea Acreage Total	Acreage Identified for Restoration Under a Decommissioning CDP		Acreage Proposed to be Restored		Total Wetland Restoration requirement (includes add'l mitigation)	Net Acres Owed	
			upland	wetland	upland	wetland		upland	wetland
1-Buhne Pt.									
1d-Charlie Road	E-08-003/ E-08-003-A1/ E-09-005	0.31	0	0.31	0	0.31	0.31	0	0
	E-09-005	0.088	0	0.088	0	0.088	0.088	0	0
2-ISFISI and ISFSI Support Area									
2a ISFSI	E-05-001/ E-09-005	2.89	0.531	0.026	0.274	0.001	0.104	0.257	0.103
2b ISFSI Support - Count Room	E-09-005-A1	0.29	0.29	0	0.091	0	0	0.199	0
2c ISFSI Entrance Road	n/a	0.28	0	0	0	0	0	0	0
2d ISFSI Support Parking Lot/ Contractor Lot No. #2	E-08-003-A1	0.59	0.56	0.03	0.118	0	0.12	0.442	0.12
2e-HBPP Warehouse/Workshop/ Office	E-09-010	0.93	0	0	0.129	0	0	-0.129	0
3 -Bayview Heights									

3-Bayview Heights[1]	E-08-008/ E -08-008-A1 E-09-005/ E-09-010	6.86	6.169	0.011	5.888	0	0.274	0.281	0.274
4-Trailer City									
4a-Trailer City Main	E-07-005/ E-09-010	4.33	0.926	1.85	1.143	2.92	2.05	-0.217	-0.87
5-Duck Pond									
5 - Duck Pond[2]	n/a	6.62	0	0	0.346	0	0	-0.346	0
6-HBPP Core									
6a HBPP Core Area (Former Units 1,2,3 area)	E-09-010	2.764	2.764	0	0.319	0	0	2.445	0
6b Waste Management Building	E-09-010	0.742	0.742	0	0.033	0	0	0.709	0
8-Intake Canal									
8c,d,e-Alpha Road/Alpha Rd Overflow Parking	E-09-010	1.07	0.79	0.28	0.11	0	1.12	0.68	1.12
9-Assembly Building Area									
9a - Assembly Building Parking Lot	n/a	0.83	0	0	0.83	0	0	-0.83	0
9b - Bravo Rd	n/a	0.47	0	0	0	0	0	0	0
9c - Assembly Building Detention Basin	n/a	0.27	0	0	0.27	0	0	-0.27	0
9d - Frog Pond[1]	n/a	0.25	0	0	0.195	0.057	0.59	-0.195	0.533
9e - Frog Pond Pretreatment and Detention Basin	E-090-010	0.32	0.32	0	0.0855	0	0	0.2345	0
9f - Frog Pond fringe	E-090-010	0.83	0.648	0	0.787	0	0	-0.139	0

10-Buhne Pt. Preserve									
10c-Contractor Pedestrian Trail	E-09-010	0.48	0	0.48	0	0.48	0.48	0	0
10d - CPL2 Laydown Yard	E-08-003-A1	0.59	0.582	0.008	0	0.548	0.032	0.582	-0.516
11 - Contractor Parking Lot #1									
11c - MIT-7	n/a	0.38	0	0	0	0.38	0	0	-0.38
11d - Contractor Parking Lot #1 NE	n/a	0.17	0	0	0	0.17	0	0	-0.17
TOTAL		**32.354**	**14.322**	**3.083**	**10.6185**	**4.954**	**5.168**	**3.7035**	**0.214**

Notes:

1. Total Wetland Restoration Requirement includes mitigation requirement for wetlands impacted as part of the proposed project.
2. Includes upland area to be restored as part of remediation of Asbestos Containing Area (ACM)

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Filed:	3/11/16
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Staff:	K.Huckelbridge-SF
Staff Report:	3/25/16
Hearing Date:	4/15/16

COMBINED STAFF REPORT: REGULAR CALENDAR & PERMIT AMENDMENT

Application No.:	**9-15-0531, E-07-005-A2 & E-08-008-A2**
Applicant:	**Pacific Gas and Electric Company**
Location:	Humboldt Bay Power Plant, 1000 King Salmon Ave., Eureka, Humboldt County.
Project Description:	Implementation of a final site restoration plan following decommissioning of Units 1, 2, and 3 at the Humboldt Bay Power Plant.
Staff Recommendation:	Approval with conditions.

SUMMARY OF STAFF RECOMMENDATION

PG&E proposes to restore and repurpose the HBPP site, a 74.9-acre property located on the shores of Humboldt Bay in Eureka, Humboldt County, after the decommissioning of power generating Units 1, 2, and 3 (see Exhibit 1 and 2). The proposed project, called the Final Site Restoration (FSR) Plan, describes the proposed post-decommissioning land use for the entire site and includes site restoration in some areas and infrastructure modification to support the adjacent Humboldt Bay Generating Station (HBGS) in other areas (see Table 2 and Exhibits 3 and 4).

The key Coastal Act issues raised by this project are potential impacts to biological and marine resources and hazards. The proposed project includes the removal of structures, excavation and grading activities and the restoration of upland and wetland areas, all of which have the potential to result in impacts to biologically significant species, including special status species, wetlands and marine habitats. To address these impacts, **Special Condition 1** requires that PG&E submit a Stormwater Management Plan to minimize impacts to wetlands and other habitat areas from stormwater runoff. **Special Conditions 2 and 3** require that PG&E employ a biologist to determine if special status species are present and to recommend avoidance measures if necessary and to implement protective measures needed to ensure project activities do not cause adverse effects on species and habitats.

When taken as a whole, the FSR plan will result in a total of 9.13 acres of restored non-wetland area and 3.98 acres of restored wetland area. These acreages are a total of 4.14 acres short of non-wetland restored area requirements, and 0.38 acres short of restored wetland acreage requirements imposed by previous CDPs. PG&E proposes to mitigate for these losses through the implementation of a gas line protection, relocation, and decommissioning project that is a critical component of a larger restoration project to restore approximately 9 acres of wetlands and 3.5 acres of brackish water habitat in nearby Martin Slough. The Commission finds that, if successful, the implementation of both the FSR plan and the Martin Slough gas line project will fulfill the site restoration and development removal requirements included in previous CDPs. To ensure that restoration and mitigation are successful**, Special Condition 6** requires PG&E to implement the gas line project in substantial conformance with the MOA included in Exhibit 15, **Special Condition 7** places an open space restriction on the proposed restored areas, and **Special Condition 8** places a deed restriction on the property advising future owners of the restrictions included in this permit. With these conditions in place, the Commission finds the proposed project consistent with Sections 30230, 30231, 30233, and 30240 of the Coastal Act.

The HBPP site is subject to several geologic hazards, including seismic activity, coastal erosion, tsunamis, and tsunami runup. The proposed project includes removal of temporary structures and restoration of several areas onsite, both of which will reduce the potential risks associated with the geologic hazards. However, newly permanent structures that will remain onsite could be exposed to geologic hazards, resulting in damage or destruction of these structures or create the need for a future shoreline protective device to protect them. To address these concerns, **Special Condition 10** requires that PG&E acknowledges the nature of the hazards which exist on the site, assume liability for these risks, and remove structures at risk. **Special Condition 11** requires that PG&E waive the right to build a future shoreline protective device to protect new development authorized by this CDP. Thus, as conditioned, the Commission finds the proposed project consistent with Coastal Act Section 30253.

Commission staff recommends **approval** of coastal development permit application 9-15-0531, as conditioned.

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EXHIBITS

Exhibit 5 – Asbestos-Containing Area (ACM) Removal Work Area
Exhibit 6 – King Salmon Avenue Shoulder Widening Project Area and Work Phases
Exhibit 7 – 2015 Survey of the Special Status Plant Species on the HBPP site
Exhibit 8 – HBPP Final Site Restoration Conceptual Fencing Plan
Exhibit 9 – Jurisdictional Wetland Delineation
Exhibit 10 – Temporary Impacts Associated with Replacing the Culvert between the Buhne Wetlands Preserve and the Intake Canal
Exhibit 11 – Temporary Impacts Associated with Removing the Pedestrian Bridge and the Culvert between Frog Pond and the Intake Canal
Exhibit 12 – Photographs of the Buhne Point Preserve Culvert
Exhibit 13 – Photographs of the Pedestrian Bridge
Exhibit 14 – Photographs of the Frog Pond Culvert
Exhibit 15 – DRAFT MOA for the Gas Line Relocation/Abandonment
Exhibit 16 – Map of Areas Where Concentrations in Soil Exceed Final Cleanup Goals
Exhibit 17 – Predicted Sea Level Rise Inundation at the HBPP Site

I. MOTION AND RESOLUTION

Motion:

*I move that the Commission **approve** Coastal Development Permit Amendment E-07-005-A2 as set forth in the staff recommendation.*

Staff recommends a **YES** vote on the foregoing motion. Passage of this motion will result in conditional approval of the permit amendment and adoption of the following resolution and findings. The motion passes only by affirmative vote of a majority of the Commissioners present.

Resolution:

The Commission hereby approves Coastal Development Permit Amendment E-07-005-A2 and adopts the findings set forth below on grounds that the development as amended and conditioned will be in conformity with the policies of Chapter 3 of the Coastal Act. Approval of the permit amendment complies with the California Environmental Quality Act because either 1) feasible mitigation measures and/or alternatives have been incorporated to substantially lessen any significant adverse effects of the development on the environment, or 2) there are no further feasible mitigation measures or alternatives that would substantially lessen any significant adverse impacts of the development on the environment.

All of the special conditions of coastal development permit E-07-005 continue to apply to the development approved by that permit, with the exception that Special Condition 1 is deleted in its entirety and is replaced by the following:

Site Restoration: PG&E shall implement removal of the approved development and restoration of the site in accordance with the conditions and requirements of coastal development permit 9-15-0531.

Motion:

*I move that the Commission **approve** Coastal Development Permit Amendment E-08-008-A2 as set forth in the staff recommendation.*

Staff recommends a **YES** vote on the foregoing motion. Passage of this motion will result in conditional approval of the permit amendment and adoption of the following resolution and findings. The motion passes only by affirmative vote of a majority of the Commissioners present.

Resolution:

The Commission hereby approves Coastal Development Permit Amendment E-08-008-A2 and adopts the findings set forth below on grounds that the development as amended and conditioned will be in conformity with the policies of Chapter 3 of the Coastal Act. Approval of the permit amendment complies with the California Environmental Quality Act because either 1) feasible mitigation measures and/or alternatives have been incorporated to substantially lessen any significant adverse effects of the development on the environment, or 2) there are no further feasible mitigation measures or alternatives that would substantially lessen any significant adverse impacts of the development on the environment.

All of the special conditions of coastal development permit E-08-008 continue to apply to the development approved by that permit, with the exception that Special Condition 2 is deleted in its entirety and is replaced by the following:

Site Restoration: PG&E shall implement removal of the approved development and restoration of the site in accordance with the conditions and requirements of coastal development permit 9-15-0531.

Motion:

*I move that the Commission **approve** Coastal Development Permit 9-15-0531 subject to the conditions set forth in the staff recommendation.*

Staff recommends a **YES** vote on the foregoing motion. Passage of this motion will result in conditional approval of the permit and adoption of the following resolution and findings. The motion passes only by affirmative vote of a majority of the Commissioners present.

Resolution:

The Commission hereby approves Coastal Development Permit 9-15-0531 and adopts the findings set forth below on grounds that the development as conditioned will be in conformity with the policies of Chapter 3 of the Coastal Act. Approval of the permit complies with the California Environmental Quality Act because either 1) feasible mitigation measures and/or alternatives have been incorporated to substantially lessen any significant adverse effects of the development on the environment, or 2) there are no further feasible mitigation measures or alternatives that would substantially lessen any significant adverse impacts of the development on the environment.

II. STANDARD CONDITIONS

This permit is granted subject to the following standard conditions:

1. **Notice of Receipt and Acknowledgment**. The permit is not valid and development shall not commence until a copy of the permit, signed by the permittee or authorized agent,

acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.

2. **Expiration.** If development has not commenced, the permit will expire two years from the date on which the Commission voted on the application. Development shall be pursued in a diligent manner and completed in a reasonable period of time. Application for extension of the permit must be made prior to the expiration date.

3. **Interpretation.** Any questions of intent of interpretation of any condition will be resolved by the Executive Director or the Commission.

4. **Assignment.** The permit may be assigned to any qualified person, provided assignee files with the Commission an affidavit accepting all terms and conditions of the permit.

5. **Terms and Conditions Run with the Land.** These terms and conditions shall be perpetual, and it is the intention of the Commission and the permittee to bind all future owners and possessors of the subject property to the terms and conditions.

III. SPECIAL CONDITIONS

This permit is granted subject to the following special conditions:

1. Stormwater Management Plan: PRIOR TO ANY PROJECT-RELATED GRADING OR FILLING, the Permittee shall provide for the Executive Director's review and approval a Stormwater Management Plan that describes all structural and non-structural measures the Permittee will implement to avoid and minimize stormwater-related impacts to habitat areas including wetlands, coastal waters and natural upland areas during construction activities. The Permittee shall implement the Plan as approved by the Executive Director.

The Plan shall include locations of all facilities and structures to be built during the project and the measures incorporated in each to avoid and minimize stormwater-related impacts. The Plan shall also identify measures the Permittee will implement to store and/or contain materials, soils, and debris originating from the project in a manner that precludes their uncontrolled entry and dispersion into nearby coastal waters, wetlands or habitat areas. Any debris that inadvertently enters coastal waters or wetlands shall be removed immediately.

The Plan will identify Best Management Practices (BMPs) that will be implemented during project activities to protect wetlands, coastal waters and upland habitats in conformance with the following:

a. Peak runoff rates and average volumes shall not exceed conditions.
b. Appropriate structural and non-structural BMPs shall be designed to treat, infiltrate, or filter the runoff from all surfaces and activities on the development site.
c. Structural BMPs (or suites of BMPs) shall be designed to treat, infiltrate or filter the amount of stormwater runoff produced by all storms up to and including the 85th percentile, 24-hour storm event for volume-based BMPs, and/or the 85th percentile, 1-hour storm event, with an appropriate safety factor (i.e., 2 or greater), for flow-based BMPs.

d. Runoff from all structures and parking areas shall be collected and directed through a system of structural BMPs of vegetated areas and/or gravel filter strips or other vegetated or media filter devices. The filter elements shall be designed to 1) trap sediment, particulates and other solids and 2) remove or mitigate contaminants through infiltration and/or biological uptake. The drainage system shall also be designed to convey and discharge runoff in excess of this standard from the building site in a non-erosive manner.
e. The Plan shall provide for the treatment of runoff from parking lots using appropriate structural and non-structural BMPs designed specifically to minimize vehicular contaminants (oil, grease, automotive fluids, and heavy metals), sediments, and floatables and particulate debris.
f. All BMPs shall be operated, monitored, and maintained for the duration of project activities requiring the use of the BMPs. At a minimum, all structural BMPs shall be inspected, cleaned-out, and where necessary, repaired at least twice per month between October 15 and April 15 of each year and at least once per month between April 15 and October 15 of each year.
g. The Plan shall identify a worker training program to be implemented that will identify coastal waters, wetlands, and their associated biological resources on and near the project site, identify measures to be taken to avoid impacts to these resources, and identify the role and responsibilities of the Biologist as described in Special Condition 2 below.
h. The Plan shall include measures for reporting any events where BMPs did not prevent adverse impacts to wetlands or coastal waters and the measures taken in response to these events.

Prior to implementing any new or modified project developments, facility locations, or BMPs not included in the initial Plan, the Permittee shall submit for Executive Director review and approval proposed modifications needed to incorporate these project components into the Plan.

2. Pre-construction Biological Surveys. NO MORE THAN 30 DAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION AT A PARTICULAR AREA OR SUBAREA, a qualified biologist approved by the Executive Director shall conduct pre-construction surveys for special-status plant and wildlife species and nesting birds protected under the Migratory Bird Treaty Act and California Fish and Wildlife Code section 3503 and to document the boundaries of existing wetlands and other sensitive habitat areas identified by the biologist. Surveys shall be phased to correspond to phased construction activities at different areas within the site. Pre-construction surveys for special-status species shall target northern red-legged frog, sea-watch, lyngbye's sedge, and Point Reyes Bird's-beak. Appropriate survey methods and timeframes shall be established by the consulting qualified biologist. Results of all surveys including graphics showing the locations of wetlands and sensitive habitat areas, any nests detected, all avoidance measures implemented for special-status species, and a list of any additional recommended mitigation measures and/or monitoring protocols shall be submitted to the Executive Director for review and approval prior to commencement of construction activities at a particular area or subarea. The Permittee shall implement the monitor's recommendations unless the Executive Director finds that implementation of the monitor's recommendations is not necessary to protect sensitive species.

a. If sea-watch, or any other special-status plant species is documented in areas that will be directly impacted by project activities, the Permittee shall avoid impacts to individual

plants to the maximum extent practical. If avoidance is not feasible, individual plants shall be transplanted and relocated to an appropriate site (as determined by the qualified biologist) within the project area. The plants shall be located as close as possible to their original location and in the same orientation. If relocation is not feasible or if transplanted individuals are unsuccessful, seeds shall be collected and used in restoration efforts following construction of the project. If relocation is necessary, the Permittee shall develop a plan describing the timing and location for relocation as well as monitoring protocols and success criteria for review and approval by the Executive Director and in consultation with the U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW), and any other appropriate government agency.

b. If other listed species are encountered, the Permittee shall consult with the U.S. Fish and Wildlife Service (USFWS), the California Department of Fish and Wildlife (CDFW) and the Executive Director before continuing with work.

3. **Biological Monitoring**. The Permittee shall employ or have under contract a Biologist(s) approved by the Executive Director, during the duration of the approved project. The Permittee shall ensure that the Biologists(s) conduct the following during any project activities involving mobilization, ground disturbance, grading, soil movement, or any other activities that could affect biological resources including special-status species, wetlands, coastal waters and marine species:
   a. Implement Best Management Practices as described in Section 5 of the Mitigation Monitoring Plan for the HBPP Final Site Restoration Project to ensure impacts to special-status species, wetlands, and coastal waters are minimized.
   b. Implement the Stormwater Management Plan measures (described in Special Condition 1) to avoid or minimize impacts to coastal waters, wetlands, and biological resources, including but not limited to:
      i. Prior to installing BMPs, clearly mark sensitive biological resources on and near the site of planned project activities.
      ii. Conduct monitoring at and near active construction areas pursuant to the schedule identified in the approved Stormwater Management Plan to ensure BMPS are functioning in a manner that prevents and minimizes adverse impacts.
      iii. Provide reports as required by the approved Stormwater Management Plan regarding any failure of BMPs and the measures taken to correct those failures.
      iv. Conduct worker training as required by the approved Stormwater Management Plan to identify the location and types of sensitive biological resources on and near the project site and the measures to be taken to avoid impacts to these resources.
   b. The Biologist(s) shall require a halt to any project activities when he or she determines that continuing the activities would result in an unauthorized adverse impact to coastal waters, wetlands, and other biological resources. The Biologist(s) shall inform the Permittee what measures are needed to address the impact and may allow activities to resume after necessary measures are implemented.
   c. A summary report, including monitoring results, avoidance measures implemented, and any deviations from permit requirements shall be submitted to the Executive Director within 30 days of project completion.

d. If biological monitoring results indicate fill or dredging or any other adverse impacts to any wetland areas that are not included in the project description, the Permittee shall amend this permit to address these impacts and fully restore any disturbed wetlands to its pre-project condition, unless the Executive Director determines that no such permit amendment is needed.

4. **Revisions to the Mitigation and Monitoring Plan for the HBPP Final Site Restoration Project**. PRIOR TO THE ISSUANCE OF THIS CDP, the Permittee shall submit a revised Mitigation and Monitoring Plan for the HBPP Final Site Restoration Project to the Executive Director for review and approval. The Revised Plan shall incorporate a minimum five year monitoring period and include a framework for remediation should a restoration or mitigation area(s) not meet the approved success criteria within the five year period. The remediation framework shall include a requirement that the Permittee submit a remediation plan to the Executive Director that recommends further action and provides a timeline for additional monitoring and reporting. In reviewing the remediation plan and results of post-remediation monitoring, the Executive Director will determine whether an amendment to this CDP is warranted.

   The Permittee shall implement the Plan as approved by the Executive Director.

5. **Eelgrass Mitigation and Monitoring Plan**. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the Applicant shall prepare an Eelgrass Mitigation and Monitoring Plan (EMMP) in consultation with a qualified biologist and submit two copies to the Executive Director for review and approval. This EEMP shall be consistent with the most current California Eelgrass Mitigation Policy (CEMP) adopted by the National Marine Fisheries Service Southwest Region, including but not limited to its requirements and directions to mitigate any impacts to eelgrass by at least a 1.2:1 ratio. The EMMP shall, at a minimum, provide methodologies and implementation sites for the following:
   a. Pre-construction Eelgrass Survey. A pre-construction eelgrass (Zostera marina) survey shall be completed consistent with the most current California Eelgrass Mitigation Policy (CEMP) adopted by the National Marine Fisheries Service Southwest Region, and shall be prepared in consultation with relevant regulatory agencies. The survey shall be completed during the active growth period for eelgrass (May through September in this region) and shall be considered valid for a period of 60 days. However, if the end of the 60-day validity period falls outside of the active growth period, the survey may be considered valid until the beginning of the next active growth period. The survey shall include the areas impacted by construction with an appropriate buffer, along with an appropriate reference site, as described in the CEMP. The Permittee shall submit the eelgrass survey for the review and approval of the Executive Director within thirty (30) days of completion of the survey and in any event no later than fifteen (15) business days prior to commencement of any development.
   b. Post-Construction Eelgrass Survey. If any eelgrass is identified in the project area by the survey required in subsection A of this condition above, within one month after the conclusion of construction, or within the first 30 days of the next active growth period following completion of construction that occurs outside of the active growth period, the Permittee shall survey the same areas included in the pre-construction survey, including

the project site and the reference site, to determine if any eelgrass was adversely impacted. The survey shall be prepared in full compliance with the most current CEMP adopted by the National Marine Fisheries Service Southwest Region, and shall be prepared in consultation with relevant regulatory agencies. The Permittee shall submit the post-construction eelgrass survey for the review and approval of the Executive Director within thirty (30) days after completion of the survey. In accordance with the CEMP, adverse impacts to eelgrass shall be measured as the difference between the preconstruction and post-construction estimates of eelgrass cover and density, using an appropriate reference site to isolate the effects of development from natural variability of eelgrass beds.

c. Mitigation and Monitoring. If any eelgrass has been impacted, the Permittee shall replace the impacted eelgrass at a minimum 1.2:1 ratio on-site, or at another location identified in the EMMP, in accordance with the CEMP. The exceptions to the required 1.2:1mitigation ratio found within CEMP shall not apply. Mitigation shall commence within 90 days following completion of the in-water construction resulting in impact to the eelgrass bed. A monitoring schedule that indicates when each of the monitoring events will be completed shall be included in the EMMP. Monitoring reports shall be provided to the Executive Director within 30 days after the completion of each monitoring period. Reporting shall continue on an annual basis for at least five years, or until all such eelgrass beds are supporting eelgrass as documented in two consecutive annual reports, whichever is later.

6. **Mitigation for Lost Upland and Wetland Restored Areas**. Within 3 years of permit issuance, the Permittee shall implement the gas line project in support of the Martin Slough Enhancement Project in substantial accordance with the draft MOA on Gas Line Relocation/Abandonment between PG&E and the Redwood Community Action Agency, included as Exhibit 15 . Upon completion of the project, the Permittee shall notify the Executive Director. If the gas line project is not completed within three years, the Permittee shall submit an application for an amendment to this CDP describing how it will meet its obligation to provide mitigation for the losses to wetland and non-wetland restored areas. The requirement to implement the gas line project within three years can be extended by the Executive Director for good cause.

7. **Open Space Restriction**. No development, as defined in Section 30106 of the Coastal Act, shall occur within the following areas: Charlie Road footprint (Area 1d), ISFSI Support Stormwater Basin (Area 2e), restored areas of Bayview Heights (area 3), Trailer City (Area 4a), Trailer City Stormwater Basin (Area 4b), Alpha Road Overflow Parking Area (Areas 8d and 8e), Assembly Building (Area 9a), Assembly Building Parking Area (Area 9b), Buhne Point Wetlands Preserve (Area 10a), Buhne Preserve Fringe (Area 10b), MIT-7 (Area 11a), MIT-6 (Area 11b) MIT-1 (Area 11c), except for:

   d. Vegetation management activities required to maintain line of site for the ISFSI, including mowing and/or weed whacking of grassland areas (applies only to Bayview Heights, Assembly Building Parking Lot, and areas surrounding the Waste Management Building).
   e. Invasive plant removal.
   f. Tree pruning and management.

g. Trail clearing around the Shoreline Trail.
h. Fence maintenance and repair activities.
i. Clearing of vegetation in and around stormwater basins and stormwater basin access roads to maintain access to these areas and to maintain the long-term stormwater control function of these facilities.
j. Monitoring and remediation activities required under **Special Condition 4** or other CCC permit condition including clearing of vegetation to maintain access to sampling points.
k. If the spent fuel casks are removed from the ISFSI, a level area (approx. 0.31 acres) next to Bayview Drive in the Bayview Heights area may be paved to create a larger turnaround to accommodate removal of the casks.

PRIOR TO ISSUANCE BY THE EXECUTIVE DIRECTOR OF THE NOTICE OF INTENT (NOI) FOR THIS PERMIT, THE PERMITTEE shall submit for review and approval of the Executive Director, and upon such approval, for attachment as an Exhibit to the NOI, a formal legal description and graphic depiction, prepared by a licensed surveyor, of the portion of the subject property affected by this conditions, as generally described above and shown on Exhibit 4 attached to this staff report.

8. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit to the Executive Director for review and approval documentation demonstrating that the applicant has executed and recorded against the parcel(s) governed by this permit a deed restriction, in a form and content acceptable to the Executive Director: (1) indicating that, pursuant to this permit, the California Coastal Commission has authorized development on the subject property, subject to terms and conditions that restrict the use and enjoyment of that property; and (2) imposing the Special Conditions of this permit as covenants, conditions and restrictions on the use and enjoyment of the Property. The deed restriction shall include a legal description of the entire parcel or parcels governed by this permit. The deed restriction shall also indicate that, in the event of an extinguishment or termination of the deed restriction for any reason, the terms and conditions of this permit shall continue to restrict the use and enjoyment of the subject property so long as either this permit or the development it authorizes, or any part, modification, or amendment thereof, remains in existence on or with respect to the subject property.

9. Asbestos removal plan. PRIOR TO THE ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the Permittee shall submit to the Executive Director for review and approval an Asbestos Removal Plan that describes protocols to be used to ensure that asbestos removal activities in the area adjacent to the Duck Pond do not adversely impact adjacent wetland areas. Specifically, the plan should include the following:
a. A detailed description of the vertical and lateral extent and the total quantity of the asbestos containing material (ACM).
b. A description of training, containment, clean up, and disposal protocols for the removal of ACM.
c. A list of measures designed to protect adjacent wetlands from impacts associated with ACM removal, including but not limited to:
    i. Best management practices for erosion and stormwater control.

ii. Installation of highly visible construction fencing to prevent encroachment into wetland areas. If the repair work is carried out during the winter months, the bottom of the fencing shall be raised to allow for the migration of California red-legged frogs through the project area, where applicable.

10. Coastal Hazard Risk. By acceptance of this coastal development permit, the Permittee acknowledges and agrees, on behalf of itself and all successors and assigns:

a. Coastal Hazards: That the site is subject to coastal hazards including but not limited to the potential for significant ground shaking, surface fault rupture and slope instability, liquefaction, tsuanami and tsunami runup, coastal erosion and bluff retreat, and the interaction of same;
b. Assume Risks: To assume the risks to the Permittee and the property that is the subject of this permit of injury and damage from such coastal hazards in connection with this permitted development;
c. Waive Liability: To unconditionally waive any claim of damage or liability against the Commission, its officers, agents, and employees for injury or damage from such coastal hazards;
d. Indemnification: To indemnify and hold harmless the Coastal Commission, its officers, agents, and employees with respect to the Commission's approval of the project against any and all liability, claims, demands, damages, costs (including costs and fees incurred in defense of such claims), expenses, and amounts paid in settlement arising from any injury or damage due to such coastal hazards;
e. Permit Intent: The intent of this permit is to allow for the approved development, consistent with the terms and conditions of this permit, for only as long as it remains safe for occupancy and use without additional substantive measures beyond ordinary repair and/or maintenance to protect it from coastal hazards, and for only as long as the approved development remains on private property;
f. Disclosure: All documents related to any future marketing and sale of the subject property, including but not limited to marketing materials, sales contracts, deeds, and similar documents shall notify buyers of the terms and conditions of this Coastal Development Permit; and
g. Property Owner Responsible: That any adverse effects to property caused by the permitted project shall be fully the responsibility of the property owner.

11. No Future Shoreline Protective Device for Remaining Structures

a. By acceptance of the permit, the Permittee agrees, on behalf of itself and all successors and assignees, that no new shoreline protective devices(s) shall ever be constructed to protect the development approved pursuant to this coastal development permit, including, but not limited to, the Waste Management Building (to be repurposed for use as a warehouse by the HBGS), the Count Room (to be repurposed as ISFSI office space), Alpha Road and other roadways and accessways onsite, and other future improvements in the event that the development is threatened with damage or destruction from waves, erosion, storm conditions, liquefaction, sea level rise, or any other coastal hazards in the future. By acceptance of this permit, the Permittee hereby waives, on behalf of itself and all successors and assigns, any rights to construct such devices for the purpose of

protecting the development approved pursuant to this coastal development permit that may exist under Public Resources Code 30235.

b. By acceptance of this permit, the Permittee further agrees, on behalf of itself and all successors and assigns, that the Permittee shall remove the development authorized by this permit including, but not limited to, the Waste Management Building (to be repurposed for use as a warehouse by the HBGS), the Count Room (to be repurposed as ISFSI office space), Alpha Road and other roadways and accessways onsite, if any government agency has ordered that the structures are not to be occupied due to any of the hazards identified above, or if the State Lands Commission requires the structures to be removed in the event that they encroach on to State tidelands. In the event that portions of the development encroach on public land before they are removed, the Permittee shall remove all recoverable debris associated with the development from these areas and lawfully dispose of the material in an approved disposal site. Such removal shall require a coastal development permit.

12. Traffic Control Plan. PRIOR TO THE ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the Permittee shall submit to the Executive Director for review and approval a Traffic Control Plan for the King Salmon Avenue shoulder widening project component that incorporates the following elements:

a. Timing and use of advanced warning signs, flaggers, delineators and crash cushions to facilitate traffic flow during working hours.
b. Timing and implementation of one-way traffic signals if needed.
c. A requirement that the roadway be stabilized at the end of each work day.
d. A final construction timeline that takes into consideration the timing and volume of personnel and truck trips to the HBPP site for other project-related activities and describes how impacts to the public will be minimized during construction of this project component.

13. Archeological Resource Protection Plan. PRIOR TO THE ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the Permittee shall submit a revised Archeological Resources Protection Plan (originally submitted in April 2010 under CDP E-09-010) to the Executive Director for review and approval that incorporates the following elements:

a. Expanded scope that incorporates all project areas included under the proposed project.
b. Incorporates a discussion of areas within the site that may have a higher likelihood to contain cultural resources and any additional procedures that may be necessary to ensure that potential resources in these areas are protected.
c. Includes a requirement to submit a final report describing monitoring results to the Executive Director at the conclusion of all monitoring activities.

IV. FINDINGS AND DECLARATIONS

A. PROJECT BACKGROUND

The Humboldt Bay Power Plant (HBPP) consists of two steam generating units (Units 1 and 2) and one boiling water nuclear reactor (Unit 3). Units 1 and 2 began operation in 1956 and 1958,

respectively, and ceased operation in 2010. Unit 3 began operation in 1963 and was shut down in 1976. In 2010, the HBGS, located adjacent to the HBPP on the same property, began operation to replace the former generating capacity of Units 1, 2 and 3. The Commission has issued several permits authorizing activities associated with decommissioning and removing Units 1, 2 and 3 and associated infrastructure, including construction of temporary facilities. Most of these permits contain permit conditions or language that addresses final restoration of the site. Table 1 provides a list of these permits, a summary of the development approved under each permit and any permit language that is applicable to the Final Site Restoration (FSR) plan.

Several of these permits included conditions requiring PG&E to prepare a final site restoration plan for the site once decommissioning activities are completed. Specifically, permits E-09-005, E-09-010 and E-09-010-A3 each included a condition requiring PG&E to submit a complete coastal development permit application describing proposed measures to restore the areas affected by the development activities approved pursuant to that permit. Additionally, two permits, E-07-005 and E-08-008, required that PG&E submit a request for an amendment that proposes removal of development associated with the project and restoration of those areas affected directly and indirectly by the project. The following section describes PG&E's proposed final restoration plan for the Humboldt Bay Power Plant site.

B. PROJECT DESCRIPTION

PG&E proposes to restore and repurpose the HBPP site, a 74.9-acre property located on the shores of Humboldt Bay in Eureka, Humboldt County, after the decommissioning of power generating Units 1, 2, and 3 (see Exhibit 1 and 2). Decommissioning activities have been ongoing for several years and were approved under six permits issued by the Commission between 2007 and 2014 (see Section A for additional details). The proposed project, called the FSR Plan, describes the proposed post-decommissioning land use for the entire site and includes site restoration in some areas and infrastructure modification to support the adjacent Humboldt Bay Generating Station (HBGS) in other areas. Table 2 provides a summary of the proposed final land use for each of twelve functional areas within the HBPP site. Exhibit 3 shows a site map that denotes the location of each area. Exhibit 4 shows the proposed final site restoration plan. A detailed description of the restoration and reuse plans for each area and sub-area are included below.

PG&E expects construction of the FSR Plan components will take approximately one year, beginning in the first quarter of 2018 and ending in December of 2018. Staging and laydown areas are likely to be assigned for various project elements as listed in Table 3 The final selection of laydown areas used for each project component will be made by the construction contractor and will be somewhat dependent on the final sequencing of construction activities. An area will only be used for laydown and staging if restoration activities for that area have not yet commenced. PG&E expects that a maximum workforce of approximately 150 people onsite daily will be needed to implement the proposed project. Construction is not proposed for nighttime hours. In the event that schedule or operational issues necessitate nighttime construction, PG&E will consult with the Humboldt Bay Harbor, Recreation and Conservation District (HBHRCD) and ensure that applicable County noise standards are met. PG&E anticipates needing 2 excavators, 12 dump trucks (10 cubic yard capacity), 3 front end loaders, 2

dozers, 3 compactors, 2 backhoes and 1 flatbed truck to complete the work. In addition, routine equipment such as waste hauling trucks, forklifts, man lifts, and portable generators will be used to support project activities. PG&E estimates needing a maximum of 10 material haul trips per day for a total of 80 days to haul materials to the site and haul waste offsite.

The following discussion provides area-specific restoration details:

Area 1: Buhne Point

Buhne Point located at the northwest tip of the site, is the highest point on the property. Most of the area consists of the shoreline trail (Area 1c), open vista area (Area 1a) and a Humboldt County designated tsunami assembly/refuge area for the residents of King Salmon and Fields Landing (Area 1b). Although previous permits have approved development in this area, no additional work is proposed for these areas under this permit.

Also included in the Buhne Point area is Charlie Road (Area 1d), a former dirt road and wetland area, that was paved and used as an access road during decommissioning. CDP E-08-003 authorized improvements to Charlie Road and included a condition that the road be restored to pre-project conditions. In compliance with this condition, the proposed project will restore Charlie Road to its pre-project condition (see Exhibit 4). Specifically, PG&E will remove the road surface and regrade the road to remove compacted fill. The area will then be recontoured to connect it to surrounding areas. Existing or clean fill will be used to achieve desired elevations. Any clean fill removed from the roadbed will be reused onsite or will be disposed off-site at an appropriate facility. Once grading is complete, the surface will be ripped and conditioned as needed to create suitable planting conditions. PG&E will then plant the area with a mix of native trees, shrubs and herbaceous species to match the surrounding coastal prairie and riparian scrub/forest ecotones.

Area 2 – ISFSI and ISFSI Support Area

The Independent Spent Fuel Storage Installation (ISFSI)(Area 2a) is a secure storage vault for the Unit 3 spent fuel and other high-level radiological waste. This facility, authorized by the Commission under CDP E-05-001, is secured, fenced and guarded by PG&E ISFSI Support personnel. No work is proposed for the ISFSI itself. The construction of Portal Road, which connects Charlie Road to Bay View Drive (see Exhibit 2) was authorized under CDP E-09-005. The permit authorized the road as a temporary feature and required that it be restored to pre-project conditions after decommissioning was completed. Under PGE&E's proposed amendment to CDP E-09-005, Portal Road will be retained, although the road footprint will be reduced in locations where the road is wider than necessary for vehicle access.

The existing Count Room building will be converted into office space for the ISFSI Support staff (Area 2b). This may require some internal construction to accommodate remodeling, but the footprint of the building and the foundation will remain the same. Adjacent to the Count room is the Contractor Parking Lot #2. PG&E proposes to retain this area as parking for ISFSI Support staff (Area 2d) and to restore the western portion to pre-project conditions, which consists primarily of riparian scrub habitat (Area 10d). Similar to Charlie Road, CDP E-08-003

authorized the construction of the Count Room and the Contractor Parking Lot #2 and required that PG&E restore the area to pre-project condition after decommissioning. Thus, as part of the FSR, PG&E proposes to repurpose the eastern portion of Contractor Parking Lot #2 as described above and to provide an equivalent amount of restored area elsewhere on the site (see Section E for additional details).

A new road, called the ISFSI entrance road (Area 2c), will be constructed to provide a secure entrance to the ISFSI and ISFSI Support Office. This road will connect Bravo Road to the ISFSI Support Office and parking area. Construction of this road will take place in conjunction with the remediation of contamination associated with the former Liquid Fuel Tank #2 (see Section F for additional details). Areas surrounding the facilities described above will be restored to managed native grasses and a small area of coastal scrub adjacent to a portion of Portal Road.

The HBPP warehouse and workshop, office and security buildings (Area 2f) will be retained for use by ISFSI Support staff for offices, training exercises, and other security program activities. The building footprints and foundations will remain the same, although PG&E may undertake minor remodeling of these buildings as part of the proposed project.

Area 3 – Bayview Heights

Located on Buhne Point hill to the east and south of the ISFSI, Bayview Heights currently includes open space area, buildings associated with Unit 3 decommissioning, an open storage area used for decommissioning laydown and construction trailers that provide office space for decommissioning staff. As part of the proposed project, PG&E plans to demolish the existing buildings, remove building foundations, and remove construction trailers and laydown area infrastructure and restore the majority of the area to coastal prairie and coastal scrub. The western terminus of Bayview Drive will be expanded to include a new turnaround area for trucks making deliveries to the ISFSI. At some point in the future when a public repository for the spent fuel casks becomes available, a portion of the coastal prairie immediately south of the east-west section of Bayview Drive would be paved to expand the existing turnaround and facilitate the removal of the spent fuel casks from the site.

In addition, the FSR includes cleanup of two potentially contaminated areas in Bayview Heights. In the northeast corner of Bayview Heights, PG&E created a storage area for soil excavated from other parts of the HBPP. In addition, a volume of soil with known elevated lead concentrations is present beneath the soil storage area. To address these areas, PG&E will conduct a soil investigation to determine if radiological and/or non-radiological contamination exists. Both contaminated areas will then be excavated and removed from the area. Contaminated soil will be disposed of offsite at an appropriate location, and soil that is uncontaminated and meets reuse criteria may be reused onsite. Cleanup of these areas is also addressed in a Feasibility Study/Remedial Action Plan (FS/RAP), a working draft of which was approved by the Department of Toxic Substances Control (DTSC) (see Section F for further discussion).

Once structures and contaminated areas are removed, PG&E will grade the area to remove compact fill and prepare the area for replanting. Clean soil from excavation projects at other parts of the site may be used to fill voids and smooth steep contours. Slopes in the Bayview

Heights area are designed to be no more than 4:1 (horizontal: vertical). However, in the event that PG&E excavates a significantly greater volume of spoils than expected from the HBPP core area, slopes greater than 4:1 may be necessary. Under this scenario, PG&E may install a bank stabilization feature to provide overall stability to the hillside. Once grading is completed, PG&E will plant the area with native coastal prairie and coastal bluff scrub vegetation that allow for a secure line of sight for the ISFSI (i.e., less than 1 meter tall).

The proposed project also includes the final restoration of the Discharge Canal, located at the eastern end of Bayview Heights. CDP 9-13-0621 authorized the remediation of intake and discharge canals including the excavation of approximately 10,000 cubic yards of soil. As part of the proposed project, PG&E will fill the Discharge Canal with up to 45,000 cubic yards of clean soil from other locations onsite, recontour the surface to create a bluff slope up to Bayview Heights, and replant the area with coastal sage scrub.

Area 4 – Trailer City

Located in the northeast portion of the site, Trailer City was a former marsh area that has been used for staging and other decommissioning activities. The proposed project entails restoring the Trailer City area into a 3.61 acre wetland area to be called the Shoreline Mitigation Wetland area (Area 4a). First, PG&E will remove all structures and infrastructure, including several utilities (i.e., sanitary sewer piping, sewer lift station, water lines and communication lines). This includes the undergrounding and relocating of a 12kV power line that provides power to the Independent Spent Fuel Storage Installation (ISFSI) as well as structures used in decommissioning. Final Site Survey procedures for the termination of the NRC license dictate that the site will then be excavated to pre-development grades, which will involve the removal of approximately 30,000 cubic yards of soil. As in other areas of the site, the excavated soil will be tested for contamination and then, depending on the testing result, either reused onsite or removed from site and disposed of at an appropriate facility. The area will then be backfilled to a range of elevations conducive to wetland vegetation as described in the Biological Mitigation and Monitoring Plan for the Humboldt Bay Power Plant Final Site Restoration Project (see Exhibit 4 and Appendix A for the full text of the plan). The site will also be recontoured to facilitate a hydraulic connection with an existing adjacent wetland called the Duck Pond. Finally, once final grading is complete, PG&E will plant the area with native wetland plants. The northern edge of the restoration area will be planted with trees and shrubs to screen the HBGS from Humboldt Bay and the Shoreline Trail, as required as part of the CEC licensing process. PG&E will monitor and maintain the restoration site until wetland performance criteria have been met.

The west side of Area 4a contains a location with an elevated lead concentration that has been identified as a potential soil removal area in the draft FS/RAP. PG&E will conduct further characterization of the site to confirm the presence of lead and to further define the volume of soil to be removed. PG&E will remediate this contamination in conjunction with final grading of the area.

A portion of a small existing drainage canal on the southern edge of Trailer City will be converted into a 0.57 acre stormwater basin to collect runoff from Bayview Heights and the

HBPP core area (Area 4b). As required by the Regional Water Quality Control Board (RWQCB), a maintenance and access road will also be installed around the basin. PG&E will install a pre-treatment basin beneath a road adjacent to the stormwater basin to collect the first flush of stormwater, allowing sediment and some contaminants to settle out before the water is moved into the stormwater basin, and eventually into the wetland area.

Asbestos Containing Material removal

An area with buried asbestos containing material (ACM) is located on PG&E property between Trailer City and the Duck Pond wetland (see Exhibit 5). The exact extent of the buried ACM is unknown, although borings conducted in 2015 indicate that the ACM is located within a 0.19 acre area that is currently overgrown with upland vegetation. An additional survey will be conducted in 2016 to confirm the lateral extent of the ACM. The proposed project includes removal of the ACM and restoration of the overlying area by a certified asbestos contractor. Depending on the condition of the asbestos panels, air monitoring and other health and safety measures may be necessary.

Once ACM removal and remediation activities are complete, the affected area will be restored to wetlands as part of the Shoreline Wetland Mitigation area. PG&E will grade the area to allow for connectivity between this area and the Shoreline Wetland Mitigation area and Duck Pond wetlands and then will replant the with native wetland vegetation. This newly created wetland will be incorporated into the Shoreline Mitigation Wetland area for the purposes of future monitoring and maintenance.

Area 6 – HBPP Core Area

The HBPP Core Area includes the former power island areas for Units 1, 2 and 3 (Area 6a), the existing Waste Management Building area (Area 6b) and Frog Pond, a stormwater detention basin (Area 6c). In Area 6a, any remaining structures, including portions of a circulating water pipeline, will be removed; then the area will be leveled and surfaced with gravel to create a flat, open area to be used for open storage, parking and other utility uses for the HBGS. The final elevation of the site will depend on the amount of soil available from onsite excavations. Approximately 0.057 acres on the eastern edge of the core area will be restored to coastal scrub and coastal prairie. A paved roadway with a maximum width of 20 feet will be added through the graveled area to provide paved access for large trucks to the Waste Management Building (Area 6b). The Waste Management Building, currently a three-sided utility building, will be used during site restoration for soil remediation activities tied to the RAP and Final Site Survey. Following completion of these activities, PG&E proposes to enclose the building (i.e., building a fourth wall) for use as a warehouse by the HBGS. A portion of the adjacent parking area will be maintained, but the remaining parking lot and the land surrounding the Waste Management Building will be restored to upland shrubs and native grasses.

After Commission approval of the proposed project, the entire HBPP Core area (i.e., all of Area 6) will be added to the HBGS fenced area and incorporated in the HBGS's CEC license.

Area 8 – Intake Canal Area

Most of the work PG&E will undertake in this area has been previously approved under the Canal Remediation Project (CDP 9-13-0621). However, the proposed project includes a few elements in this area. A 105-foot-long by 10-foot-wide steel pedestrian bridge that crosses over the canal, connecting the Assembly Building area (Area 9a) with western end of the Alpha Road parking lot (Area 8b), will be removed, including the foundations. In addition, PG&E proposes to make Alpha Road (Area 8c), originally proposed under CDP E-09-010 as a temporary road, a permanent feature. Alpha Road is needed to allow heavy loads to enter the site that cannot cross the King Salmon Avenue Bridge and enter the site via Bravo Road, because the bridge is not rated for heavy loads. In addition, Alpha Road will serve as the primary ingress and egress to the HBGS. The proposed project includes paving of the road as well as a minor re-alignment of the Alpha Road intersection with King Salmon Road to meet Humboldt County safety standards. PG&E will create a 90 degree intersection angle at the intersection and install a mechanically-stabilized earth wire wall on the Buhne Slough side to minimize impacts to adjacent wetlands. This project element will result in permanent impacts to 5 m^2 of wetlands and temporary impacts to 140 m^2 of wetlands. PG&E will also restore two small, open parking areas located along the south side of Alpha Road to coastal bluff scrub vegetation (Areas 8d and 8e). Finally, an existing culvert under Alpha Road that connects an intermittent drainage ditch with Buhne Slough will be replaced to allow drainage from the HBGS switchyard to bypass the drainage ditch and drain directly to Buhne Slough. If the Commission approves the proposed project, Alpha Road will be added to the HBGS fenced area and incorporated into the HBGS's CEC license.

Area 9 – Assembly Building Area

This 0.8 acre area currently consists of a parking lot, two temporary buildings, several storage containers and a former security kiosk. Under the proposed project, PG&E proposes to remove all structures and paved surfaces, grade the area to remove compacted fill, and recontour the area to connect to adjacent areas. Once grading is complete, soils will be prepared for planting and then planted with native upland grassland vegetation. A portion of the ISFSI stormwater basin will extend into this area.

Bravo Road (Area 9b) formerly served as the sole access road to the HBPP. PG&E will maintain the road as secondary access to the HBGS. The parking spaces on Bravo Road adjacent to the existing Security Building will be restored to a natural condition and the Security Building will be removed. Bravo Road will be improved and repaved.

Portions of the Assembly Building lot area and portions of the area currently called the Frog Pond will be excavated to create a stormwater detention basin (Area 9c) that will collect stormwater from Buhne Point hill, the ISFSI area and the Waste Management Building. Flows will be directed to the area surrounding the Waste Management Building, called the Frog Pond Fringe (Area 9f). Flows will then enter a bio-detention basin (9e) and from here flow through a culvert under the newly constructed ISFSI Access Road (Area 2c) to the Assembly Building stormwater detention pond. Flows from the detention pond will be released slowly into the Buhne Point Wetland Preserve through an adjustable weir. The basin will be planted with wetland obligate plants and surrounding uplands will be planted with native grasses and low

lying herbaceous plants. An existing culvert connecting Frog Pond to the Intake Canal is no longer needed and will be removed. Frog Pond also includes an area of contamination located in the right-of-way of the adjacent Bravo Road. PG&E proposes to remove the contamination in conjunction with these activities.

To facilitate construction of the stormwater detention basin, several obsolete utilities will be removed. These include old storm drainage system components, the truck scale and associated portal monitor, and a sanitary sewer line serving the ISFSI Support Office that will be replaced with a new sewer line beneath the ISFSI Access Road.

Area 10 – Buhne Point Wetland Preserve

Located at the west end of the property, the Buhne Point Wetland Preserve (Area 10a) consists of coastal salt marsh and freshwater wetlands. The Preserve was established in 2008 to mitigate for impacts incurred during the construction of the HBGS and decommissioning of the HBPP. As part of the proposed project, PG&E will replace a culvert that connects the Preserve to the Intake Canal. An adjustable weir control structure will be installed to protect against excessive flooding and to better manage the balance of fresh and saltwater in the Preserve.

The Buhne Point Wetland Preserve Fringe area (Area 10b) contains upland grasses and non-native trees and is currently maintained as a landscaped area. PG&E proposes to restore this area with native vegetation that will buffer and provide habitat continuity to the surrounding restored wetlands and upland areas. Non-native trees in the area, including Monterey Cypress and Eucalyptus) will be assessed for habitat suitability. Two or three trees may be limbed and girdled to provide snags for habitat. PG&E will remove the remainder of the non-native trees and replace them at a 2:1 ratio with native tree species. This area will not be graded but non-native surface vegetation and seed bank will be removed and then the area will be planted with a mix of native trees, shrubs, and herbaceous species.

The Contractor Pedestrian Trail (Area 10c) currently serves as a graveled walkway between Contractor Parking Lot #1 and the Assembly Building area. Under the proposed project, PG&E will remove the gravel and underlying geotextile and grade the area to remove compacted fill. The area will be recontoured as needed to connect it to the surrounding area and then planted with riparian scrub vegetation.

Area 11 – Contractor Parking Lot #1

Currently a partially graveled parking area, PG&E proposes to restore the Contractor Parking Lot #1 to freshwater wetlands. The area has been divided into three mitigation areas, MIT-1, MIT-6 and MIT-7. MIT-1 and MIT-6 are already specified as wetland mitigation areas for impacts associated with pervious projects. MIT-1 (~0.43 acres) is allocated for mitigation of impacts associated with HBGS construction impacts (approved under E-08-003 and CEC Condition BIO-12), and MIT-6 (~0.24 acres) is allocated for mitigation of impacts associated with the Canal Remediation Project (approved under CDP 9-13-0621). MIT-7 will be restored to a combination of coastal prairie, seasonal freshwater marsh and riparian forest to mitigate for impacts associated with the proposed project (see Section E for further discussion). The gravel surface of

the parking lot and any connections to adjacent roadways will be removed and the area will be graded to remove compacted fill. The area will be recontoured to connect to the adjacent mitigation areas. Soils will be prepared for planting and then planted with native vegetation to create a mosaic of coastal prairie, seasonal freshwater marsh and riparian forest ecotypes.

King Salmon Avenue Widening

King Salmon Avenue is a two-lane rural road that serves both the HBPP and the unincorporated community of King Salmon (see Exhibit 6). Currently, the road includes a narrow one foot wide shoulder on either side of the travel lanes that then gives way to a steep embankment slope. The shoulder is not wide enough to create an adequate buffer between the travel lanes and the embankment, creating the potential for a severe roadway departure crash. To address this safety concern, PG&E proposes to narrow the travel lanes from 12 feet to 11 feet and widen the southerly shoulder to provide a more adequate buffer.

Implementation of this project will involve three phases. Phase I, estimated to take 1 month to complete, will widen the shoulder on the portions of King Salmon Road that do not require embankment stabilization. Phase II will construct embankment stabilization structures between the railroad tracks and the Fisherman's Channel Bridge. Stabilization methods will involve installation of one of the following structures: precast concrete crib walls, gabion walls, mechanically stabilized earth walls, soldier pile walls, or sheet pile walls. This phase is expected to take 2 months to complete. Once Phase I and II are complete, Phase III will resurface the roadway and realign the traffic striping and is expected to take 1 month.

C. JURISDICTIONAL BACKGROUND

The subject site is located within two different coastal development permitting jurisdictions. Although the HBPP site is located wholly within the retained jurisdiction of the Commission, one component of the proposed project would occur outside the HBPP boundary. The King Salmon Avenue Widening Project is located within the certified LCP jurisdiction of Humboldt County, for which the County has coastal development permit issuing authority.

Section 30601.3 of the Coastal Act provides that when a project requires a coastal development permit from a local government with a certified Local Coastal Program and the Coastal Commission, a single, consolidated coastal development permit for the entire project may be processed by the Coastal Commission if the applicant and local government agree to that process. On November 25, 2015, Humboldt County agreed to a consolidated permit under Section 30601.3 of the Coastal Act. The applicant also agreed to a consolidated permit for the portions of the project within the County's jurisdiction. Thus, while the proposed project spans two different jurisdictions, the Commission is authorized, based on Coastal Act Section 30715 and the consolidated permit process in Section 30601.3, to review the entire project for consistency with the Chapter 3 policies of the Coastal Act, with the County's LCP used for guidance.

D. OTHER AGENCY APPROVALS

Humboldt Bay Harbor, Recreation and Conservation District (HBHRCD)

The HBHRCD served as the lead agency for California Environmental Quality Act (CEQA) compliance. On August 27, 2015, the HBHRCD approved a Mitigated Negative Declaration (MND) and a permit for the proposed project.

North Coast Regional Water Quality Control Board (RWQCB)

PG&E submitted an application to the North Coast RWQCB for a Section 401 water quality certification on June 1, 2015. Revisions to the application were filed on February 17, 2016. RWQCB action is expected in April 2016.

California Energy Commission (CEC)

The CEC will consider an amendment to the HBPP license to incorporate new areas and facilities into the Humboldt Bay Generating Station (HBGS). PG&E's amendment application, submitted to the CEC in May of 2015, is pending Commission action on the proposed project.

California Department of Toxic Substances Control (CDTSC)

The CDTSC is the lead agency for remedial activities at the site. Except as noted in the project description, these activities will be permitted separately and are not included as part of the proposed project. PG&E submitted a draft Feasibility Study/Remedial Action Plan in October 2014. PG&E is currently operating under an Interim Measures Remedial Action Workplan (IMRAW) approved by DTSC. The final FS/RAP will be finalized toward end of decommissioning.

United State Army Corps of Engineers (USACE)

PG&E submitted an application to the USACE for a Section 404 permit on June 1, 2015. Revisions to the application were filed on February 11, 2016. USACE action is expected in April 2016.

Nuclear Regulatory Commission (NRC)[1]

Unit 3's permanent closure is subject to NRC requirements for terminating PG&E's approvals to operate the facility and to possess nuclear materials. These NRC requirements guide plant decommissioning, cleanup of radioactive structures and systems, and removing and storing radioactive materials. The NRC's decommissioning process includes three main phases – initial activities, major decommissioning and storage activities, and license termination activities. PG&E is currently in the decommissioning phase, which involves permanent removal of major

[1] The NRC generally has exclusive jurisdiction over radiological aspects of projects associated with licensed nuclear power plants, and the Commission is usually prohibited from imposing conditions related to radiological concerns. However, because this project is meant to terminate NRC involvement with the facility and establish post-license site conditions, PG&E will be subject to state cleanup and remediation standards through the DTSC. While the NRC has primary jurisdiction for the handling and disposition of radiological materials associated with Unit 3, DTSC may establish the post-license standards for the remaining onsite contaminants.

facility components, such as the reactor vessel, steam generators, large piping systems, and pumps.[2] As fart of the final closure phase, PG&E submitted an application to the NRC for a License Termination Plan in August 2014. License termination is expected to be completed in 2019/2020 following completion of Final Site Surveys (FSS) in 2018/2019.

E. BIOLOGICAL AND MARINE RESOURCES

Coastal Act Section 30240 states:

> *a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.*
>
> *b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.*

Coastal Act Section 30233(a) states:

> *(a) The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following:*
>
> *(1) New or expanded port, energy, and coastal-dependent industrial facilities, including commercial fishing facilities.*
>
> *(2) Maintaining existing, or restoring previously dredged depths on existing navigational channels, turning basins, vessel berthing and mooring areas, and boat launching ramps.*
>
> *(3) In open coastal waters, other than wetlands, including streams, estuaries, and lakes, new or expanded boating facilities and the placement of structural pilings for public recreational piers that provide public access and recreational opportunities.*
>
> *(4) Incidental public service purposes, including but not limited to, burying cables and pipes or inspection of piers and maintenance of existing intake and outfall lines.*

[2] Activities associated with decommissioning and removal of Unit 3 were approved by the Commission under CDP E-09-010, including Amendements A1, A2 and A3.

(5) Mineral extraction, including sand for restoring beaches, except in environmentally sensitive areas.

(6) Restoration purposes.

(7) Nature study, aquaculture, or similar resource dependent activities.

Coastal Act Section 30230 states:

> *Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.*

Coastal Act Section 30231 states:

> *The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.*

Much of the HBPP site is former coastal prairie terrace, although the power plant's presence during the past fifty years has resulted in significant areas of development, impervious surfaces, and other disturbances on the site. Vegetation occurring within the developed areas of the site is primarily ruderal or introduced species. Nearby, however, are extensive coastal marshes and the waters and shoreline of Humboldt Bay, all with associated upland areas that provide known or potential habitat for a variety of native or sensitive species.

The proposed project includes the removal of structures, excavation and grading activities and the restoration of upland and wetland areas, all of which have the potential to result in impacts to biologically significant species, including special status species, wetlands and marine habitats.

1. Special Status Species

Recent literature reviews and biological surveys have identified several sensitive species at or near the HBPP site. Between 1999 and 2006, PG&E conducted several site surveys for sensitive species, including terrestrial and marine plants and animals, and several areas of the overall power plant site could provide suitable habitat for such species.

Flora

Several special-status plant species have the potential to be found in and around the HBPP site: sea-watch (*Angelica lucida*), coastal marsh milk-vetch (*Astragalus pycnostachyus* var. *pycnostachyus*), false gray horsehair lichen (*Bryoria pseudocapillaris*), twisted horsehair lichen (*Bryoria spiralifera*), bristle-stalked sedge (*Carex leptalea*), Lyngbye's sedge (*Carex lyngbyei*), northern meadow sedge (*Carex praticola*), Oregon coast paintbrush (*Castilleja affinis* ssp. *litoralis*), Humboldt Bay owl's-clover (*Castilleja ambigua* ssp. *humboldtiensis*), Point Reyes bird's-beak (*Chloropyron maritimum* ssp. *palustre*), Whitney's farewell-to-spring (*Clarkia amoena* ssp. *whitneyi*), coast fawn lily (*Erythronium revolutum*), minute pocket moss (*Fissidens pauperculus*), Pacific gilia (*Gilia capitata* ssp. *pacifica*), short-leaved evax (*Hesperevax sparsiflora* var. *brevifolia*), marsh pea (*Lathyrus palustris*), beach layia (*Layia carnosa*), Kellogg's lily (*Lilium kelloggii*), western lily (*Lilium occidentale*), heart-leaved twayblade (*Listera cordata* var. *nephrophylla*), leafy-stemmed miterwort (*Mitellastra caulescens*), ghost-pipe (*Monotropa uniflora*), Howell's montia (*Montia howellii*), Wolf's evening-primrose (*Oenothera wolfii*), California pinefoot (*Pityopus californica*), nodding semaphore grass (*Pleuropogon refractus*), Oregon polemonium (*Polemonium carneum*), dwarf alkali grass (*Puccinellia pumila*), trailing black currant (*Ribes laxiflorum*), maple-leaved checkerbloom (*Sidalcea malachroides*), Siskiyou checkerbloom (*Sidalcea malviflora* ssp. *patula*), coast checkerbloom (*Sidalcea oregana* ssp. *eximia*), western sand-spurrey (*Spergularia canadensis* var. *occidentalis*), Methuselah's beard lichen (*Usnea longissima*), and alpine marsh violet (*Viola palustris*).

Plant surveys conducted in 2015 identified several special-status plant species present on the HBPP site, including the Sea-watch (*Angelica licidae*), Lyngbye's sedge (*Carex lyngbyei*) and Point Reyes bird's beak (*Cordylanthus maritimus ssp. palustris*). This survey also mapped the extent of eelgrass (*Zostera marina*) in the Intake Canal, which will be discussed in more detail in Section E.2. Most of these plant species were discovered in wetland areas outside the developed areas of the site (see Exhibit 7).

These wetland plant species could be impacted by project-related activities. Approximately 250 individuals of sea-watch were documented within the project site along the banks of the Intake Canal and in the Duck Pond. These populations are not within or immediately adjacent to the footprint of project-related activities in the Intake Canal (i.e., culvert replacement and removal) or the Duck Pond (ACM removal), thus direct impacts to these populations are avoidable. Similarly, populations of Lyngbye's sedge and Point Reyes bird's beak are outside proposed construction areas and thus, will not be directly affected by the proposed project. However, these sensitive species are vulnerable to indirect impacts associated with construction-related runoff from nearby areas. PG&E proposes the following BMPs and best management practices to partially address these concerns:

- Identified populations of special-status plants adjacent to Project impact areas will be marked and avoided. If the special-status plant species cannot be avoided, a plan will be developed in coordination with the appropriate agencies (e.g., relocating the plants to comparable habitat in the Preserve or another suitable location on-site).

- Construction footprint will be minimized to the extent possible to avoid impacts on existing special-status plant populations adjacent to Project impact areas.
- The CCC-jurisdictional wetland on Bayview Heights will be assessed prior to construction to determine if any native plants should be salvaged and transplanted into other areas of the site or returned to the nursery for propagation.
- When working in vegetated areas, the following practices will be employed to limit spread of invasive plants:
    - Remove or treat seed sources of viable reproducing invasive plant parts that could spread due to construction disturbance (e.g., cut Pampas grass and other seed heads prior to germination).
    - Avoid moving weed-infested materials (i.e., gravel, and other fill materials) to weed-free locations.
    - Prior to entering or leaving the Project site, vehicles and equipment (including undercarriages) should be inspected for seeds or plant parts. If plant parts are found, clean vehicles and equipment of all mud, dirt, and plant parts.
- Only weed-free, native seed will be used on site. Seed mixes will be verified by the Project biologist prior to spreading to ensure:
    - The species are approved by PG&E for use at HBPP.
    - The seed mix does not contain invasive plants. Note: seed that is certified to be "noxious weed free" may still contain non-native invasive plants that are not included on the California Department of Food and Agriculture noxious weed list.
- Impact areas will be assessed prior to construction to determine if there are any plants that would be appropriate to salvage or use as a seed source. If so, plants will be salvaged for propagation at local a nursery for later use or transplanting directly to a restoration or mitigation area.

In addition, PG&E will address construction-related stormwater concerns through a revision to the existing construction Stormwater Pollution Prevention Plan (SWPPP) in place for decommissioning. The SWPPP will be amended by a Qualified SWPPP Developer to address information provided by the contractor regarding design, implementation, operation, monitoring, and reporting of activities associated with implementing the proposed project. PG&E has also proposed several stormwater Best Management Practices (BMPs) to minimize the potential effects of construction-related runoff into areas. These BMPs will include measures such as installing and maintaining barriers and filters to minimize erosion, minimizing erosion from stockpiled material, lining storage areas with an impermeable material to prevent leaks and installing containment berm and leaving vegetation in place to the extent possible to reduce sedimentation, and other similar measures. To ensure the project BMPs are adequate to protect coastal resources and will result in conformity to applicable Coastal Act policies, **Special Condition 1** requires PG&E to submit for Executive Director review and approval a Stormwater Management Plan that describes the BMPs it will implement to ensure conformity to Coastal Act provisions. **Special Condition 1** includes provisions to ensure PG&E includes measures in that Plan to minimize runoff and sedimentation from excavated soils, to identify the location and BMPs incorporated into each new facility used during the project, and other similar requirements.

To further reduce the potential for impacts to sensitive species, **Special Condition 2** requires that PG&E employ a biologist to conduct pre-construction surveys to detect the presence of special status species and nesting birds in the project vicinity. If special status species or nesting birds are discovered, avoidance measures will be implemented. In addition, **Special Condition 2** requires that in the event that pre-construction surveys determine that sea-watch has spread into areas proposed for grading or ground disturbance, PG&E will develop a plan to avoid the plants if feasible or to relocate them to a nearby location. Additionally, **Special Condition 3** requires PG&E to hire a designated project biologist to implement many of the protective measures needed to ensure project activities do not cause adverse effects to special-status plant species. These measures include conducting biological monitoring during project-related activities that have the potential to affect special status-species, and providing worker awareness training on how to avoid impacts.

Fauna

Biological surveys conducted between 1999 and 2006 identified several special-status wildlife species at or near the site including the Western snowy plover (*Charadrius alexandrinus nivosus*), California brown pelican (*Pelecanus occidentalis californicus*), bald eagle (*Haliaeetus leucocephalus*), and Northern red-legged frog *(Rana aurora)*. In addition, habitat at or near the site is also considered suitable for several special–status species including: (1) freshwater aquatic species, including foothill yellow-legged frog (*Rana boylii*), tailed frog (*Ascaphus truei*), southern torrent salamander (*Rhyacotriton variegatus*), and the northwestern pond turtle (*Actinemys marmorata marmorata*); (2) fish species including Northern American green sturgeon (*Acipenser medirostris*), longfin smelt (*Spirnichus thaleichthys*), coho salmon (*Oncorhynchus kisutch*), steelhead (*Oncorhynchus mykiss*), Chinook salmon (*Oncorhynchus tshawytscha*), and tidewater goby (*Eucyclogobius newberryi*); (3) bird species, including marbled murrelet (*Brachyramphus marmoratus*) and tri-colored blackbird (*Angelaius tricolor*); and (4) bat species, including Townsend's big-eared bat (*Corynorhinus townsendii*) and pallid bat (*Antrozous pallidus*). However, none of these species have been observed on site and they have a low to moderate likelihood of occurring at the site.

Project activities, including the removal of structures, excavation and surface grading and habitat restoration, have the potential to adversely impact any special-status species present on the HBPP site. The most significant potential impacts are to northern red-legged frogs, which are known to occur in wetland areas on the site. Project-related activities such as excavation, grading, re-grading, and vehicular traffic could lead to mortality or injury to individuals in the vicinity of these activities. In addition, although implementation of the proposed project will lead to a long-term increase in frog habitat, during the initial construction period, wetland habitat suitable for frogs will be temporarily reduced. In addition to red-legged frogs, project activities have the potential to impact other sensitive wildlife species, such as nesting birds and two species of bats. Potential impacts include habitat displacement from anticipated tree removal and harassment from construction vehicles and personnel.

To reduce the potential for impacts to sensitive wildlife species, PG&E proposes the following measures:

- All vehicles traveling within the HBPP will operate at speeds less than 15 mph.
- A flagger will walk ahead of all commercial vehicles, allowing observers to assist drivers in avoiding vehicular contact with frogs.
- Prior to construction within suitable amphibian habitat, an amphibian rescue effort will be conducted in an attempt to clear the area of individuals that are present. Eggs may be present during the breeding season (October through early March), tadpoles during the pre-metamorphosis season (March through August), and adults year-round. Any egg masses, tadpoles, or adults captured will be relocated to suitable habitat (e.g., within the existing Mit-2 pond in the Preserve.
- A biological monitor will be present during activities that impact or remove wetlands and amphibian habitat. Once the habitat is removed, a biological monitor will no longer be required.
- If work occurs during the bird nesting season (February 15 to August 31), a pre-construction nesting bird survey will be conducted by a qualified biologist within one week prior to commencement of construction activities, including clearing any vegetation or ground disturbance. If active nests are found, appropriate buffers will be established and communication with agencies on further action will be conducted. In accordance with the MBTA, if an active bird nest is observed within or near Project construction sites, work will cease, care will be taken to not harm the nest, and the work supervisor will contact the Project-designated PG&E Biologist.
- A biologist will survey for cavities, suitable for Townsend's big-eared and/or pallid bat roosting habitat, at any tree slated for removal as part of the FSR plan implementation. If such a cavity is identified, an assessment of bat use will be initiated by a qualified wildlife biologist. If the cavity shows bat habitation, then the tree and a screen of trees immediately surrounding it, if present, will be retained.

In addition to these measures, **Special Condition 1** requires that PG&E submit to the Executive Director for review and approval a Stormwater Management Plan to minimize impacts to wetlands and other habitat areas from stormwater runoff. **Special Condition 2** requires that PG&E employ a biologist to conduct pre-construction surveys to detect the presence of special status species recommend avoidance measures if necessary. **Special Condition 3** requires PG&E to hire a designated project biologist to implement many of the protective measures needed to ensure project activities do not cause adverse effects to special-status plant species. These measures include conducting biological monitoring during project-related activities that have the potential to affect special status-species, such as activities that could impact red-legged frog habitat, and providing worker awareness training on measures to avoid impacts. With PG&E's measures and Special Conditions 1, 2 and 3 in place, direct impacts to red-legged frogs will be avoided and indirect impacts to frogs and other sensitive wildlife species will be minor and temporary.

In the long-term, the proposed project will result in the restoration of more than 14 acres of new habitat on the HBPP site. The restored and mitigation areas will connect existing natural areas to form two large, contiguous areas of high-quality wetlands and native vegetation. This will improve habitat quality and availability for northern red-legged frogs, sea-watch and other special-status species. Wildlife-friendly fencing will be installed around the perimeter of the site and around some of the restored areas to allow wildlife. This fencing will be designed to allow

larger animals such as deer, to pass through the fence to reach another area of the site, but to keep PG&E personnel and visitors out of the newly created habitat. The conceptual fencing plan is included in Exhibit 8 and is described in detail in the Conceptual Fencing Plan (included as Appendix B).

2. Wetlands

The excavation, removal, or any other artificial disturbance of any sediment or soil in a wetland constitutes "dredging" and is therefore subject to the policies of Coastal Act Section 30233. Several areas on the HBPP site meet the Commission's definition of a wetland. These areas include several drainage ditches, an unmaintained stormwater drainage basin (Frog Pond), salt marsh located along the banks of the Intake Canal, and the Buhne Point Wetland Preserve area (see Exhibit 9). Construction activities associated with the proposed project could result in impacts to existing wetlands on the HBPP site. A description of potential impacts to each wetland area measures is included below.

Alpha Road

Alpha Road will be paved at the existing width, and the road will be re-aligned at the King Salmon Avenue intersection to meet road safety standards. Adjacent to the road at this location are two wetlands, identified as W-1 and SF-2 on Exhibit 9. Approximately 0.001 acres of wetland area will be permanently impacted from fill required to bring the new road section to grade. PG&E proposes to mitigate permanent impacts at a 4:1 ratio by creating new wetland habitat in MIT-7. To minimize indirect impacts to surrounding wetland areas associated with the road realignment, a mechanically stabilized earth wire wall will be installed on the Buhne Slough side of the road to protect the adjacent wetlands from erosion and stormwater impacts from the construction of the road realignment.

Intake Canal and Buhne Point Preserve

A culvert that connects the Buhne Point Preserve to the Intake Canal, providing a tidal connection to the wetlands in the Preserve, will be replaced as part of the proposed project. In addition, a culvert connecting the Intake Canal to the existing Frog Pond area will be removed, and the pedestrian bridge, including concrete footings, that crosses over the Canal will also be removed. These project components have the potential to impact a narrow band of coastal salt marsh an unvegetated mudflat that lines the Intake Canal above the high tide line (see Exhibits 10-14).

PG&E has designed the project to minimize impacts to wetland areas. In–water work will be avoided by executing the excavation and replacement or removal within one tidal cycle. If the project is delayed and completing the work within one tidal cycle becomes infeasible, PG&E will deploy a water-filled bladder dam, sand bags or similar technology within the culvert footprint to block the remaining portion of open trench from rising waters within the Intake Canal. Removal of the pedestrian bridge and concrete footings will be conducted by a crane from the shoreline.

However, even with these protocols in place, direct impacts to the wetland areas are unavoidable. Portions of the existing culverts and pedestrian bridge footings are located within wetland habitat, and thus any excavation of these areas will result in direct temporary impacts to the

surrounding wetlands. PG&E estimates that approximately 0.054 acres of wetland habitat along the Intake Canal will be directly impacted by the proposed project. To mitigate this impact, PG&E proposes to restore the affected area to pre-project wetland habitat conditions at the conclusion of the culvert and bridge removal/replacement projects. After the pedestrian bridge is removed and the culverts are removed or replaced and the area filled back in with clean fill and the area restored to pre-project conditions. To facilitate this restoration, prior to construction, PG&E will salvage and store any native salt marsh plants within the project footprint that are suitable for replanting post-construction. Once construction is complete, the area will be filled to match pre-project contours and fill in any voids left by construction activities (i.e., during removal of the pedestrian bridge footings), and then planted with native species to match previous or adjacent ecotypes.

Bayview Heights
Bayview Heights currently supports two wetlands and one intermittently flowing drainage ditch that meet the Coastal Commission definition of a wetland (identified as DD-1 and SF-3). These wetlands are currently supported by stormwater from the ISFSI site. The proposed project involves removal of the stormwater system in Bayview Heights (and replacement with a different, low impact design stormwater system discussed in Section A) and regrading of the Bayview Heights area for the purposes of restoring the area to coastal prairie habitat. These project activities will result in the loss of 0.115 acres of wetland habitat provided by the three wetlands described above. PG&E proposes to mitigate these impacts at a 2:1 ratio by creating new wetland habitat in the MIT-7 mitigation area.

Duck Pond
The Duck Pond is located to the east of Trailer City and consists of semi-freshwater or brackish marsh with native vegetation. The proposed project does not include any activities in the Duck Pond. However, activities to grade the adjacent Shoreline Wetland Mitigation area (currently Trailer City) to connect to the Duck Pond and asbestos removal activities within the Trailer City area have the potential to result in indirect impacts to the Duck Pond. To minimize the potential for impacts to the Duck Pond, PG&E proposes to install silt fencing around the adjacent construction footprint to ensure that any erosion from construction activities is captured before it is allowed to migrate into the Duck Pond.

Frog Pond stormwater detention basin
Frog Pond is a stormwater basin located between the Assembly building, Waste Management Building, and Bravo Road that collects stormwater from portions of Buhne Hill, the HBPP core area and Bravo Road. The stormwater basin has not been recently maintained and as a result, approximately six inches of sediment have accumulated, and the basin is vegetated primarily with wetland plants, including cattail, salt grass, and pickleweed and non-native invasive grasses. Frog Pond also includes an area of known contamination.

As part of the proposed project, Frog Pond will be remediated to remove existing contamination, and then the stormwater basin will be recontoured and moved to a new location in the adjacent Assembly Building Parking area. This will result in permanent impacts to 0.295 acres of wetlands. PG&E proposes to mitigate these impacts at a 2:1 ratio by creating new wetland habitat in the Shoreline Wetland Mitigation area.

King Salmon Avenue wetlands
The King Salmon Avenue wetlands (denoted as DD-4 on Exhibit 9) consist of a 0.023 acre intermittently flowing drainage ditch and a 0.04 acre wetland adjacent to King Salmon Ave near the intersection of Charlie Road. Creation of new wetland habitat in the adjacent MIT-7 area could result in indirect impacts from stormwater runoff or increased sedimentation to these wetland areas. In addition, construction of the King Salmon Ave. shoulder widening project could result in similar indirect impacts to the King Salmon wetlands as well as wetlands in the Buhne Point Wetland Preserve that are adjacent to the road.

Indirect Impacts
As described above, several project components have the potential to result in indirect impacts to adjacent wetland areas. PG&E has proposed several mitigation measures, including the installation of silt fences and curtains, to minimize wetland impacts. In addition, **Special Condition 1** requires PG&E to develop a stormwater management plan to control stormwater runoff from impacting adjacent areas and to report any events where BMPs did not prevent adverse impacts to wetlands or coastal waters and the measures taken in response to these events. **Special Condition 2** requires PG&E to conduct pre-construction surveys to establish existing boundaries of wetland areas. Finally, **Special Condition 3** requires PG&E to hire a biologist to conduct biological monitoring during construction activities to ensure that mitigation measures are implemented properly and impacts to adjacent areas, including wetland areas, are avoided. In the event that unanticipated wetland impacts occur, PG&E will be required to amend this CDP to address these impacts and fully restore any disturbed wetlands to its pre-project conditions. Implementation of these mitigation measures will ensure that indirect impacts to wetland areas from nearby construction areas will be minor and temporary.

Direct Impacts
As described above, the proposed project will result in direct impacts to 0.465 acres of wetland habitat in several areas throughout the HBPP site. Projects that include dredging or fill of wetlands must meet the three tests of Coastal Act Section 30233(a). The first test requires that the proposed activity must fit into one of seven categories of uses enumerated in Coastal Act Section 30233(a). The second test requires that there be no feasible less environmentally damaging alternative. The third and last test mandates that feasible mitigation measures be provided to minimize the project's adverse environmental effects.

Allowable Use Test
Each project component must be analyzed independently to determine if it meets the allowable use test:

Alpha Road wetlands: Alpha Road will be paved and realigned to provide a safe accessway to the HBGS, the energy facility that replaced the HBPP. As such, it is considered a "new or expanded port, energy, and coastal-dependent industrial facility" and thus, meets the allowable use test under Coastal Act Section 30233(a)(1).

Intake Canal wetlands: The culvert and pedestrian bridge removal/replacement projects that will result in impacts to the Intake canal wetlands are part of a larger effort to restore several areas of

the HBPP site following the completion of decommissioning, and will specifically enhance and restore tidal wetland and marine areas in the Buhne Point Wetland Preserve and the Intake Canal. Thus, this project component meets the allowable use test as restoration, under Coastal Act Section 30233(a)(6).

Bayview Heights: Impacts to the Bayview Heights wetlands will occur as part of a larger effort to restore several areas of the HBPP site following the completion of decommissioning, and will specifically result in the restoration of coastal prairie habitat on Buhne Point. Thus, this project component meets the allowable use test as restoration, under Coastal Act Section 30233(a)(6).

Frog Pond stormwater detention basin: Impacts to Frog Pond are necessary to remove known areas of contamination and are part of a larger effort to restore several areas of the HBPP site following the completion of decommissioning. Thus, this project component meets the allowable use test as restoration, under Coastal Act Section 30233(a)(6).

Alternatives

Each project component must be analyzed independently to determine whether there are any feasible less environmentally damaging alternatives:

Alpha Road wetlands: Alpha Road will be paved and realigned to provide a safe accessway to the HBGS. Wetland impacts will occur during the realignment portion of the project that is necessary to comply with Humboldt County's road safety standards. Large trucks will need to use this entrance to access the HBGS, and thus, realignment will be needed to provide sufficient area for large trucks to turn right from King Salmon Road onto Alpha Road and provide safe access to the HBGS. Therefore, avoiding the work, or the "no project" alternative, is not a feasible or environmentally preferable option. In addition, because the proposed work involves improvements to existing infrastructure, there are no alternative locations for the project that could entirely avoid wetlands. Thus, there is no feasible less environmentally damaging alternative, and the Commission finds this project component consistent with the second test of Coastal Act Section 30233(a).

Intake Canal wetlands: Replacement of the culvert connecting the Buhne Point Wetland Preserve to the Intake Canal is necessary to ensure that wetlands in the Preserve have adequate tidal flow to support existing and new wetland vegetation. Removal of the culvert connecting the existing Frog Pond area with the Intake Canal will remove infrastructure from coastal salt marsh areas and remove a potential hazard from the bank of the Intake Canal. Removing the pedestrian bridge will result in an addition to the existing coastal salt marsh area (where the existing bridge footings are currently located), as well as removing a potential hazard from the Intake Canal area. Therefore, avoiding the work, or the "no project" alternative, is not an environmentally preferable option for any of these project components. In addition, because the proposed work involves removal or replacement of existing infrastructure, there are no alternative locations for the project that could entirely avoid wetlands. Thus, there is no feasible less environmentally damaging alternative and the Commission finds this project component consistent with the second test of Coastal Act Section 30233(a).

Bayview Heights: Restoration of the Bayview Heights area is required by previous Commission CDPs and will result in the restoration of almost five acres of coastal prairie habitat. Retaining the wetlands would significantly complicate restoration efforts and would decrease the amount of restored prairie habitat. In addition, the proposed project includes principles of low-impact design and stormwater management that will improve upon the current system of stormwater management. Therefore, avoiding the work, or the "no project" alternative, is not a feasible or environmentally preferable option. In addition, because the proposed work involves restoration of an existing area to pre-development conditions, there are no alternative locations for the project that could entirely avoid wetlands. Thus, there is no feasible less environmentally damaging alternative and the Commission finds this project component consistent with the second test of Coastal Act Section 30233(a).

Frog Pond stormwater detention basin: Impacts to Frog Pond are necessary to remove known areas of contamination. Leaving the contamination in place could result in significant water quality impacts to adjacent wetland and upland areas as well as groundwater resources. This work is included in the draft Feasibility Study/Remedial Action Plan preliminarily approved by DTSC and is expected to be required in the final Feasibility Study/Remedial Action Plan. Therefore, avoiding the work, or the "no project" alternative, is not a feasible or an environmentally preferable option for any of these project components. In addition, because the proposed work involves removal or replacement of existing infrastructure, there are no alternative locations for the project that could entirely avoid wetlands. Thus, there is no feasible less environmentally damaging alternative and the Commission finds this project component consistent with the second test of Coastal Act Section 30233(a).

Mitigation

The final requirement of Coastal Act Section 30233(a) is that filling and dredging of wetlands may be permitted if feasible mitigation measures have been provided to minimize any adverse environmental effects. As described above, the proposed project will result in direct impacts to 0.465 acres of wetlands. Table 4 provides a summary of PG&E's proposed mitigation for each of the wetland impacts described above. As shown in Table 4, PG&E proposes to mitigate impacts to wetland areas at a 4:1 mitigation ration and impacts to stormwater detention areas or drainage ditches at a 2:1 mitigation ratio. Temporary impacts to coastal salt marsh along the Intake Canal will be mitigated at a 1:1 ratio onsite.

Staff, in consultation with the Commission's biologist, believes that a 2:1 mitigation ratio is appropriate for impacts to stormwater features given that the dual use of the wetland area – to provide storage and conveyance for stormwater and to provide habitat for plants and wildlife – generally results in degraded wetlands. Because these areas were designed as stormwater facilities, the fact that they provide wetland habitat can be considered an incidental benefit. Nevertheless, these areas do meet the Commission's definition of a wetland and as such, must meet the three part test of Coastal Act Section 30233, which includes providing sufficient mitigation. However, given that the original purpose of these anthropogenic wetlands was not to provide habitat but to store and convey stormwater, that routine periodic maintenance degrades the vegetation, and given that these wetlands have a low density and diversity of vegetation, and are fragmented and isolated from more intact and robust wetland habitats, a mitigation ratio that

is less than the 4:1 ratio typically applied by the Commission for wetland areas is appropriate. In this case, at a 2:1 mitigation ratio, the high density, diverse wetland habitat that is created will sufficiently mitigate for the removal of the degraded wetlands within the stormwater facilities.

The goals, objectives success criteria and monitoring methods for each mitigation area are fully described in PG&E's Mitigation and Monitoring Plan for the HBPP Final Site Restoration Project (included as Appendix A). A summary of this information is included in Table 5. Wetland impacts that will be mitigated at MIT-7 and the Shoreline Wetland Mitigation area will be required to demonstrate 70% coverage of native vegetation with at least 50% cover of halophytic plants within five years. In addition, monitoring data must demonstrate that 10% of the wildlife species that are observed in adjacent wetland areas or a comparison site must be observed within the mitigation area within five years. PG&E proposes that annual monitoring of these areas will occur for at least five years or until success criteria are met, at which point annual monitoring and maintenance for that area will cease and a final report demonstrating success of the mitigation will be prepared and submitted to the appropriate agencies. Impacts to salt marsh areas at the Intake Canal will be mitigated onsite. To demonstrate successful mitigation, these areas must have a vegetative cover that is at least 95% of the pre-construction vegetation cover and density. In addition, the site must have a 70% cover of native plants and less than 2% cover of invasive species.

The Commission staff has reviewed and concurred with most of the mitigation success and monitoring components described briefly above and more fully in the Mitigation and Monitoring Plan for the HBPP Final Site Restoration Project. However, to be consistent with other mitigation and restoration projects approved by the Commission, and to ensure that impacts are adequately mitigated, a minimum monitoring period of 5 years needs to be implemented. In addition, the Mitigation and Monitoring Plan should include a description of the remediation process PG&E will implement in the event that mitigation areas are not successful within the five year period. Thus, to ensure that the proposed mitigation is successful, **Special Condition 4** requires PG&E to submit a revised Mitigation and Monitoring Plan for the HBPP Final Site Restoration Project that incorporates a minimum five year monitoring period and a framework for remediation, should it become necessary. As so conditioned, the Commission finds that the third and final test of Coastal Act Section 30233(a) is also satisfied, and the proposed project is consistent with Section 30233 of the Coastal Act.

3. Marine Resources

The HBPP site is located on the southeast shore of Humboldt Bay and is hydraulically connected to the Bay through Fisherman's Channel and the Intake Canal. The Intake Canal was originally built to bring cooling water into the HBPP. As part of the decommissioning process, CDP 9-13-0621 authorized the remediation and restoration of the Intake Canal. Currently, the Canal supports eelgrass (*Zostera marina*), which is considered a "Habitat Area of Particular Concern" under the Magnuson-Stevens Fishery Conservation and Management Act in recognition of its importance as nursery habitat for groundfish species.

Part of the proposed project involves the replacement of a culvert that connects the Buhne Point Wetland Preserve to the Intake Canal and the removal of a culvert connecting the Intake Canal to

the existing Frog Pond area. In addition to impacts to coastal salt marsh described above, excavation and replacement or removal of these culverts has the potential to directly or indirectly impact adjacent eelgrass areas (see Exhibit 11). Direct impacts would result from removal of or damage to existing stands of eelgrass. The most likely indirect impact would be from increased sedimentation that could inhibit the plant's ability to grow and reproduce. Once the project is completed, the tidal connection for the Buhne Point Wetland Preserve will function more effectively, thus improving tidally influenced habitat within the Preserve.

To minimize the potential for impacts to eelgrass, PG&E will execute the extraction and replacement or removal within a single tidal cycle for each culvert. In-water work within the Intake Canal (i.e, installation of sheet piling or other water control structures) will be avoided to the maximum extent feasible. In the event that unanticipated delays cause the work time frame to exceed one tidal cycle, a water-filled bladder dam, sand bags or similar technology will be installed within the culvert footprint to block the remaining portion of open trench from rising waters within the Intake Canal. Furthermore, to ensure that eelgrass is not adversely impacted, PG&E proposes to conduct eelgrass surveys in the Intake Canal within 25 meters of the work area within two weeks of the commencement of culvert replacement/removal activities. If the contingency plan is deployed, a post-project eelgrass survey will be conducted to determine if impacts occurred and if so, PG&E will undertake appropriate mitigation. The Commission finds this measure alone would not go far enough to ensure that impacts to eelgrass are avoided, and in the event that impacts do occur, appropriately mitigated for. To ensure full consistency with the marine resource protection policies of the Coastal Act, **Special Condition 5** requires PG&E to conduct a pre- and post-project eelgrass survey consistent with the protocols described in the California Eelgrass Mitigation Policy (CEMP), adopted by NOAA in 2014. If results of the surveys indicate that impacts occurred, PG&E will be required to mitigate for those impacts at the 1.2:1 mitigation ratio described in CEMP. With these measures in place, impacts to eelgrass will be minor and temporary.

Thus, as conditioned, the biological productivity of eelgrass habitat located in the Intake Canal will be maintained, and the Commission finds the proposed project consistent with Sections 30230 and 30231 of the Coastal Act.

4. Fulfillment of Restoration Requirements

As discussed in Section A, the Commission has issued PG&E several permits authorizing decommissioning activities and including permit conditions or language that relate to site restoration (see Table 1). In most cases, permit conditions required that PG&E submit a CDP application for final site restoration that removed development approved in the permit and restored the affected lands. However, the project that PG&E proposes here does not strictly adhere to these requirements. Instead of restoration, PG&E proposes to repurpose several areas covered by these permits for use by the HBGS or the ISFSI. PG&E also proposes to restore some areas of the site that are not covered by existing permits. The Commission finds that this restoration project offers a unique opportunity for a large-scale site restoration and planning effort, and that it is therefore appropriate to view the site holistically and to determine where on-site restoration is most appropriate and the most likely to be successful. However, to satisfy previously-imposed requirements under the Coastal Act, the total acreage that was required to be

restored through earlier permits must be equal to the proposed restored acreage, including any applicable mitigation ratios.

Table 6 provides a summary for each area and subarea of the restoration acreage requirements for wetland and non-wetland areas and how the proposed FSR plan addresses those requirements. While some areas, such as Trailer City, provide an excess of restored area, other areas, such as the ISFSI and ISFSI support area fall short of the requirements imposed by the Commission under previous permits. When taken as a whole, the FSR plan will result in a total of 9.13 acres of restored non-wetland area and 3.98 acres of restored wetland area. These acreages are a total of 4.14 acres short of non-wetland restored area requirements, and 0.38 acres short of restored wetland acreage requirements. PG&E claims that based on existing and future needs for the HBGS and the ISFSI, there is no additional acreage on the HBPP site that can feasibly be restored to make up for this shortfall.

The goals, objectives success criteria and monitoring methods for each mitigation area are fully described in PG&E's Mitigation and Monitoring Plan for the HBPP Final Site Restoration Project (included as Appendix A). This plan provides restoration or mitigation goals, objectives and success criteria for each area and subarea to be restored to natural conditions. A summary of this information is included in Table 5. Similar to the findings for wetland mitigation included in Section E.2, the Commission agrees as to the adequacy of most of the mitigation success and monitoring components included in the Mitigation and Monitoring Plan for the HBPP Final Site Restoration Project. However, to be consistent with other mitigation and restoration projects approved by the Commission, and to ensure that impacts are adequately mitigated, a minimum monitoring period of 5 years should be implemented. In addition, the Mitigation and Monitoring Plan should include a description of the remediation process PG&E will implement in the event that mitigation areas are not successful within the five year period. Thus, to ensure that the proposed restoration is successful, **Special Condition 4** requires PG&E to submit a revised Mitigation and Monitoring Plan for the HBPP Final Site Restoration Project that incorporates a minimum five year monitoring period and a framework for remediation, should it become necessary.

To address the shortfalls identified on the previous page, PG&E proposes to mitigate the loss of 4.14 acres of non-wetland and 0.38 acres of wetland restored areas on the HBPP site by relocating an existing 6-inch natural gas line (line L 126A), and decommissioning an existing 4-inch gas line (Line L 126B) (collectively called the gas line project). These components will be included within a larger restoration project called the Martin Slough Enhancement Project. The purpose of this project is to enhance a portion of Martin Slough and associated wetlands and riparian habitat, with the objectives of enhancing plant, fish, and wildlife habitat, improving water quality, increasing resiliency to climate change, and reducing flooding. Martin Slough is the lowest tributary to Elk River and is located less than 2 miles northeast of PG&E's HBPP site.

The gas line project is an unanticipated but integral part of the Martin Slough Enhancement Project. Due to requirements related to the depth of soil coverage for gas lines, proponents of the Martin Slough Enhancement Project cannot proceed with restoration activities until the gas line project is implemented. However, as this was not an anticipated problem, funding secured for the Enhancement Project does not cover the cost of the gas line project, which is estimated to

cost approximately 3 million dollars. Implementation of the gas line project will allow the restoration of almost 9 acres of wetlands and 3.5 acres of brackish water habitat in and adjacent to Martin Slough. PG&E and the Redwood Community Action Agency (RCAA) have agreed in principal on the draft MOA (see Exhibit 15) ensuring that PG&E will fulfill its obligation to implement the gas line project if the Commission finds that this will fulfill its mitigation requirement. As part of this agreement, RCAA will include the gas line project in the CEQA analysis and permit applications for the overall enhancement project, which will include an application for a Coastal Development Permit. The gas line project is further described in Appendix D.

If successful, the Commission finds that implementation of the gas line project in support of the Martin Slough Enhancement Project will provide adequate mitigation for the loss of 4.14 acres of restored non-wetland area and 0.38 acres of restored wetland area caused by the proposed project. This gas line project will, in combination with the overall restoration project proposed here, therefore satisfy previous CDP requirements that PG&E restore areas of the HBPP site. As stated above, the first priority was to identify areas for restoration on the HBPP site. The Commission staff worked extensively with PG&E throughout the permit review process to identify additional areas of the site that could be restored. As part of this process, PG&E proposed to restore areas, including the Assembly Building and Parking Area and the Buhne Preserve Fringe Area that were not included in previous permits and were not originally slated for restoration. PG&E also provided the justification and need for retaining the Waste Management Building, the Count Room and Alpha Road for use by the HBGS or the ISFSI (see Appendix D). Based on the information submitted, the Commission concurs that the areas PG&E proposes to retain for use by the HBGS and the ISFSI are necessary, and that there is no additional acreage onsite that is available for restoration.

The gas line project provides an important opportunity for PG&E to facilitate the restoration of high quality wetland and brackish water habitat that is proximate to the impact. The Martin Slough project site is located less than two miles to the northeast of the PG&E HBPP site. The main goals of the project are to create and restore tidal marsh and tidal pond areas to provide new habitat, improve water quality and increase resiliency to climate change. The Commission finds that restoration of this type of habitat would be preferable and more ecologically desirable than would restoration of the upland habitat that constitutes the loss of restored acreage on the HBPP site. This is largely due to the historic loss of extensive areas of coastal wetland areas due to filling and other development in Humboldt Bay and in California as a whole. Thus, although the gas line project would not result in in-kind mitigation, the habitats that would be restored in Martin Slough would provide a greater ecological value to the surrounding ecosystem than the restoration of upland areas on an existing industrial site. Furthermore, the gas line project would facilitate the restoration of approximately 12.5 acres of tidal and brackish marsh and pond areas, as mitigation for 4.14 acres of upland habitat and 0.38 acres of wetland habitat, which, if habitat types are combined would represent a little less than a 3:1 mitigation ratio. For the reasons stated above, implementation of the gas line project in support of the Martin Slough Enhancement Project provides adequate mitigation for the loss of 4.14 acres of upland habitat and 0.38 acres of wetland habitat at the HBPP site.

To ensure that PG&E provides mitigation for the losses of restored habitat as described above, **Special Condition 6** requires PG&E to implement the gas line project in substantial accordance with the draft MOA included in Exhibit 15. If PG&E is not able to implement the gas line project, it will be required to submit an amendment to this CDP describing a plan to provide mitigation for the losses to wetland and non-wetland restored areas. In addition, to ensure that the areas that PG&E proposes to restore remain in perpetuity and are not developed in the future, **Special Condition 7** places an open space restriction on the areas listed in Table 6 as restored areas that fulfill PG&E's previous CDP requirements. No development will be allowed in these areas with the exception of activities such as monitoring and maintenance of habitat areas and stormwater features, invasive plant removal, fence repair and the potential future paving of a small area in Bayview Heights to facilitate the removal of the spent fuel casks, should a federal repository become available. To further ensure the restored areas remain in a natural state, **Special Condition 8** requires PG&E to record a deed restriction against the HBPP property indicating that the Commission has approved development that restricts the use and enjoyment of the property for as long as the permit or the development it authorizes remains in existence. Furthermore, **Special Condition 4** requires that PG&E implement the proposed restoration and mitigation in accordance with a revised Biological Mitigation and Monitoring Plan for the Humboldt Bar Power Plan Final Site Restoration Project. This Plan documents the mitigation design, goals, objectives, and success criteria for each restoration and mitigation area. **Special Condition 4** also requires that monitoring continue for a minimum of five years.

When these conditions are satisfied, the Commission finds that PG&E will have fulfilled the site restoration and development removal requirements included in the following permits: E-07-005, E-08-003, E-08-008, E-09-005, and E-09-010.

F. HAZARDOUS MATERIALS

Coastal Act Section 30232 states:

> *Protection against spillage of crude oil, gas, petroleum products, or hazardous substances shall be provided in relation to any development or transportation of such materials. Effective containment and cleanup facilities and procedures shall be provided for accidental spills that do occur.*

The proposed project could potentially increase the risk of oil spills adjacent to coastal waters due to its use of motor vehicles and equipment during both construction and ongoing use of some of the project components. However, construction would involve the transport of very limited quantities of petroleum products to the project site by service vehicles, and while onsite servicing may result in accidental spills, these spills would be small in volume and limited to land areas where they could be quickly contained and cleaned up. In addition, the proposed project would be subject to the spill plan already in place at the power plant. PG&E maintains a supply of spill cleanup items, including absorbent pads and other absorbing material, which are immediately available, if needed. PG&E's proposed project includes a commitment to adhere to the existing Spill Prevention and Contingency Plan for the HBPP, which includes several measures meant to avoid or reduce the potential for oil or fuel spills and a variety of Best Management Practices (BMPs). As proposed, the project requires PG&E to adhere to BMPs to minimize the potential

for spills in or near wetlands on the HBPP site and Humboldt Bay itself by requiring the maintenance of an environmental boundary fence to direct vehicles away from wetlands or other sensitive areas and the installation of barriers to filter runoff from construction sites. In addition, all heavy machinery to be used would be equipped with spill response kits and all equipment servicing would be performed away from water bodies to prevent contamination of water in the event of a fuel or hydraulic fluid spill. If a spill were to occur on soil or in water, appropriate measures would be taken, as described in the HBPP Spill Prevention and Contingency Plan and efforts would be made to collect and properly dispose of all contaminated materials.

The proposed project also includes remediation of contaminated areas that could lead to a release of hazardous substances to the environment. One of the goals of the decommissioning process is remove all hazardous materials from the HBPP site. To accomplish this goal, PG&E has worked with the DTSC, the agency that regulates the remediation of chemical contamination, to identify areas of contamination and to determine appropriate remediation protocols and clean-up goals. Management of soil generated by the decommissioning process has been handled pursuant to the DTSC-approved Interim Measures Remedial Action Workplan (IMRAW). The DTSC has also preliminarily approved a draft Feasibility Study/Remedial Action Plan (FS/RAP) that updates soil contaminant screening thresholds and addresses restoration and redevelopment of the HBPP. The final FS/RAP will reflect the final land use described in this CDP, after the Commission authorizes the proposed project.

The HBPP site contains several areas of known contamination in addition to areas that may contain contaminated material. The draft FS/RAP identifies nine potential soil remediation areas (PSRAs) based on detection of one of more chemicals exceeding proposed final cleanup goals (see Exhibit 16). Table 7 includes a description of the chemicals of concern (COC), a summary of the proposed cleanup target goals, and consideration of ecological receptors for each of the nine PSRAs. PG&E claims that in general, potential ecological receptors would be sufficiently protected by the proposed cleanup goals for three reasons: (1) most upland areas, where background levels of some contaminants (e.g., arsenic) are naturally high, most impacted areas will experience the practical removal of impacted soil to background concentrations (i.e., PSRA 1 and 8); (2) soil remediation areas are of such limited extent that the risk of exposure to ecological receptors is negligible (i.e., PSRA 5 and 6); and (3) clean up levels in wetland areas target levels will be fully protective of ecological receptors (i.e., PSRA 7).

PG&E will minimize the potential that hazardous substances are not released into the environment through the implementation of existing plans and minimization and avoidance measures. Contamination in PSRAs 1-9 will be excavated and removed according to the draft FS/RAP and as described in the project description and in Table 7. If, in the course of project activities, previously unknown or undocumented conditions are encountered, PG&E will conduct characterization sampling to determine if chemical or radiological contamination exists. If sampling results confirm the presence of hazardous materials, these materials may be removed and disposed offsite in accordance with the plans and procedures outlined in the DTSC-approved IMRAW or the NRC-approved License Termination Plan. If soil remediation in wetlands is necessary beyond what is specifically described in Table 7 and in the project description, PG&E will address these issues in a separate permitting action by the Commission. In addition, PG&E will conduct all project activities in accordance with the HBPP Hazardous Materials Business

Plan. This Plan includes an inventory and location map of hazardous materials onsite and an emergency response plan for hazardous materials incidents and is on file at the Humboldt County Department of Environmental Health. Furthermore, **Special Condition 1** requires that PG&E submit to the Executive Director for review and approval a Stormwater Management Plan to minimize impacts to wetlands and other habitat areas from stormwater runoff, and **Special Condition 3** requires PG&E to hire a designated project biologist to implement the protective measures included in the SMP. Implementation of the SMP will ensure that all construction areas, including remediation areas, install appropriate BMPs to ensure that contamination does not spread to adjacent areas through stormwater or other means. Finally, to address the unique sensitivity of wetland areas to contamination, the Commission is requiring **Special Condition 8** to ensure impacts to the Duck Pond and surrounding wetlands are avoided during the cleanup of ACM in PSRA 9. This condition requires PG&E to develop and submit to the Executive Director an asbestos removal plan that describes the extent of the contamination, protocols for training, containment, cleanup and disposal of ACM and a list of measures designed to protect adjacent wetlands from contamination.

With these measures proposed by PG&E, and as further conditioned, the Commission finds that the project will provide adequate protection against oil spills and the release of hazardous substances, will ensure necessary containment and cleanup should a spill occur, and, for the reasons stated above, will be consistent with Section 30232 of the Coastal Act.

G. HAZARDS

Coastal Act Section 30253(2) states, in part:

New development shall:

(1) Minimize risks to life and property in areas of high geologic, flood, and fire hazard.

(2) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs.

The project site is located on the shoreline of Humboldt Bay directly opposite the mouth of the Bay. Most of the site is relatively level and consist primarily of current or former wetlands and developed or landscaped areas. The coastal bluff on the site consists largely of a marine terrace deposit made up of poorly cemented sands and interbedded clays.

The site is subject to several geologic hazards, including seismic activity, coastal erosion, tsunamis, and tsunami runup, each of which is briefly summarized below. Following the summary, the Findings describe whether components of the proposed project conform to the requirements of Coastal Act Section 30253. Most of the review described in these Findings is based on the analysis conducted by the Commission's geologist and included in findings adopted by the Commission in its 2005 approval of PG&E's ISFSI project at this same site. This analysis was also applied in the Commission's 2010 approval of PG&E's major decommissioning activities. Exhibit 3 of those findings provides the Geotechnical Review Memorandum the Commission staff geologist prepared for the Commission's review of that project, including an assessment of documents from PG&E and others describing geologic hazards of the site and

area, and recommendations regarding the ISFSI's conformity to Coastal Act policies related to geologic hazard risks. That review is pertinent to this project because both the ISFSI and the current project involve the potential long-term presence of structures and engineered slopes that will be subject to the range of geologic hazards identified at the site.

SITE GEOLOGIC HAZARDS

The project site is near the southern end of the Cascadia Subduction Zone and near a location known as the "Mendocino Triple Junction" where three crustal plates converge – the Pacific Plate to the south; the Gorda Plate and its extension, the Juan de Fuca Plate to the north; and, the North American Plate to the east. Due to its location, the site is subject to substantial levels of geologic hazards, as described below.

Site seismic characteristics: The Humboldt Bay area has been subject to very large earthquakes of a magnitude of about 9.0 that occur roughly every 300 to 400 years,[3] with the last such earthquake occurring in 1700. The area has also experienced more than 120 earthquakes greater than magnitude 5 recorded within 100 miles of the site and 10 over magnitude 7. The immediate project area includes at least two active faults, with the Buhne Point Fault directly under the onsite bluff and surfacing about 300 feet to the southwest, and the Discharge Canal Fault about 500 feet further east. These two faults create a wedge, which is uplifted during fault movements, and which is largely responsible for the topography and elevation of Buhne Point. About two miles away is the surface trace of another fault – the Little Salmon Fault – that underlies the site and which is thought to rupture concurrently with the Cascadia Subduction Zone.

Earthquakes may be rated by the amount of ground shaking they cause.[4] The Humboldt Bay Power Plant has experienced six earthquakes with ground motion of greater than 0.10 g. The relationship between an earthquake's magnitude and its rate of ground shaking is not linear. For example, the two quakes producing the largest recorded ground motions at the site (0.30 g and 0.55 g) were of magnitude 5.3 and 5.4, respectively, while a recent magnitude 7.2 quake in June 2005 produced ground motion of less than 0.1 g. Additionally, earthquakes affect structures based on the frequency (in cycles per second) of the seismic waves they generate. Generally, high frequency shaking is more damaging to smaller, more rigid structures, and low frequency shaking is more damaging to larger or more flexible structures.

[3] An earthquake's magnitude is a measure of energy released by an earthquake, as expressed on a logarithmic scale measuring the horizontal displacement caused by an earthquake and detected on a seismograph. A magnitude 6 earthquake, for example, produces ten times the amount of ground shaking as a magnitude 5 earthquake.

[4] Ground shaking is a measure of the movement caused by the earthquake compared to the rate of acceleration caused by gravity. "Peak ground acceleration" (PGA) can be measured as a vertical or horizontal movement. For example, a PGA of 0.1 g means that the ground accelerated at one-tenth the rate of acceleration resulting from gravity (9.81 meters per second squared). PGA depends not only on the intensity or magnitude of an earthquake, but on the distance from the quake and on characteristics of the site – for example, ground acceleration will vary based on the depth and firmness of soil or bedrock at the site.

Liquefaction: Liquefaction can occur during ground shaking when loosely consolidated soils are saturated with water. Much of the site may be subject to liquefaction, as parts of it are underlain with relatively loose and poorly consolidated sands, silts, and organic materials, and a groundwater table that extends to within about three feet of the surface. However, the site's higher elevations are underlain with dense, stiff clays and sands of a type not subject to liquefaction, and tests PG&E conducted during its ISFSI project design showed that these soils were unlikely to liquefy. It is therefore likely that liquefaction may occur on parts of the lower site elevations, but the Commission concurs with both its staff geologist and PG&E that liquefaction will not occur in these higher elevation areas on site.

Slope stability: Most of the site, except for the Buhne Point bluff, is relatively level and does not raise concerns about slope stability. The bluff's north and west slopes are relatively steep, and those on the east and south are relatively gentle. During the ISFSI review, PG&E assessed slope stability under static conditions and determined the factor of safety to be 2.69 for the north side of the site (the coastal bluff) and 4.94 for the southern slope. For most coastal developments, a safety factor of at least 1.5 is considered necessary to ensure slope stability for the life of a proposed project. As discussed under "coastal erosion", however, this level of stability cannot be assured in perpetuity if coastal erosion impinges on the site.

The slope stability analyses indicated yield accelerations—the level of ground shaking needed to instigate landslides—to be 0.69g and 0.66g for the coastal bluff and the southern slope, respectively. Since these levels of ground shaking are less than the design basis earthquake, it is likely that the slopes will fail during such an earthquake. The amount of displacements of the slide masses was calculated using a Newmark sliding block approach to be about one foot during the design basis earthquake, which far exceeds the 50 mm (about two inches) usually considered acceptable for new construction.

Surface fault rupture: As noted above, several active faults underlie the site. The Little Salmon Fault, the Bay Entrance Fault and the Buhne Point fault all dip to the northeast and underlie the site at various depths. The surface trace of the Buhne Point fault lies only about 300 feet south of the ISFSI site, and the surface trace of the Discharge Canal fault lies about 500 feet to the north. Through movement on these faults, the wedge formed by these two faults is gradually uplifted and tilted. During ISFSI site design, PG&E conducted geotechnical studies that included trenching across the site. The trenches encountered sand-filled fractures, though none showed detectable offset and so were not considered active faults. PG&E proposed that future deformation from displacement on the Little Salmon fault will be minor tilting with no differential displacements. The Commission's staff geologist agreed that this is likely, but additionally believed it is possible that one or both of these faults will shift position and that future fault movement could occur at the site. It is quite common for faults to rupture along traces offset from previous ruptures, defining a "fault zone" rather than a single fault plane. This is, in fact, the case for these two faults, although the zone of fracturing does not appear to be more than a few tens of feet wide. It is also possible that future movement along these faults could result in a different style of faulting. Overall, the Commission concurred with the staff geologist's position that during the perpetual presence of the ISFSI at this site, it could be subjected to fault rupture.

Tsunami: The project site is within an area identified as subject to tsunami hazards. It is on the shoreline of Humboldt Bay and directly opposite the mouth of the Bay, so it could readily be subject to direct or indirect tsunami wave energy. As noted previously, the site has experienced a series of very large earthquakes, many of which resulted in tsunamis.

During the Commission's 2005 ISFSI review, PG&E calculated that the maximum tsunami runup resulting from a Cascadian Subduction Zone earthquake during Mean Higher High Water would be from about 23 to 38 feet, which would inundate the lower elevation portions of the site but would not affect the higher parts of the bluff, including the ISFSI site at 44 feet elevation. However, because the ISFSI is expected to remain in perpetuity, Commission staff requested PG&E additionally evaluate the longer-term potential for tsunami effects. PG&E applied the rate of tectonic uplift at Buhne Point (estimated at about 1.3 feet per 100 years) to several scenarios for anticipated rates of sea level rise. The analyses found that during the next several thousand years, overtopping of the site would be likely.

Coastal Erosion: Section 30253(2) of the Coastal Act requires, in part, that new development not require construction of protective devices that would substantially alter natural landforms along bluffs and cliffs. The proposed project site is in an area where past coastal erosion rates have been among the highest in the state, due in part to the site's location across from two jetties built to maintain the mouth of Humboldt Bay that direct wave energy towards the site. PG&E's assessment of historical shoreline retreat in the area between 1858 and 2000 shows a shoreline retreat of from about 1250 to 1500 feet. Since 1952, however, the site has been protected by a riprap revetment built to protect the power plant. The revetment was enlarged in 1956-57 and repaired in 1989 after being damaged in winter storms. The revetment has essentially halted retreat of the shoreline; however, the bluff above the revetment has continued to retreat, at a rate of about one to four inches per year, a rate likely to continue until it attains a stable slope angle.

Sea Level Rise: Due to its location on Humboldt Bay, the project site is extremely vulnerable to sea level rise. In California, north of Cape Mendocino, the rate of sea-level rise over the next 100 years is expected to range from 0.3 to 4.7 feet. In Humboldt Bay, subsidence compounds rates of sea level rise, making Humboldt Bay more susceptible to rising sea levels than anywhere else in California. Based on the methodology described in the Commission's Adopted Sea Level Rise Guidance, including incorporating the recommended local sea-level rise factor for the Humboldt Bay area of 0.16 inches per year, PG&E estimates the project sea-level rise at the site in 2030 and 2050 as follows:

Projection	2030		2050	
	cm	in	cm	In
Low range	5.6	2.2	12.7	5.0
Projected	9.9	3.9	21.8	8.6
High Range	31.8	12.5	63.0	24.8

Recent mapping of the Humboldt Bay Shoreline contributed to a model showing the mean annual maximum water level, and the 10-year and 100-year occurrence interval extreme water levels with a predicted 17.2 inches of sea level rise. PG&E used this model to show the potential effect of sea-level rise on the HBPP site. Although 17.2 inches does not represent the maximum

level of sea level rise possible at the site by 2050, it does provide a an estimate of the middle to high range of sea level rise expected at the site. Exhibit 17 shows of map of the site including the areas that will be inundated with 17.2 inches of sea level rise.

As shown in Exhibit 17, within thirty five years, if the middle to high range of sea level rise predictions are realized, the HBPP site will become a veritable island for part of the year. When coupled with King Tides and storm events, significant flooding is inevitable over much of the site, including development associated with the proposed project.

APPLYING SECTION 30253 TO SITE CHARACTERISTICS AND THE PROPOSED PROJECT

Unlike previous PG&E projects at the HBPP site, the primary purpose of the proposed project is to remove existing development and either restore the underlying landscape to a natural state, or repurpose the area for use by the HBGS. Although no new structures are proposed, several structures that were originally approved as temporary will be made permanent, and much of the project-related work involves significant ground disturbance and geotechnical engineering work that qualifies as new development under Section 30253 and has the potential to be affected by the site's aforementioned geologic hazards, including potential ground shaking, surface fault rupture, liquefaction, tsunami runup, and coastal erosion. In addition, it is likely that most of the project elements will remain in place for the foreseeable future, and thus, impacts from sea level rise must also be considered.

Ground shaking and surface fault rupture: The Commission found in its review of PG&E's ISFSI project that PG&E had designed the ISFSI to withstand the "maximum credible earthquake" at the site, and therefore found that project was consistent with Coastal Act Section 30253(1) with respect to the ground motion hazard. However, the ISFSI is one of the few structures in the world expected to withstand that force. The existing temporary structures and development (approved by the Commission under previous permits through conflict resolution) are not designed to withstand the expected levels of surface fault rupture at this site. Thus, the removal of these structures from Trailer City, Bayview Heights, HBPP Core area, Assembly Building and the Count Room areas will significantly decrease the risk to life and property associated with ground shaking and surface fault rupture.

PG&E proposes to keep as permanent some structures that were originally permitted as temporary. These structures include the Waste Management Building, the Count Room, and Alpha Road, all of which are proposed to be repurposed for continued use by either the ISFSI or the HBGS. Because these structures were approved as temporary structures that PG&E would now like to keep as permanent structures, they qualify as new development and are thus subject to the provisions Section 30253 of the Coastal Act.

The Waste Management Building is a 12,500 square-foot slab-on-grade metal building that is located in the HBPP Core Area. The Count Room is a 4000 square foot slab-on-grade metal building located just to the south west of the ISFSI. Both buildings were designed to meet the 2007 California Building Code, permitted by Humboldt County, and were sited based in part on a 2009 Soils Report prepared by a licensed Civil Engineer. Although the building code does incorporate a seismic hazard analysis into building design, these structures are not designed to

withstand the level of ground shaking and surface fault rupture associated with the "maximum" credible earthquake for local geologic conditions, and thus could be susceptible to damage if such an earthquake were to occur. However, in contrast to the ISFSI, damage to these structures does not have the potential to result in significant, widespread impacts to public health, water quality, biological and marine resources, air quality and other coastal resources.

Liquefaction: As noted above, liquefaction is not likely on the higher elevation parts of the project site though it could occur in the lower elevation areas. The liquefaction potential is likely less on those project site areas with paved surfaces and soils compacted over years of use, which is where most activities will occur. The proposed project involves the removal of structures from most of the lower elevation areas on site. These areas will then be returned to a natural state, either as uplands or wetlands, including the removal of compacted fill. Although this may increase the overall likelihood that these areas may experience liquefaction, the lack of structures significantly decreases any risk of damage due to liquefaction. The structures PG&E proposes to keep are sited on high-use areas with compacted soils which are less likely to experience liquefaction.

Tsunami runup: As noted previously, the entire site is subject to tsunami runup levels that could result from feasibly expected seismic activity at or near the site. Similar to the findings stated above, the removal of structures from the site represents a significant decrease in the risk to life and property associated with tsunamis and tsunami runup. Fewer structures correspond to less damage and less chance that components of any structure on the site could end up as tsunami debris. Planned restored areas could be damaged from wave impact, inundation, and debris associated with a tsunami, but these areas would be expected to recover in time. To further reduce risks associated with a tsunami, PG&E maintains a warning system and refuge areas for its employees, contractors, and members of the nearby King Salmon community. PG&E conducts periodic training and drills to ensure that all staff know how to respond in the event of an earthquake and/or tsunami.

Although the proposed project would lead to a decrease in the site's overall risk from tsunamis, the structures that PG&E proposes to remain onsite could be vulnerable to damage. The most likely impact would be damage sustained during flooding. It is also possible that building panels could become detached and washed further inland towards the HBGS or the surrounding open space and tidal marshes.

Coastal erosion and slope stability: During the relatively short construction period for the proposed project, coastal erosion is not expected to substantially affect the site; however, coastal erosion is likely to be significant over the long term and may result in the eventual need for a shoreline protective device to protect critical infrastructure such as the ISFSI. To address these concerns raised during the ISFSI project, the Commission required two special conditions which require PG&E to monitor and report to the Executive Director the rates of change on the bluff slopes and the rate of shoreline erosion along the project site.[5] These conditions are meant to

[5] **Special Condition 1** of CDP #E-05-001 states : "*Monitoring Bluff Slopes*: Prior to starting construction, the Permittee shall survey the bluff slopes adjacent to the ISFSI structure to establish the location of the bluff edge and shall set permanent monuments sufficiently far back from the bluff edge to allow their use during future surveys.

provide adequate time to plan for, design, and implement any necessary modifications to the site or to site storage and will also serve to benefit proposed project elements.

However, constructing a shoreline protection device to protect the ISFSI is a very different matter than constructing a similar device to protect an office building or a warehouse. When the ISFSI was approved, the Commission used conflict resolution to find the ISFSI consistent with Section 30253 of the Coastal Act. The same circumstances do not apply to the development associated with the proposed project. To be consistent with Section 30253, new development should be sited and designed appropriately to ensure geologic and engineering stability without the need for a shoreline protective device. Because the entire HBPP site is vulnerable to impacts from coastal erosion and bluff retreat, there are no alternative sites available for the proposed structures that would alleviate these impacts. Furthermore, given the location of the proposed structures inland from the bluff face, a more stable building design is not likely to have a significant effect on the structures vulnerability to erosion and retreat of the bluff.

Thereafter, and no less than every five years, the Permittee shall monitor those bluff slopes for sliding, ground movement, or other motion. Monitoring shall be done using the measures and monitoring devices described in the project's *Safety Analysis Report*. No later than June 30 of each subsequent fifth year, the Permittee shall submit a report, prepared by a licensed Civil Engineering Geologist, to the Executive Director describing the results of the monitoring. If during any five-year period, monitoring shows any horizontal or vertical movement of the bluff slope or edge of two feet or greater, monitoring and reporting shall then be done on an annual basis, with the report described above being submitted no later than June 30 of each year. If during five consecutive annual monitoring periods, movement of the bluff slope and edge totals less than two feet, monitoring and reporting may return to a five-year period. The Permittee shall notify County staff and the Executive Director immediately in the event of slope failure or movement that may indicate imminent slope failure. If monitoring results for any reporting period indicate slope movement that may require additional measures to protect the development, the Permittee shall submit a coastal development permit application or request for an amendment to this permit."

Special Condition 2 of CDP #E-05-001 states: "*Monitoring Shoreline Erosion*: Prior to starting construction, the Permittee shall survey the shoreline of the ISFSI site to establish the location of the existing riprap and the lower toe of the bluff. Thereafter, and no less than every five years, the Permittee shall conduct surveys of the shoreline and lower toe of the bluff of the ISFSI site. Surveys shall be conducted by a licensed Surveyor or Civil Engineer. Each survey shall be performed in the early spring when the beach level is lowest and the lower bluff face is most exposed, or as close to that time as is feasible. Each survey shall record the position of the lower toe of the bluff using conventional survey techniques (total station, rod and level, plane table, etc.), differential Global Positioning System (GPS), photogrammetry (with current ortho-rectified aerial photographs), by ground Light Detection and Ranging (LIDAR), or other comparable technique. Survey techniques used shall be consistent throughout the survey period or shall allow consistent comparison of yearly data. Survey measurements shall be accurate within 0.5' horizontal and 1.0' vertical.

The Permittee shall report the results of each survey to the Executive Director by June 30 of every fifth year. Each report shall include narrative and mapped analysis of the survey data, a determination of the average retreat rate for the full survey area, identification of any locations where the bluff change rate is more than two standard deviations from the average. Bluff change shall be calculated at 50' intervals (or smaller) to determine the average retreat, standard deviation and to identify areas of outlier retreat rates.

If monitoring results for any survey indicate the development may be threatened by coastal erosion in less than five years, the Permittee shall submit within sixty days of the annual survey report a coastal development permit application or request for an amendment to this permit to relocate the ISFSI or other project components as needed."

To partially address concerns with erosion and bluff retreat, the proposed project includes a plan to stabilize the southern slope of the coastal bluff. This hillside currently has a slope greater than 4:1 (horizontal:vertical), making it susceptible to erosion and instability. Under the proposed project, PG&E will lessen the bluff slope to 4:1 or less using clean spoils from other parts of the site. The final slope will be adjusted to maintain a balanced cut and fill scenario on site. A licensed California Geologist will evaluate the final slope for overall stability once the material proposed for slope construction has been identified and quantified. In the unlikely event that significantly more spoils than expected are deposited on the slope, it may be necessary to further stabilize the bank using a mechanically stabilized earth (MSE) wall or a compacted engineered fill retaining slope. Both stabilization options provide a vegetated face and would decrease the likelihood that the slope fails.

Sea Level Rise: As the sea level in Humboldt Bay rises, the magnitude of the impacts described above resulting from exposure to coastal hazards is likely to increase across the HBPP site. In addition, flooding and other impacts associated with coastal storms will also occur more frequently and will reach areas at higher elevations. New wetland areas included in the proposed project will buffer the impact of large storms on the site to some extent. However, sometime between 2050 and 2100, these areas are likely to be inundated as well.

CONCLUSION

By removing the vast majority of temporary structures from the site, PG&E will reduce the potential risks associated with the geologic hazards discussed above. In addition, restoring approximately 4 acres of the site to wetlands and 9 acres to natural upland areas will increase the resiliency of the site to impacts associated with sea level rise. However, newly permanent structures, including the Waste Management Building, the Count Room and Alpha Road, that will remain onsite are vulnerable to impacts associated with ground shaking, surface rupture, tsunami and tsunami runup, coastal erosion and bluff retreat and sea level rise. Exposure to geologic hazards could result in damage or destruction to these structures or create the need for a future shoreline protective device to protect them. To address these concerns, **Special Condition 10** requires that PG&E acknowledges the nature of the hazards which exist on the site and that may adversely affect the stability or safety of the development included under the proposed project, and will assume liability for these risks, and remove structures at risk. Furthermore, **Special Condition 11** requires that PG&E waive the right to build a future shoreline protective device to protect new development authorized by this Coastal Development Permit. Finally, **Special Condition 8** requires PG&E to record a deed restriction against the site that would put any future owner on notice of the existing hazards. With these conditions, the Commission finds that risks from geologic hazards will be minimized, and that exposure to these hazards will not lead to the construction of a shoreline protective device. The Commission therefore concludes that, as conditioned, the proposed project is consistent with Coastal Act Section 30253.

H. PUBLIC ACCESS AND RECREATION

Coastal Act Section 30211 states:

> *Development shall not interfere with the public's right of access to the sea where acquired through use or legislative authorization, including, but not limited to, the use of dry sand and rocky coastal beaches to the first line of terrestrial vegetation.*

Coastal Act Section 30212(a) states:

> *Public access from the nearest public roadway to the shoreline and along the coast shall be provided in new development projects except where: (1) It is inconsistent with public safety, military security needs, or the protection of fragile coastal resources, (2) Adequate access exists nearby, or, (3) Agriculture would be adversely affected. Dedicated accessway shall not be required to be opened to public use until a public agency or private association agrees to accept responsibility for maintenance and liability of the accessway.*

Coastal Act Section 30221 states:

> *Oceanfront land suitable for recreational use shall be protected for recreational use and development unless present and foreseeable future demand for public or commercial recreational activities that could be accommodated on the property is already adequately provided for in the area.*

Coastal Act policies generally require that development located adjacent to the shoreline in an area with ongoing public use not interfere with that use and provide access to the shoreline. Public access to the Humboldt Bay shoreline is currently available adjacent to the power plant site. Although the HBPP site itself is secure and not open to the public, the Commission required PG&E to improve and protect public access through a deed restriction for an existing pathway along the shoreline as part of its approval of PG&E's ISFSI project. This pathway primarily provides horizontal access along the shoreline, but allows vertical access across the riprap lining the shore. The pathway is used primarily for low-intensity recreational uses, such as saltwater fishing, bird and wildlife watching, and scenic enjoyment of the Bay. This section of shoreline is described in the Redwood Community Action Agency's 2001 *Humboldt Bay Trails Feasibility Study* as an important link in a planned system of trails around Humboldt Bay. The trail adjacent to the power plant would connect with trails planned in King Salmon to the west and to the railroad right-of-way to the south and east of the plant.

Over the short term, the proposed project could result in minor impacts to public access for members of the public using the Shoreline Trail. Although most project-related activities will occur within the HBPP fenced area that is not open to the public, a few activities will occur outside this area. Activities to recontour Bayview Heights and Trailer City may occasionally require flag-person control on the Shoreline Trail for short periods of time. In addition, noise from construction activities will be audible for the twelve month construction period. This disturbance, however, represents a decrease from the current level of disturbance associated with decommissioning activities and thus will not result in a change to the public's use or enjoyment of the trail. Construction-related impacts will be temporary, short-term and insignificant.

Project-related traffic to and from the site also has the potential to affect public access to the adjacent shoreline during the construction phase. PG&E personnel and project-related traffic travel to the HBPP site via Highway 101 and King Salmon Avenue, both of which are also routes used for public access to the shoreline. PG&E estimates that the proposed project will involve a maximum of 150 persons per day in addition to the daily traffic of approximately 50 persons for the HBGS and the ISFSI, for a total of 200 persons arriving onsite per day. In addition, PG&E estimates the need for a maximum of 10 truck trips per day for a period of 80 days to haul materials on and off the project site. This level of traffic represents a decrease from the maximum of 500 persons and 30 truck trips per day experienced during decommissioning and HBGS construction. No traffic-related issues have been reported throughout the decommissioning process. Thus, because traffic levels area expected to be lower for the proposed project, impacts to public access due to increased project-related traffic are unlikely.

In addition to project-related traffic described above, the King Salmon Avenue Shoulder Widening project component has the potential to inhibit public access along King Salmon Ave. PG&E will address concerns related to traffic control on King Salmon Ave in a Traffic Control Plan that will be prepared for Humboldt County's review and approval. The plan will incorporate the following measures:

- Phase I of the project will use advanced warning signs, flaggers, and delineators to facilitate traffic flow during working hours. The roadway will be stabilized at the end of each work day.
- Phase II will require the installation of a temporary one-way, traffic signal at each end of the work area. These traffic control measures will be in place for the duration of Phase II. In addition, crash cushions, advanced warning signs and delineators will be used to control traffic.
- Phase III will require the use of advanced warning signs, flaggers, and delineators to facilitate traffic flow during working hours.

To further ensure that the King Salmon Avenue Shoulder Widening project component is consistent with the Coastal Act's public access policies, and that traffic impacts are timed to minimize impacts from the project as a whole, **Special Condition 12** requires that PG&E submit to the Executive Director for review and approval a Traffic Control Plan that incorporates the elements described above and also includes a final construction timeline that takes into consideration the timing and volume of personnel and truck trips to the HBPP site for other project-related activities, and that describes how impacts to the public will be minimized during construction of this project component. With this measure in place, and given the relatively short duration of this project component (i.e., 4 months), the Commission finds that impacts to public access from the King Salmon Avenue Shoulder Widening project component will be temporary and short-term.

Over the long term, the proposed project will enhance the public's enjoyment of the Shoreline Trail and the Bayfront. Completion of this project will represent the end of close to ten years of near-constant noise and construction associated with decommissioning activities. The cessation of construction noise and disturbance will result in an increase in public use and enjoyment of

the Shoreline Trail. In addition, the removal of existing structures and the restoration of several portions of the site to natural upland and wetland areas will enhance the public's visual experience of the Bayfront. Newly restored areas will provide habitat for a variety of wildlife, resulting in expanded wildlife viewing opportunities. Therefore, the proposed project will result in an improvement to public access and recreation in the vicinity of the site.

For the reasons described above, the Commission finds that as conditioned, the proposed project's short-term impacts to public access and recreation will be temporary and insignificant, and that in the long-term, the project will improve public access and recreation opportunities near the site. The Commission thus finds the project consistent with Coastal Act Sections 30211, 30212(a), and 30221.

I. ARCHAEOLOGICAL AND PALEONTOLOGICAL RESOURCES

Coastal Act Section 30244 states:

> *Where development would adversely impact archaeological or paleontological resources by the State Historic Preservation Officer, reasonable mitigation measures shall be required.*

The project site, located on the resource-rich shoreline of Humboldt Bay, has the potential to contain archaeological remains. Although an April 2006 archaeological survey at the site did not identify any such resources, the potential exists for previously unrecorded archeological resources to be located beneath power plant structures or beneath fill placed on the site during power plant construction. Specifically, PG&E recognizes that the following areas contain or may contain a culturally sensitive soil horizon or may contain portions of a known historical refuse deposit:

- Charlie Road
- ISFSI Support Stormwater Basin
- Portions of Bayview Heights
- Trailer City
- Duck pond
- Assembly Building Parking lot
- Culvert replacement at Buhne Point Wetland Preserve
- MIT-1, MIT-6 and MIT-7

In recognition of the potential presence of these resources, PG&E will implement the existing Archeological Resources Protection Plan. This plan was developed in compliance with Special Condition 4 of CDP E-09-010 and approved by the Executive Director in May 2010. To ensure any potential archeological resources on site are protected, this plan describes how PG&E will (1) implement a construction worker training program to help identify cultural resources; (2) conduct monitoring to identify potential resources that may be identified during clearing, trenching, and excavation activities; (3) retain a cultural resources specialist on call to investigate any potential cultural resources found during project activities; and (4) implement procedures for halting construction and evaluating resources should resources be discovered. A supplement to

this plan was submitted in September 2013 that provided results from a study conducted by the Commission-approved cultural resource monitor to identify areas affected by decommissioning that have a higher likelihood of containing cultural resources. This plan includes an appropriate monitoring approach to ensure that archeological and cultural resources are protected. However, the plan was developed for the HBPP decommissioning project and does not cover all areas included under the proposed project. To ensure consistency with Section 30244 requirements for the proposed project, **Special Condition 13** requires PG&E to submit a revised Archeological Resources Protection Plan to the Executive Director for review and approval that expands the scope of the plan to cover all areas included under the proposed project, includes additional information on portions of the site that may have a higher likelihood to contain cultural resources, and incorporates a requirement to submit a final monitoring report to the Executive Director at the conclusion of all monitoring activities.

With the inclusion of **Special Condition 13,** the Commission finds that the proposed project would protect cultural and archeological resources and be consistent with Coastal Act Section 30244.

J. CALIFORNIA ENVIRONMENTAL QUALITY ACT

The Humboldt Bay Harbor, Recreation and Conservation District (HBHRCD) served as the lead agency for the project for CEQA purposes. On August 27, 2015, the HBHRCD approved a Mitigated Negative Declaration (MND) and a permit for the proposed project.

Section 13096 of the Commission's administrative regulations requires Commission approval of coastal development permit applications to be supported by a finding showing the application, as modified by any conditions of approval, to be consistent with any applicable requirements of the California Environmental Quality Act ("CEQA"). Section 21080.5(d)(2)(A) of CEQA prohibits approval of a proposed development if there are feasible alternatives or feasible mitigation measures available that would substantially lessen any significant impacts that the activity may have on the environment.

The Commission incorporates its findings on Coastal Act consistency at this point as if set forth in full. As discussed above, the proposed project has been conditioned to be consistent with the policies of the Coastal Act. As specifically discussed in these above findings, mitigation measures that will minimize or avoid all significant adverse environmental impacts have been required. As conditioned, there are no other feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse impacts which the activity may have on the environment. Therefore, the Commission finds that the proposed project, as conditioned, is consistent with the requirements of the Coastal Act to conform to CEQA.

APPENDIX A: SUBSTANTIVE FILE DOCUMENTS

California Coastal Commission Findings for CDPs E-07-002, E-07-005, E-08-003, E-08-008, E-09-005, E-09-010 and 9-13-0621.

Email communications to Kate Huckelbridge from Kris Vardas, Susan Strachan, Doug Davey and Emily Teraoka between 7/25/2014 and 3/25/2016.

Humboldt Bay Harbor, Recreation and Conservation District, Mitigated Negative Declaration, approved 8/27/2015.

PG&E, Inc., Coastal Development Permit Application and accompanying documents. Originally submitted April 30, 2015 and supplemented on 7/9/15, 12/18/15 and 2/12/16.

APPENDIX B

FEBRUARY 2016

Biological Mitigation and Monitoring Plan for the Humboldt Bay Power Plant Final Site Restoration Project - Revised

PREPARED FOR

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Suggested citation:
Stillwater Sciences. 2016. Biological Mitigation and Monitoring Plan for the Humboldt Bay Power Plant Final Site Restoration Project, Humboldt County, California. Prepared by Stillwater Sciences, Arcata, California for Pacific Gas and Electric Company, Eureka, California.

Cover photos: Photos taken by Stillwater Sciences 2013-2015. Mit-B pond (top left), ruby-crowned kinglet in Rest-1 (top right), Duck Pond (bottom right), and Rest-1 (bottom left).

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1 INTRODUCTION AND BACKGROUND

1.1 Project Description and Proponent

Pacific Gas and Electric Company (PG&E) is decommissioning the Humboldt Bay Power Plant (HBPP), a 75-acre (ac) site near King Salmon, Humboldt County, California. The HBPP consisted of two steam generating units (Units 1 and 2) and a boiling water nuclear reactor (Unit 3). PG&E operated the HBPP between 1956 and 2010. In 2010, the Humboldt Bay Generating Station (HBGS), located on the same property, began operation to replace the former generation capacity of Units 1, 2, and 3. PG&E has prepared a Final Site Restoration (FSR) plan which includes the following components:

- Reconfigure those portions of the site that are needed for ongoing and future utility operational uses of the property.
- Implement biological resources mitigation prescribed in previous California Coastal Commission (CCC) permit proceedings or mitigation for impacts related to implementing the FSR plan, such as those resulting from the creation of new wetlands adjacent to existing wetlands.
- Restore to pre-existing conditions those portions of the property that are not identified for ongoing utility operations as described in previous CCC permits.
- Reroute or repair drainage, establish new stormwater detention basins, and grade the site to maximize implementation of Low Impact Development (LID) measures to minimize potential offsite stormwater impacts.
- Reroute, repair, or remove communications and other infrastructure on property as needed.
- Remediate contaminated soil in areas that involve FSR construction and that were not previously permitted by the CCC and are not in wetlands. (Soil remediation in any wetland areas would be addressed under a separate plan.)
- Construct roadway improvements along King Salmon Avenue to increase the shoulder widths between the travel lanes and embankment slope to improve public safety.

Implementation of the FSR plan will hereafter be referred to as the Project.

1.2 Project Location

The HBPP property is located at 1000 King Salmon Avenue in King Salmon, CA (Figure 1). It is located in unincorporated Humboldt County approximately 3 miles south of the City of Eureka. The HBPP property is bordered to the north by Humboldt Bay, to the south and east by diked former salt marsh, and to the west by the residential and commercial community of King Salmon. The survey area is located in Section 8 of Township 4 North, Range 1 West, of the Fields Landing, California, U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle at approximate latitude 40°44’28.77”N and longitude 124°12’35.07”W. The property area ranges from approximately -10 to 64 feet (ft) above mean sea level. It can be accessed via the King Salmon Avenue exit off of U.S. Highway 101, heading west on King Salmon Avenue, and turning right into the HBPP Bravo Road entrance. Access is by permission of PG&E HBPP security only.

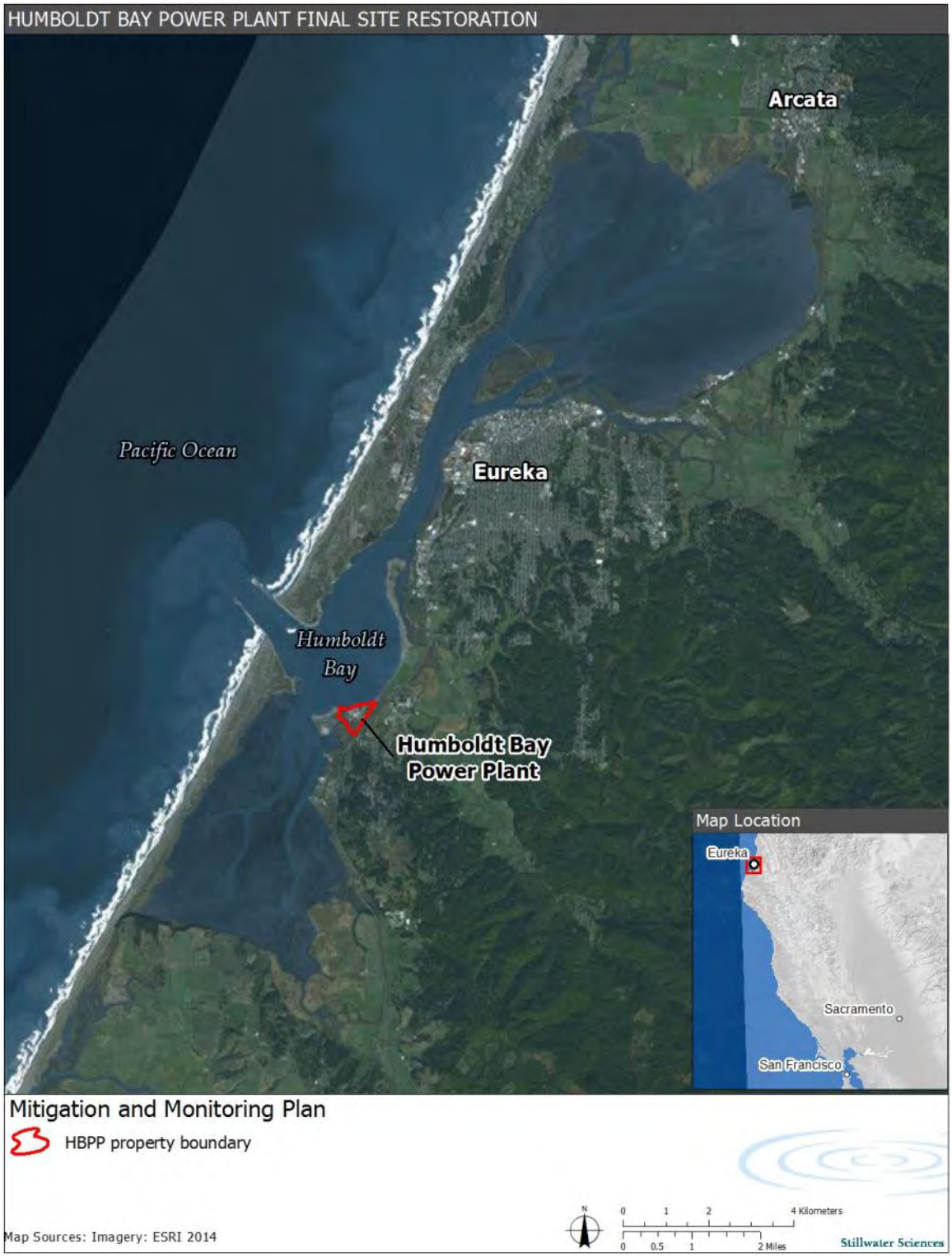

Figure 1. Project location.

1.3 Purpose of this Plan

Portions of this Project have the potential to impact jurisdictional wetlands and special-status species, requiring mitigation measures. In addition, previous permits obtained for ongoing decommissioning work as well as construction of HBGS required restoration of certain areas following decommissioning and the incorporation of Low Impact Design (LID) into the final site design. The purpose of this mitigation and monitoring plan is to identify the amount of jurisdictional wetlands that requires mitigation; identify restoration areas and potential locations available for completing the existing mitigation and restoration requirements; outline restoration area, wetland mitigation area, and stormwater detention basin conceptual designs and implementation steps; define success criteria; describe the monitoring and reporting protocols; and describe the maintenance and adaptive management plans. This plan will also identify best management practices (BMPs) to be used during FSR plan implementation that will protect existing wetlands and minimize impacts to special-status species.

2 IMPACTS ON SPECIAL-STATUS HABITATS AND SPECIES

A full impact analysis on species and habitats is provided in the Project Initial Study Mitigated Negative Declaration (Humboldt Bay Harbor, Recreation, and Conservation District [HBHRCD] 2015), and is summarized below.

2.1 Wetlands

A wetland delineation was conducted in 2015 covering the potential Project impact areas (Stillwater Sciences 2015). The area of potential Project impact (wetland survey area) contains 2.85 ac of Waters of the U.S. under the jurisdiction of the United States Army Corps of Engineers (USACE) (which are also considered Waters of the State), 3.16 ac of wetlands under the jurisdiction of both the USACE and CCC (USACE jurisdictional wetlands are, by definition, also under the jurisdiction of the CCC), and an additional 0.16 ac of wetlands solely under the jurisdictional of the CCC. These waters and wetlands are summarized in Table 1 and mapped in Figure 2. Several of these features have been revised from previous USACE- and CCC-verified delineations.

Table 1. Waters and wetlands identified in the survey area.

Description	Acreage
Waters of the U.S.	
Waters[1]	
Buhne Slough	0.20
Humboldt Bay	0.14
Fisherman's Channel	0.07
Intake Canal	2.21
Intermittently flowing drainage ditches	0.23
Wetlands Adjacent to Waters[2]	
Estuarine persistent emergent wetlands	1.00
Semi-permanently flooded palustrine persistent emergent wetlands	1.84
Seasonally flooded palustrine persistent emergent wetlands	0.32
Additional CCC Jurisdictional Wetlands	
One-parameter wetlands	0.16

[1] Buhne Slough, Humboldt Bay, Fisherman's Channel, Intake Canal and the intermittently flowing drainage ditches are also considered waters of the State

[2] Also considered CCC Jurisdictional Wetlands

The proposed FSR plan includes actions that would result in new impacts on existing wetlands. Project impacts on the jurisdictional wetlands, proposed areal mitigation ratios, and proposed mitigation locations are described below and summarized in Section 3.3. Additional detail is available in the Project's Initial Study Mitigated Declaration (HBHRCD 2015).

2.1.1 Alpha Road

Alpha Road will be paved at the existing width, except at the entrance at King Salmon Avenue, and the existing HBGS guard shack will be maintained. A re-alignment of the Alpha Road

intersection with King Salmon Avenue is designed to meet a Humboldt County road safety standard that requires a 90-degree intersection angle for permanent roadways. The new proposed road section will require fill to bring it to grade. The installation of a mechanically stabilized earth (MSE) wall on the Buhne Slough side is proposed to minimize the footprint and potential impacts on the adjacent wetland. In addition, an existing culvert will be replaced at the north end of Alpha Road to maintain and enhance ecological and hydrological connectivity between the Intake Canal and Buhne Slough.

There will be permanent impacts on approximately 0.001 ac and temporary impacts on 0.05 ac of wetlands under the jurisdiction of both the CCC and USACE. Permanent impacts on wetlands will be mitigated for at a 4:1 ratio by creating 0.004 ac of new wetland habitat in the Shoreline Wetland mitigation area (see Section 4.5). Temporary impacts will be mitigated for by enhancing the existing vegetation in Preserve Fringe area (see Section 4.7).

2.1.2 Intake Canal and Buhne Point Wetland Preserve

The Preserve currently consists of 6.1 ac of wetland and upland habitat. Most of the area has been established for a number of years and is composed of a mosaic of coastal grassland, riparian scrub/forest, and saltwater and freshwater marsh. Tidal flow is maintained to the saltwater portion of the Preserve via an inflow-outflow pipe connecting to the Intake Canal. This pipe is in very poor condition. The up-gradient side of the culvert is partially obstructed with woody debris and there is significant bank erosion at the broken culvert outlet on the down-gradient side. Without replacement, the culvert would likely fail and tidal flow to the Preserve would be lost.

This culvert will be replaced and an adjustable weir (and/or tide gate) structure will be installed to control flow and enhance ecological function and connectivity between the Intake Canal and the Preserve. The existing culvert between the Frog Pond stormwater detention basin and the Intake Canal will also be removed. In addition, the pedestrian bridge and its concrete footings will be removed as part of the FSR plan.

Impacts on wetlands in the Preserve and adjacent to the Intake Canal, including northern coastal salt marsh and eelgrass habitat, will be minimized to the extent possibly by implementing avoidance and mitigation measures. Culvert replacement and removal would be done in a manner that avoids impacts on the waters of the Intake Canal and would not require sheet piling or other water control structures or in-water work. Removal and replacement of the portions of the culverts connected to the Intake Canal would be executed during a single period of low tide when the water is below the level of the culvert and with controls to ensure that sediment does not enter the canal waters. Removal of the pedestrian bridge and concrete footings will be conducted by a crane from the shore. Appropriate BMPs such as silt curtains will be installed around the foundations to protect the Intake Canal from impacts on water quality. The area left by removing the two approximately 10-ft-by-5-ft concrete footings will be restored to match the surrounding topography and planted with native vegetation (described below in Section 4.13).

Excavation of the fill adjacent to the culverts has the potential to temporarily impact wetlands, including northern coastal salt marsh. However, this impact will be minimized to the extent possible and will be temporary. Restoration of impacted areas is described below in Section 4.13. Temporary and temporal impacts will be mitigated for by enhancing the existing vegetation in Preserve Fringe Area (see Section 4.7).

Figure 2. Wetland survey area and delineated waters and wetlands.

2.1.3 Bayview Heights

Two wetlands (0.095 and 0.003 ac) and one intermittently flowing drainage ditch (0.017 ac) under the jurisdiction of the CCC will be impacted by the proposed grading at Bayview Heights. These wetlands are maintained in their current state through the input of stormwater from the ISFSI and discharge into the existing stormwater system. Removal of the stormwater system and grading in this area will permanently remove the wetlands.

The loss of these manmade stormwater conveyance features will be mitigated for at a 2:1 ratio by creating 0.23 ac of new wetland habitat in the Mit-7 mitigation area (see Section 4.1).

2.1.4 Duck Pond

The area to the east of Trailer City is called the Duck Pond and consists of a semi-freshwater or brackish marsh with native vegetation a few feet in elevation above the surrounding tidally influenced salt marsh. Although not tidal, it shows some evidence of saltwater intrusion, including halophytic plants. No changes are planned for this area as part of the FSR plan and it will remain a natural area. The Shoreline Wetland mitigation area will be hydraulically connected with this area.

The western/southwestern edge of the Duck Pond will be minimally impacted when the upland boundary is recontoured to connect to the Shoreline Wetland mitigation area. There is also potential for additional temporary impacts associated with the remediation of the asbestos disposal area adjacent to the Duck Pond (see Section 2.1.4.1 below). Restoration of impacted areas is described below in Section 4.13. Temporary and temporal impacts will be mitigated for by enhancing the existing vegetation in Buhne Point Preserve Fringe Area (see Section 4.7).

2.1.4.1 Asbestos Disposal Area

An area with buried asbestos-containing material (ACM) is located on PG&E property between Trailer City and the Duck Pond wetland. This area contains asbestos-cement board pieces that were buried in the 1970s. The area is currently overgrown with upland vegetation and the exact extent of the buried ACM is unknown. Based on borings conducted earlier in 2015, it is believed that the ACM is located within a 0.19-acre area depicted in Figure 3. An additional survey will be conducted in 2016 to confirm the lateral extent of the ACM area.

Removal of the ACM and restoration of the area will occur as part of FSR plan implementation. A certified asbestos contractor will perform the ACM removal and site remediation activities. The removal activities may require air monitoring and other health and safety measures depending on the condition of the asbestos panels. The ACM will be disposed at a properly licensed waste disposal facility.

Instead of being restored to upland (i.e., the existing condition), the ACM removal work area and the adjacent upland areas will be graded to match the elevation in the Shoreline Wetland Mitigation Area and Duck Pond (as appropriate) and converted to wetland as part of the Shoreline Wetland Mitigation area. Invasive weeds and some upland plants will be removed and the area will be replanted with native wetland plant species (e.g., *Juncus lesceurii* [San Francisco rush] and *Juncus effuses* [soft rush]) to allow for further connectivity between the Shoreline Wetland Mitigation Area and the Duck Pond.

Figure 3. Asbestos-containing material (ACM) removal work area.

2.1.5 Frog Pond stormwater detention basin

The area between the Assembly Building, Waste Management Building, and Bravo Road is a basin that collects stormwater runoff from the Waste Management Building, other portions of Buhne Point Hill, and Bravo Road. Collected stormwater in this area is currently released with minimal retention from the low point of the basin into the Intake Canal through a 12-in pipe controlled by a gate valve (currently left open) on the up-gradient side and a "duck bill" valve on the down-gradient side. Also located in the basin is an elevated concrete vault containing a sewer lift station.

The new ISFSI Entrance Road is proposed to be built through a portion of the existing stormwater detention basin. Other impacts on this area will involve grading and replanting to improve stormwater retention and treatment and the removal and management for invasive species. Access to and water quality protection from the sewer lift station will be improved by filling the area around it to the current elevation. The culvert connecting to the Intake Canal will be removed. Impacts on the Intake Canal wetlands and waters from culvert replacement are discussed below in Section 4.13.

There will be permanent impacts on 0.295 ac of USACE/CCC wetlands as a result of the basin grading and culvert replacement. These will be mitigated for at a 2:1 ratio by creating 0.590 ac of new wetland habitat in the Shoreline Wetland mitigation area (see Section 4.5).

2.1.6 King Salmon Avenue wetlands

One 0.023-ac intermittently flowing drainage ditch (considered both Waters of the U.S. and Waters of the State) and one 0.040-ac wetland under the jurisdiction of the CCC will be temporarily impacted by the construction of Mit-7 (described below in Section 4.1). This mitigation area will be connected to the existing wetlands. Impacts will be minimized to the extent possible and will be temporary. Restoration of impacted areas is described below in Section 4.13. Temporary impacts will be mitigated for by enhancing the existing vegetation in the King Salmon Avenue wetland and connecting it to the larger wetlands in the Preserve via Mit-7 (see Section 4.1).

The remainder of the wetlands adjacent to King Salmon Avenue will not be impacted by Project activities. The King Salmon Avenue public safety improvements have been designed to avoid the existing wetlands located adjacent to King Salmon Avenue. All fill that will be used to stabilize the road embankments for the shoulder widening will be kept to the existing road prism; no fill will enter the adjacent wetlands.

2.2 Plants

Several special-status plant species have the potential to be found in the region: sea-watch (*Angelica lucida*), coastal marsh milk-vetch (*Astragalus pycnostachyus* var. *pycnostachyus*), false gray horsehair lichen (*Bryoria pseudocapillaris*), twisted horsehair lichen (*Bryoria spiralifera*), bristle-stalked sedge (*Carex leptalea*), Lyngbye's sedge (*Carex lyngbyei*), northern meadow sedge (*Carex praticola*), Oregon coast paintbrush (*Castilleja affinis* ssp. *litoralis*), Humboldt Bay owl's-clover (*Castilleja ambigua* ssp. *humboldtiensis*), Point Reyes bird's-beak (*Chloropyron maritimum* ssp. *palustre*), Whitney's farewell-to-spring (*Clarkia amoena* ssp. *whitneyi*), coast fawn lily (*Erythronium revolutum*), minute pocket moss (*Fissidens pauperculus*), Pacific gilia (*Gilia capitata* ssp. *pacifica*), short-leaved evax (*Hesperevax sparsiflora* var. *brevifolia*), marsh pea (*Lathyrus palustris*), beach layia (*Layia carnosa*), Kellogg's lily (*Lilium kelloggii*), western

lily (*Lilium occidentale*), heart-leaved twayblade (*Listera cordata* var. *nephrophylla*), leafy-stemmed miterwort (*Mitellastra caulescens*), ghost-pipe (*Monotropa uniflora*), Howell's montia (*Montia howellii*), Wolf's evening-primrose (*Oenothera wolfii*), California pinefoot (*Pityopus californica*), nodding semaphore grass (*Pleuropogon refractus*), Oregon polemonium (*Polemonium carneum*), dwarf alkali grass (*Puccinellia pumila*), trailing black currant (*Ribes laxiflorum*), maple-leaved checkerbloom (*Sidalcea malachroides*), Siskiyou checkerbloom (*Sidalcea malviflora* ssp. *patula*), coast checkerbloom (*Sidalcea oregana* ssp. *eximia*), western sand-spurrey (*Spergularia canadensis* var. *occidentalis*), Methuselah's beard lichen (*Usnea longissima*), and alpine marsh violet (*Viola palustris*).

Protocol-level special-status plant surveys were conducted in 2015 to identify whether any special-status plants represent in the Project area as well as to evaluate any potential effects on known occurrences. An estimated 250 individuals of sea-watch were documented within the Project site along the banks of the Intake Canal and in Duck Pond (Figure 4). Sea-watch was also documented in the Buhne Point Wetlands Preserve (Preserve), along Buhne Slough, in Wren Marsh, and across King Salmon Avenue from the HBPP property. Lyngbye's sedge was documented in the Preserve, and Point Reyes bird's-beak was documented in the salt marsh alongside the Fisherman's Channel across King Salmon Avenue from the HBPP property. All other special-status plants with the potential to be found in the region have not been documented to occur and have a low likelihood of occurrence within the Project site except for Humboldt Bay owl's-clove,r which has a moderate likelihood of occurrence due to nearby known populations.

Sea-watch (*Angelica lucida*) is a native perennial herb in the Apiaceae family that has a California Rare Plant Rank (CRPR) of 4.2 (i.e., plants of limited distribution; moderately threated in California) (CNPS 2015). It is limited to the North Coast, specifically to Humboldt, Mendocino, and Del Norte counties from 0 to 50 m (0 to 164 ft) above sea level (Baldwin et al. 2011). Sea-watch typically occurs in coastal bluff scrub, coastal dunes, coastal scrub, and coastal salt marshes and blooms from May to September (CNPS 2015). In the survey area, plants commonly associated with sea-watch include coyote brush *(Baccharis pilularis*), seaside aster *(Symphyotrichum chilense*), and San Francisco rush (*Juncus lescurii*).

The sea-watch individuals along the banks of the Intake Canal and in Duck Pond have the potential to be impacted by Project activities. Sea-watch in the Intake Canal is outside of the culvert replacement and removal impact areas and not likely to be impacted by Project activities. Project impacts on the Duck Pond are anticipated to be minimal and are not anticipated to occur within 10 m (33 ft) of the documented sea-watch population. Consequently, impacts on sea-watch can be avoided or kept to a less than significant level by the implementation of mitigation measures and BMPs (e.g., minimizing construction footprint, protecting adjacent wetlands with silt curtains, and working during dry periods).

Figure 4. Special-status plants documents in the HBPP Project area during 2015 surveys.

Impact areas will be resurveyed prior to construction. If sea-watch populations have expanded into the impact areas at the time of construction, a plan to relocate the potentially impacted plants to appropriate habitats elsewhere on site (e.g., the Preserve or Wren Marsh) will be developed and implemented in coordination with appropriate permitting agencies. The implementation of the measures described will reduce the future potential impact on this species to a less than significant level.

Lyngbye's sedge is a perennial rhizomatous herb in the Cyperaceae family that has a CRPR of 2B.2 (i.e., plants rare, threatened, or endangered in California, but more common elsewhere; fairly threatened in California). It is limited to the North and Central Coast from 0 to 10 m (0–33 ft) elevation (Baldwin et al. 2011). Lyngbye's sedge occurs in brackish or freshwater marshes and swamps and blooms from April through August (CNPS 2015). Approximately 8 individuals have been documented along the margins of Mit-B pond within the Preserve of the HBPP (Figure 4). Because this location is outside of the FSR impact area, no impacts to this species are anticipated from FSR activities.

Point Reyes bird's-beak is a hemiparasitic annual herb in the Orobanchaceae family that has a CRPR of 1B.2 (i.e., plants rare, threatened, or endangered in California and elsewhere; fairly threatened in California). It is limited to the North and Central Coast specifically Humboldt, Marin, and Sonoma counties from 0 to 10 m (0–33 ft) elevation (Baldwin et al. 2011). It occurs in coastal salt marshes and swamps and blooms from June through October (CNPS 2015). Over 200 individuals were documented within the salt marsh located between King Salmon Avenue and Fisherman's Channel (Figure 4). This population is located outside of the HBPP property boundary and no impacts on this species are anticipated from FSR activities.

Eelgrass (*Zostera marina*) is also located in the Intake Canal (Figure 4). Eelgrass does not have a CRPR and is a not federally or state-listed species. However, it is given special protection due to its importance as a nursery area for groundfish species. Eelgrass provides a variety of essential ecosystem functions, including primary production, predation refuge, nursery functions, physical structure, and nutrient cycling. Eelgrass habitat has been identified as a "Habitat Area of Particular Concern" as a subset of Essential Fish Habitat, a category of fish habitat protected under a provision of the Magnuson-Stevens Fishery Conservation and Management Act. Eelgrass has also been identified by the CCC as a "species of special biological significance," and therefore requires special protection pursuant to the California Coastal Act (HBHRCD 2006). Eelgrass is present in the Intake Canal. However, no impacts on eelgrass are anticipated from culvert replacement or removal activities. Both culverts are exposed during low tide and so extraction (both culverts) and replacement (culvert to Preserve) will be executed within a single tidal cycle for each culvert. Construction will make every attempt to avoid any work within Intake Canal waters (e.g., avoiding use of sheet piling or other water control structures in the Intake Canal), thereby minimizing potential adverse effects on aquatic biota and eelgrass habitats. Surveys prior to and, if needed, after construction activities will document if there are unintended impacts on eelgrass due to work not being completed within one tidal cycle (i.e., decrease in extent of cover). If so, appropriate mitigation (e.g., replanting eelgrass) will be conducted in coordination with applicable resource agencies.

The banks of the Intake Canal contain a narrow band of northern coastal salt marsh at or near the high-high tide line within the area delineated as Waters of the U.S. in the Intake Canal. This vegetation type is listed as a sensitive natural community in the California Natural Diversity Database (California Department of Fish and Wildlife 2015). A complete list of special-status

plant species and communities evaluated for the likelihood to occur in the Project site can be found in the Project Initial Study Mitigated Negative Declaration (HBHRCD 2015).

2.3 Fish and Wildlife

Special-status fish species were evaluated to assess likelihood of occurrence in the area and the potential for the Project to affect the species or their habitats, and it was determined that no special-status fish species or their habitat have the potential to be affected and thus no mitigation measures are identified to protect the resource (PG&E 2015). Special-status fish species in the region, all of which have low potential to occur within the Project site, include North American green sturgeon Northern and Southern Distinct Population Segments [DPS] (*Acipenser medirostris*), longfin smelt (*Spirnichus thaleichthys*), coho salmon (southern Oregon/northern California [SONCC] Evolutionary Significant Unit [ESU]) (*Oncorhynchus kisutch*), steelhead (Northern California DPS) (*Oncorhynchus mykiss*), and Chinook salmon (California coastal ESU) (*Oncorhynchus tshawytscha*). Tidewater goby (*Eucyclogobius newberryi*) does occur in locations near the HBPP; however, the USFWS (2014) concluded that suitable habitat was not present, and focused surveys also failed to detect presence at and adjacent to the HBPP. FSR implementation will have no impact on Northern and Southern DPS green sturgeon and their habitat, or tidewater gobies and their habitat. FSR plan implementation actions that have the potential to affect coho salmon, longfin smelt, northern California steelhead, and Chinook salmon include work associated with upgrading the culverts that run from the Frog Pond and Preserve to the Intake Canal. Construction will occur during low tide and not involve in-water work; therefore, there will be no impact on these fish species or their habitats.

Special-status amphibians that have the potential to occur and be affected by the Project include the northern red-legged frog (*Rana aurora*), which has been documented to occur in the Project site. Enhancing and creating habitat and implementing rescue and relocation measures during construction will minimize impacts (as described in Section 5). A variety of construction-related activities associated with the FSR plan implementation have the potential to affect this species. These include routing stormwater from the Independent Spent Fuel Storage Installation (ISFSI) stormwater detention basin into the Preserve; filling and contouring the Discharge Canal; excavation and grading near the Duck Pond; and grading of the Frog Pond. Northern red-legged frogs have the potential to be in all of these locations. Also, the addition of flow from the ISFSI stormwater detention basin into the Preserve will expand red-legged frog breeding and rearing habitat. The Frog Pond will also contain higher quality habitat following grading activities than the current condition.

Special-status bird species with the potential to occur in the Project site include marbled murrelet (*Brachyramphus marmoratus*), bald eagle (*Haliaeetus leucocephalus*), western snowy plover (*Charadrius alexandrinus nivosus*), and tricolored blackbird (*Agelaius tricolor*). The species-specific analysis determined that the Project will have a less-than-significant impact on marbled murrelets and no impact on their habitat, and less-than-significant impact on tricolored blackbirds and their habitat, while the Project will have no impact on bald eagles or western snowy plovers and their associated habitats; therefore, no mitigation measures are identified to protect these species (PG&E 2015). Bird species protected under the Federal Migratory Bird Treaty Act (MBTA) have the potential to nest in existing habitat (e.g., trees, ground nesting, buildings, and vegetation in the Preserve) and construction activity has the potential to harm bird species. To minimize these impacts, a pre-construction bird nesting survey during the breeding season will be conducted prior to construction (as described in Section 5). The Project will improve the quality

of breeding and foraging habitat with the addition of stormwater detention basins and new wetland habitat in Trailer City.

Townsend's big-eared bat (*Corynorhinus townsendii*) and pallid bat (*Antrozous pallidus*) have a low potential to roost in tree cavities intended for removal on the HBPP property (PG&E 2015). To minimize potential impacts on these species, a survey for suitable bat roosting cavities will be conducted of any tree slated for removal as part of FSR plan implementation (as described in Section 5).

2.4 Sea Level Rise

The Humboldt Bay area is and will continue to be affected by sea level rise. The CCC has taken steps to incorporate considerations of sea level rise in its Coastal Development Permit (CDP) process and has recently issued guidance on doing so (CCC 2013). In California north of Cape Mendocino, the rate of sea level rise over the next 100 years is expected to range from 0.3 to 4.7 ft (National Research Council 2012). Locally in the Humboldt Bay/Eel River estuary area, however, subsidence counteracts the effects of tectonic uplift that is occurring elsewhere north of Cape Mendocino, making Humboldt Bay more susceptible to sea level rise than elsewhere on the north coast of California. The CCC's guidance document recommends replacing the estimates of tectonic uplift that apply in this region with a local sea level rise factor for the Humboldt Bay area of 0.16 inches (in)/year. The CCC draft sea-level rise policy guidance document (CCC 2013) was used to estimate the amount of sea-level rise that may occur in the Project site so that the effects could be evaluated for the proposed mitigation areas. The projected sea-level rise in Humboldt Bay by 2030 and 2050 was calculated using the sea-level rise rates and formulas in the guidance document (CCC 2013) for north of Cape Mendocino and then adjusting for Humboldt Bay subsidence per CCC (2013) by subtracting the North of Cape Mendocino factor and then adding the Humboldt Bay subsidence-per-year factor times the number of years (Table 2). The mitigation areas for this Project were designed with sea-level rise in mind and are expected to be able to withstand the predicted changes. The impacts of sea-level rise on each mitigation area are described in more detail below.

Table 2. Projected sea-level rise[1] in Humboldt Bay, per CCC 2013.

Projection	2030		2050	
	cm	in	cm	in
Low range	5.6	2.2	12.7	5.0
Projected	9.9	3.9	21.8	8.6
High range[2]	31.8	12.5	63.0	24.8

[1] Adjusted for Humboldt Bay subsidence per CCC (2013) by subtracting the North of Cape Mendocino factor and then adding the Humboldt Bay subsidence-per-year factor times the number of years.

[2] The high range was used for evaluating the impact of sea-level rise on the mitigation areas.

3 PERMITTING AND MITIGATION NEEDS

The Project requires a permit under Section 404 of the Clean Water Act from the USACE, a Section 401 Water Quality Certification from the Regional Water Quality Control Board (RWQCB), a CDP from the CCC, and a development permit (approved on August 27, 2015) from

the HBHRCD. The Project underwent California Environmental Quality Act (CEQA) review and is subject to review under the state and federal Endangered Species Acts. The HBHRCD adopted a Mitigated Negative Declaration for the Project pursuant to CEQA on August 27, 2015.

PG&E will be responsible for implementing this mitigation plan including the monitoring and reporting program, maintenance during the monitoring period, and any adaptive management determined necessary to achieve success criteria.

3.1 Restoration Requirements from Previous Permits

The FSR plan includes some changes to the final site conditions from what had been envisioned during earlier phases of planning and permitting at the site. These changes result from a better understanding of PG&E's long-term operational needs for the site as the construction and planning have progressed. Consequently, PG&E is requesting changes to some of the restoration requirements included in existing permits to better reflect the current vision and intentions for site use. PG&E is proposing to restore 13.82 acres of the HBPP property. This represents a minor deviation from the 16.24 acres that were identified under decommissioning CDPs for restoration, when considering the industrial nature of the PG&E property with the ISFSI and the HBGS.

To address the 2.42-acre difference between the restoration acreage identified in the CDPs and the acres to be restored, PG&E will relocate its 6-inch gas line and decommission its 4-inch gas line; both of which traverse through the Redwood Community Action Agency's (RCAA's) Martin Slough Enhancement Project site. The Martin Slough Enhancement Project will result in the creation of 8.97 acres of restored areas. The gas lines traversing through the Martin Slough site are preventing the project from going forward. PG&E will relocate the 6-inch line and decommission the 4-inch line to enable the project to go forward. The RCAA will obtain all necessary permits required for the gas line work as part of permitting effort for the Martin Slough Enhancement Project.

The restoration requirements from previous permits that have not yet been implemented, as well as any proposed changes from the permitted conditions, are summarized in Table 3 and described in detail below. More detail about these areas can be found in the FSR Project Description in the Initial Study (PG&E 2015).

Table 3. Restoration requirements from existing permits associated with HBPP decommissioning and HBGS construction.

Area	Acres	Existing permit requirements	Proposed change from permitted condition	Applicable existing permit
Charlie Road	0.37	Restore area including 0.244 ac of CCC wetlands	none	CDP E-08-003, E-08-003-A1, CDP E-09-005
ISFSI Support Office and Parking Lot (Contractor Parking Lot #2)	0.94	Restore to pre-project conditions	Maintain a 0.84-ac portion for parking and ISFSI office building	CDP E-08-003-A1
Bayview Heights	6.06	Restore to pre-project conditions	Retain roadways; improve slope stability; add turn-around	CDP E-09-010, E-08-008, E-08-008-A1
HBPP Core Area	2.91	Restore to pre-project conditions	Retain 2.52 acres for HBGS future use	E-09-010
Waste Management Building	1.71	Restore to pre-project conditions	Retain 1.11 acres for HBGS; convert waste management building to HBGS warehouse	E-09-010
Trailer City	3.61	Restore a 3.61-acre area including 2.90 ac of CCC wetlands and 0.71 ac of USACE wetland	Add a 0.44-ac stormwater detention basin	CDP E-07-005, E-09-010
Alpha Road	1.10	Restore road to previous conditions (upland)	Maintain 0.96 acre as primary site access for HBGS, pave, and add guardrails along Intake Canal	CDP E-09-010, CEC Condition of Certification VIS-2
Rest-1	1.19	Restore 0.30-ac portion of Rest-1 affected by temporary access road (Alpha Road)	Maintain as primary site access and parking area for HBGS, pave	CEC License Condition BIO-12
Contractor Pedestrian Trail	0.60	Remove trail and restore surface	none	CDP E-09-010

3.1.1 Charlie Road

CDPs E-08-003 and E-08-003-A1 authorized the installation of an improved Charlie Road and contain provisions for restoring the road to pre-project conditions. Although mitigation was provided for the temporary and permanent impacts due to the construction and subsequent improvements to Charlie Road, CDPs E-08-003, E-08-003-A1, and E-09-005 require that the road area be restored to its pre-project condition as CCC wetlands once decommissioning is complete.

The restoration of this area is described below in Section 4.9.

3.1.2 ISFSI Support Office Parking Lot (Contractor Parking Lot #2)

The area known as Contractor Parking Lot #2 was constructed following removal of Liquid Fuel Oil (LFO) Tank 2 to provide decommissioning parking and later to serve the Count Room area during decommissioning. CDPs E-08-003 and E-08-003-A1 authorized this parking lot and

required the restoration of the area to pre-project conditions after decommissioning. PG&E is proposing to remodel the existing Count Room building to serve as the ISFSI support administration offices; the current ISFSI offices are located on Bayview Heights and will be removed. The eastern portion of this parking lot and Count Room area will be retained to serve as the ISFSI Support administrative office and parking. The remaining area will be restored to pre-project conditions.

A small 0.001-ac portion of a CCC-jurisdictional wetland that existed in the location of the ISFSI Support Office Parking Lot will not be able to be restored to pre-project conditions. This will be mitigated for at a 4:1 ratio by creating 0.004 ac of new wetland habitat in the Shoreline Wetland mitigation area (see Section 4.5).

A small portion of the existing Count Room parking lot will be converted into a stormwater detention basin. This area will be accessed by the ISFSI Entrance Road off of Bravo Road. The stormwater detention basin design is described below in Section 4.2.

3.1.3 Bayview Heights

The HBPP decommissioning program calls for the demolition of the existing buildings in Bayview Heights, including the removal of construction trailers, laydown materials, infrastructure (e.g., sewer lines to buildings and trailers), and building foundations.

Under the FSR plan, most of the area will be graded to remove compacted soil, fill any large voids and smooth steep contours left by the buildings and foundation, integrate the area into the adjacent mitigation and restoration areas, and provide for more efficient access for vegetation establishment and management. Existing roadways (RCA Way and Bayview Drive) will remain and Bayview Drive will be expanded to include a new turn-around east of the ISFSI.

The restoration of this area is described below in Section 4.3.

3.1.4 Trailer City

When PG&E proposed to use the Trailer City area for the HBGS construction laydown and construction trailers, the CEC required as part of its licensing process that, after HBGS construction, Trailer City be returned to pre-project conditions, including the replacement of 1.83 ac of CCC-jurisdictional wetlands and 0.06 ac of USACE-jurisdictional wetlands (total of 1.89 ac). Pursuant to CDPs E-07-005 and E-09-010 and the HBGS Surface Restoration Plan approved by the CEC, the CCC assumed jurisdiction of the area, allowing PG&E to continue to use Trailer City for construction laydown and support activities during decommissioning. Restoration of the area is required by the CCC as a requirement of the CDPs.

In addition, the CEC license process (Condition VIS-5) required that PG&E prepare a plan for landscape screening along the northern boundary of Trailer City area to screen views of the HBGS from the Shoreline Trail and Humboldt Bay. The HBGS VIS-5 plan was approved by the CEC on August 27, 2010.

Following the completion of the Canal Remediation Project (CDP 9-13-0621), the Trailer City area will be graded and excavated to create a restoration/mitigation wetland area (Shoreline Wetland) including 1.83 ac of CCC-jurisdictional wetlands and 0.06 ac of USACE-jurisdictional wetlands to replace the existing wetlands that existed pre-project, as well as 0.29 ac of additional wetlands to mitigate for impacts to wetlands elsewhere on the site. In addition, a portion of the

intermittently flowing drainage ditch between Trailer City and HBGS will be graded and excavated to create a stormwater detention basin. The basin will be designed to receive and treat stormwater runoff from Bayview Heights and the HBPP Core Area before discharging into the proposed adjacent mitigation wetlands. Screening vegetation will also be planted throughout the area to fulfill CEC Condition VIS-5.

The Trailer City restoration/mitigation area (Shoreline Wetland) is described in detail below in Section 4.5.

3.1.5 Alpha Road

Following completion of HBGS construction, it was determined that several HBGS temporary construction areas were needed for HBPP decommissioning. These areas included the construction laydown area, the temporary access road (also known as Alpha Road) and associated pedestrian walking path, fencing, pedestrian bridge over the Intake Canal, and temporary construction parking area located adjacent to Alpha Road. The July 2010 Surface Restoration Plan, which was written to satisfy the CEC Condition of Certification VIS-2, states that these areas would be restored once decommissioning was complete, as a requirement of CDP E-09-010 issued by the CCC for HBPP decommissioning. It has been determined, however, that Alpha Road is needed permanently as a heavy haul road because it enters King Salmon Avenue on the US Highway 101 side of the King Salmon Avenue Bridge over the Intake Canal, and this bridge is reported not to be engineered to accept the heavy loads required for the relocation of the casks located at the ISFSI site.

Prior to the construction of Alpha Road, the portion of the road running parallel to the Intake Canal south of HBGS was composed of grassland with ruderal (weedy) plant species and landscaping and was managed with irrigation and mowing for security, screening, and fire protection. There were no USACE or CCC jurisdictional wetlands, or special-status plant or animal species along this portion of the access road. The remaining portion of the road is known as Rest-1 and is described below.

With the conversion of Alpha Road from temporary to permanent, 1.10 ac of upland will be paved and remain as the primary access road for HBGS. The fencing along the Intake Canal will be replaced with a guardrail or other wildlife-friendly fencing alternative. Two small overflow parking areas along the east side of Alpha Road will be removed and restored (see Section 4.10).

3.1.6 Rest-1

On the west-southwest side of HBGS, to the south of Alpha Road and to the west of the HBGS diesel tank, is an area designated as Rest-1, which contains a vegetated swale that receives stormwater runoff from HBGS and a landscape screen that was planted in compliance with a Condition of Certification for the HBGS CEC License (BIO-12). This area is long and narrow and provides a buffer between the HBGS/Alpha Road and the Buhne Slough tidal marsh. Most of the restoration at Rest-1 was completed in 2010. However, a small area immediately adjacent to the southern boundary of the HBGS site, north of the Alpha Road parking area, was incorporated into Alpha Road. Prior to construction, this area contained both CCC and USACE wetlands. Per the Buhne Point Preserve Mitigation and Monitoring Plan (Dains and CH2M HILL 2009), a 0.3-ac portion of Rest-1 was to be restored once use of Alpha Road had concluded (upon completion of HBGS construction and then HBPP decommissioning).

However, converting Alpha Road from a temporary to a permanent road would preclude the restoration of this 0.3-ac portion of Rest-1. This will result in 0.274 ac of CCC wetlands and 0.011 ac of USACE wetlands that require mitigation for permanent impacts. These will be mitigated for at a 4:1 ratio by creating 1.14 ac of new wetland habitat in the Shoreline Wetland mitigation area (see Section 4.5).

3.1.7 Contractor Pedestrian Trail

A gravel-surfaced pedestrian trail was created as a walkway for construction workers going from Contractor Parking Lot #1 to the Assembly Building area and from there across the pedestrian bridge to HBGS or down Bravo Road to HBPP. The trail was a temporary construction appurtenance initially under the CEC's jurisdiction that came under CCC jurisdiction with CDP E-09-010. A requirement of this CDP is to remove the trail and bridge and restore the area to natural conditions.

The restoration of this area is described below in Section 4.6.

3.2 Low-Impact Design and Stormwater Management

The HBGS Section 401 Certification Condition 12 requires PG&E to submit a stormwater management plan for the former power plant site. This condition also requires that the final site design incorporates grading and drainage measures that maximize implementation of LID.

As part of decommissioning and restoration, portions of the existing stormwater conveyance system will be retained, while other sections will be entirely removed, resulting in significant alteration to drainage patterns and outfalls. The LID design techniques protect and enhance surrounding habitat. This is done by minimizing impervious surfaces and developing a network of bio-swales or vegetated swales and bio-detention basins located throughout the Project area designed to retain and treat stormwater flows. Two new major vegetated stormwater detention basins are proposed in the ISFSI Support and Trailer City areas (see Sections 4.2 and 4.4) and an existing stormwater detention basin, the Frog Pond, will be re-contoured and connected via a culvert with the new ISFSI stormwater detention basin. In addition, two pre-treatments basins have been designed to capture and treat stormwater before entering the vegetated stormwater detention basins. Finally, several "rain gardens" (small vegetated-swales) will be created at strategic places around the property (see Section 4.12). The locations of these will be shown on the grading and drainage plan that will be completed prior to implementation.

Treatment of runoff will occur in the swales and basins through a combination of sedimentation, adsorption, and other natural processes that help to remediate constituents of concern such as petroleum hydrocarbons and metals to less than significant levels. These processes are enhanced with the help of a community of native plants and soil incorporated within the swales and basins. The system will be designed so that it will retain 100 percent of the volume of runoff from the 85th percentile, 24-hour storm, for an average of 48 hours.

3.3 Proposed Restoration and Mitigation Ratios and Schedule

PG&E proposes to fulfill the restoration and mitigation requirements from previous permits described above and mitigation for impacts on existing wetlands (described in Section 2.1) by restoring, creating, and/or enhancing wetland and upland landscape on the HBPP property. The

conceptual design of the end state per the FSR plan, including the restoration and mitigation areas, is shown in Figure 5; engineering plans will be completed prior to implementation.

Restoration is defined as returning the impacted area as close as possible to pre-construction (or pre-HBPP) conditions. Enhancement involves changing the quality of a habitat (e.g., removing invasive plant species). Enhancement is often used to mitigate for temporary disturbances to wetlands (in addition to restoring the impacted areas) or for a temporal lag between impacts and mitigation ("temporal loss"). Creation is making a new wetland in an upland area. Creation of new wetland habitat is typically required as mitigation for permanent impacts. Each proposed restoration and mitigation area is described below in Section 4.

The acreage of various wetland habitats affected by the Project and the proposed mitigation ratios for these impacts are summarized in Table 4. The implementation of each restoration and mitigation area will begin as soon as the Project schedule allows. Table 4 indicates the anticipated timing of performing each restoration or mitigation action. Monitoring in each restoration and mitigation area will begin as soon as the mitigation action is complete. Any area that will be restored as required by previous permits (e.g., pedestrian trail) is considered restoration and not mitigation (therefore, not included in Table 4). Upland restoration is also not included in the mitigation table but addressed separately below in Sections 4.3 and 4.10.

Figure 5. Conceptual restoration and mitigation design for the HBPP following decommissioning.

Table 4. Project impacts on wetlands, proposed mitigation ratios, and proposed mitigation locations.

Location, habitat type, and duration	Impact	Actual/Anticipated impact timing	Affected area (ac)	Proposed mitigation ratio	Affected area times ratio (ac)	Mitigation location (Figure 5)	Anticipated mitigation timing	Restoration, creation, or enhancement action
Bayview Heights CCC jurisdictional wetlands (permanent)	grade and modify stormwater drainage system	2021	0.115	2:1	0.230	Mit-7	2020	Create CCC jurisdictional wetlands
Alpha Road Waters of the U.S. (temporary)	Road Realignment and culvert replacement	2018	0.05	1:1	0.05	Alpha Road	2018	Restore impacted areas with native species
Alpha Road Waters of the U.S. (permanent)	Road Realignment	2018	0.001	4:1	0.004	Mit-7	2020	Create USACE and CCC jurisdictional wetlands
Rest-1 CCC jurisdictional wetlands (permanent)	temporary impact made permanent—keeping road as site access	2009	0.274	4:1	1.096	Shoreline Wetland	2020	Create CCC jurisdictional wetlands
Rest-1 USACE and CCC jurisdictional wetlands (permanent)	temporary impact made permanent—keeping road as site access	2009	0.011	4:1	0.044	Shoreline Wetland	2020	Create USACE and CCC jurisdictional wetlands
Buhne Point Wetlands Preserve USACE and CCC jurisdictional wetlands (temporary)	Culvert replacement	2019	0.009	1:1	0.009	Buhne Point Wetlands Preserve	2019	Restore impacted areas and enhance existing wetlands by removing invasive species and replanting with native species
Buhne Point Wetlands Preserve Waters of the U.S. (temporary)	Culvert replacement	2019	0.009	1:1	0.009	Buhne Point Wetlands Preserve	2019	Restore impacted areas and enhance existing wetlands by removing invasive species and replanting with native species
Intake Canal USACE and CCC jurisdictional wetlands (temporary)	Culvert replacement and Bridge footing removal	2019	0.018	1:1	0.018	Buhne Point Wetlands Preserve	2019	Restore impacted areas and enhance existing wetlands by removing invasive species and replanting with native species
Intake Canal Waters of the U.S. (temporary)	Culvert replacement and Bridge footing removal	2019	0.018	1:1	0.018	Buhne Point Wetlands Preserve	2019	Restore impacted areas and enhance existing wetlands by removing invasive species and replanting with native species

Location, habitat type, and duration	Impact	Actual/Anticipated impact timing	Affected area (ac)	Proposed mitigation ratio	Affected area times ratio (ac)	Mitigation location (Figure 5)	Anticipated mitigation timing	Restoration, creation, or enhancement action
Frog Pond Stormwater detention basin USACE and CCC jurisdictional wetlands (permanent)	Grade existing stormwater detention basin; creating ISFSI entrance road	2018	0.295	2:1	0.590	Shoreline Wetland	2018	Create additional wetlands as part of the enhanced stormwater detention basin
King Salmon Avenue CCC jurisdictional wetlands (temporary)	creation of adjacent mitigation area	2021	0.040	1:1	0.040	King Salmon Avenue/Mit-7	2021	Restore impacted areas and enhance existing wetlands by removing invasive species and connecting to mitigation wetlands
King Salmon Avenue Waters of the U.S. (temporary)	creation of adjacent mitigation area	2021	0.023	1:1	0.023	King Salmon Avenue/Mit-7	2021	Restore impacted areas and enhance existing waters by removing invasive species and connecting to mitigation wetlands
Trailer City drainage ditch Waters of the U.S. (temporary)	creation of stormwater detention basin and wetland mitigation area	2020	0.016	1:1	0.016	Trailer City drainage ditch/ Shoreline Wetland	2020	Restore impacted areas and enhance existing drainage ditch by removing invasive species and replanting with native species
Trailer City drainage ditch Waters of the U.S. (permanent)	creation of stormwater detention basin and wetland mitigation area	2020	0.023	2:1	0.046	Shoreline Wetland	2020	Create additional wetlands as part of the enhanced stormwater detention basin and wetland mitigation area
ISFSI Support office parking area - CCW-F historic wetland	temporary impact made permanent—keeping Portal Road and parking area	2010	0.001	4:1	0.004	Mit-7	2021	Create additional wetlands as part of the enhanced wetland mitigation area
King Salmon Avenue, Alpha Road, and Frog Pond Stormwater detention basin waters and wetlands (temporary impacts and temporal loss)	temporary impacts	2018–2021	0.351	2.8:1	1.01	Buhne Point Preserve Fringe	2018	Enhance the Buhne Point Preserve Fringe area by removing non-native species and replanting with native vegetation

4 PROPOSED RESTORATION AND MITIGATION

Proposed restoration goals, objectives, and success criteria for each restoration and mitigation area are described in this section and summarized in Table 5. The timing of the monitoring period to evaluate the success criteria is described below in Section 6. These proposed goals reflect ongoing operational and maintenance needs of the HBGS and ISFSI. As such, they represent a balance among desires for site security, worker safety, and ecological benefits in the restoration and mitigation areas. For example, restoration actions within the ISFSI Owner Controlled Area security fencing (e.g., Bayview Heights) include the needs of maintaining site security and worker safety, and therefore, restoration actions are focused on revegetating hillslopes to stabilize sediment and establishing a self-sustaining, low-maintenance native landscape. There is no intention to attract wildlife to the industrial and security zone; therefore, no wildlife monitoring is proposed and no success criteria are associated with this location. Similarly, vegetated stormwater detention basins are intended to protect the water quality of adjacent natural areas by means of increasing detention time to promote sedimentation and provide a soil substrate for the adsorption of constituents of concern. Using native plant species in these areas helps to prevent the spread of non-native species while providing surface area for additional biological treatment. While some wildlife may utilize the stormwater detention basins, they are not designed for wildlife habitat attraction or values. In contrast, creation of wetlands such as in Mit-7 is specifically intended to provide wildlife habitat, and therefore wildlife habitat objectives and success criteria area included for this area.

Table 5. Mitigation and restoration goals, objectives, and success criteria.

Area	Goal	Objective	Success criteria
Mit-7	Goal 1: Create 0.244 ac of CCC jurisdictional wetland	Establish cover in wetland vegetation	70% cover of native vegetation. At least 50% cover of hydrophytic plants.
	Goal 2: Increase wildlife habitat value and wildlife use	Objective 1: Expand the Buhne Point Wetlands Preserve to support wildlife	Observe wildlife use (e.g., bird perching, resting, foraging). 10% of wildlife species observed in adjacent mitigation areas (e.g., Mit-1, Mit-6, Mit-2, Mit-5) will be observed in the mitigation area.
		Objective 2: Provide vegetation screening between the mitigation areas and King Salmon Avenue	90% survival of planted trees and shrubs.
ISFSI Stormwater Detention Basin	Improve the quality of stormwater flowing from industrial areas into the Buhne Point Wetland Preserve	Establish a vegetative basin with native perennial wetland species	30% cover by native perennial plants. Less than 2% cover of invasive species.

Area	Goal	Objective	Success criteria
Bayview Heights	Stabilize hillslopes with self-sustaining, low-maintenance native vegetation	Establish native plant landscape	70% cover by native perennial plants. Less than 2% cover of invasive species.
TRAILER CITY STORMWATER DETENTION BASIN	Improve the quality of stormwater flowing from industrial areas into the Shoreline Wetland mitigation area	Establish a vegetative basin with native perennial wetland species	30% cover by native perennial plants. Less than 2% cover of invasive species.
Shoreline Wetland Mitigation Area	Goal 1: Establish 0.715 ac of USACE and 2.926 ac of CCC jurisdictional wetlands	Objective 1: Create a drainage pattern of basin and swale to increase saturation to promote the formation of hydric soils	Long duration (approximately 21 days) of soil saturation in 0.096 ac.
		Objective 2: Establish cover in wetland vegetation	70% cover of native vegetation. At least 50% cover of hydrophytic plants in 2.199 ac.
	Goal 2: Increase wildlife habitat value and wildlife use	Create structural diversity of vegetation for increased wildlife use	90% survival of planted trees and shrubs. 30% of wildlife species in comparison site (e.g., Wren Marsh, Duck Pond, Mit-3) will be observed in the mitigation area.
Contractor Pedestrian Trail	Establish a native plant community to extend the adjacent habitats in the Buhne Point Preserve	Restore vegetation to native plant species	90% survival of planted trees and shrubs. At least 70% cover of native perennial herbs or grasses between planted trees and shrubs. Less than 2% cover of invasive species.

Area	Goal	Objective	Success criteria
Buhne Point Wetland Preserve Fringe Area	Goal 1: Establish a native plant community to extend the adjacent habitats in the Buhne Point Preserve	Restore vegetation to native plant species	90% survival of planted trees and shrubs. At least 70% cover of native perennial herbs or grasses between planted trees and shrubs. Less than 2% cover of invasive species.
	Goal 2: Maintaining and enhance wildlife habitat value and use	Objective 1: Create standing snags and perches	Observe wildlife use (e.g., bird perching, resting, foraging) of snags.
		Objective 2: Enhance wildlife connectivity to the Buhne Point Preserve	Observe wildlife movement between the adjacent mitigation areas of the Buhne Point Preserve (e.g., Mit-3, Mit-B, Mit-A, Mit-4a and 4b).
Frog Pond Stormwater detention basin	Improve the quality of stormwater flowing from industrial areas into the Buhne Point Wetland Preserve	Establish a vegetative basin with native perennial wetland species	30% cover by native perennial plants. Less than 2% cover of invasive species.
Charlie Road and ISFSI Support Office Parking	Establish a native plant community to extend the adjacent habitats in the Buhne Point Preserve and Buhne Point	Restore vegetation to native plant species	90% survival of planted trees and shrubs. At least 70% cover of native perennial herbs or grasses between planted trees and shrubs. Less than 2% cover of invasive species.
Alpha Road overflow parking areas	Establish a self-sustaining, low-maintenance, native plant community	Establish native plant landscape	70% cover by native perennial plants. Less than 2% cover of invasive species.
Assembly Building and parking area	Establish a self-sustaining, low-maintenance, native plant community	Establish native plant landscape	70% cover by native perennial plants. Less than 2% cover of invasive species.
Rain Gardens	Improve the quality of stormwater runoff	Establish vegetative swales with native perennial wetland species	30% cover by native perennial plants. Less than 2% cover of invasive species.
Alpha Road, Intake Canal, Buhne Point Wetlands Preserve, and Duck Pond Temporary Impacts	Restore temporarily impacted areas	Establish native vegetation	Percent cover is at least 95% of pre-construction density. 70% of cover is made up of native plants. Less than 2% cover of invasive species.

4.1 MIT-7

Contractor Parking Lot #1 has historically been a partially graveled parking area. It was improved to provide for construction worker parking, initially for constructing HBGS, and later for the HBPP Decommissioning Program under CDP E-09-010. Two sections of the parking lot known as Mit-1 (0.43 ac) and Mit-6 (0.24 ac) are intended as mitigation areas for impacts associated with HBGS construction and the Canal Remediation Project, respectively, and are slated to be converted to freshwater wetlands when no longer needed for the HBPP decommissioning.

The remaining 0.27 ac of the contractor parking lot not covered by Mit-1 and Mit-6 is intended to be used to mitigate for the USACE- and CCC-jurisdictional wetlands that will be removed with the grading of Bayview Heights and the re-alignment of Alpha Road.

4.1.1 Existing ecological conditions

Mit-7 is currently occupied by a gravel-surfaced temporary parking area that is located adjacent to the Preserve (Figure 6). (The eastern portion of the parking area will become Mit-1 and Mit-6 when the HBPP decommissioning is completed.) There is no vegetation on the site at this time.

The water for this area is derived entirely from surface water runoff from rainfall, with the greatest precipitation in the winter (November–February) and lowest in the summer (June–September). The average annual amount of precipitation from July 1948 through March 2013 was 39.5 in (WRCC 2013).

The soils in the area are overlain by gravel over leveled fill material. The most recent soil survey conducted in this area (McLaughlin and Harradine1965) classifies Mit-7 as "residential, business and industrial area" miscellaneous land type. Subsurface investigations (PG&E 1985, 1987–1989; Woodward-Clyde Consultants 1985) at the HBPP property confirm that the underlying native soil is primarily Hookton silty clay loam, eroded, 3 to 8 percent slope (PG&E 2002) with some areas of Bayside very silty clay loam, very poorly drained, 0 to 3 percent slope.

4.1.2 Mitigation goals, objectives, and success criteria

The goals, objectives, and success criteria for Mit-7 are as follows:

Goal 1: Create 0.238 ac of CCC jurisdictional wetland

Objective 1: Establish cover in wetland vegetation

Success criteria:

- 70% cover of native vegetation
- At least 50% cover of hydrophytic plants

Goal 2: Increase wildlife habitat value and wildlife use

Objective 1: Expand the Buhne Point Wetlands Preserve to support wildlife

Success criteria:

- Observe wildlife use (e.g., bird perching, resting, foraging)
- 10% of wildlife species observed in adjacent mitigation areas (e.g., Mit-1, Mit-6, Mit-2, Mit-5) will be observed in the mitigation area

Objective 2: Provide vegetation screening between the mitigation areas and King Salmon Avenue.

Success criterion: 90% survival of planted trees and shrubs

4.1.3 Mitigation implementation

4.1.3.1 Conceptual design

The gravel surface of the parking lot and connections to King Salmon Avenue and Charlie Road will be removed and the area will be graded to remove compacted fill. The area will be recontoured to connect with the adjacent mitigation areas (Mit-6 and Mit-2 in the established Preserve). Following site grading, surface soils will be ripped as needed to create suitable conditions for planting vegetation. Mit-7 will be developed at the same time as, and designed to become extensions of, Mit-1 and Mit-6, with a mix of coastal prairie, seasonal freshwater marsh, and riparian forest ecotypes.

The conceptual design is shown in Figure 6. Detailed engineering plans will be completed prior to implementation.

Existing or imported clean fill[1] will be used as needed to achieve the desired elevations in the mitigation area. Any additional clean fill from removal of the parking area will be re-used on site or taken off-site to an appropriate facility. BMPs will be applied to prevent the soil from impacting the adjacent wetlands as described below in Section 5.

Following grading, the exposed soils will be tested for salinity and nutrients, and soil conditioning will be prescribed as needed. Infiltration rates of the exposed soils will be measured and compared with the requirements for long-duration ponding, which is estimated using hydrologic models. If the soil infiltration rates are higher than anticipated, soil amendments (e.g., bentonite clay soil) will be mixed in with the existing soils to achieve the desired infiltration rates.

[1] Clean fill is defined as any soil or fill material that meets reuse criteria as defined by the current site Interim Measures Removal Action Work Plan (IMRAW). The Department of Toxic Substances Control (DTSC) approved the IMRAW to govern the management of soil generated by the decommissioning project in 2009.

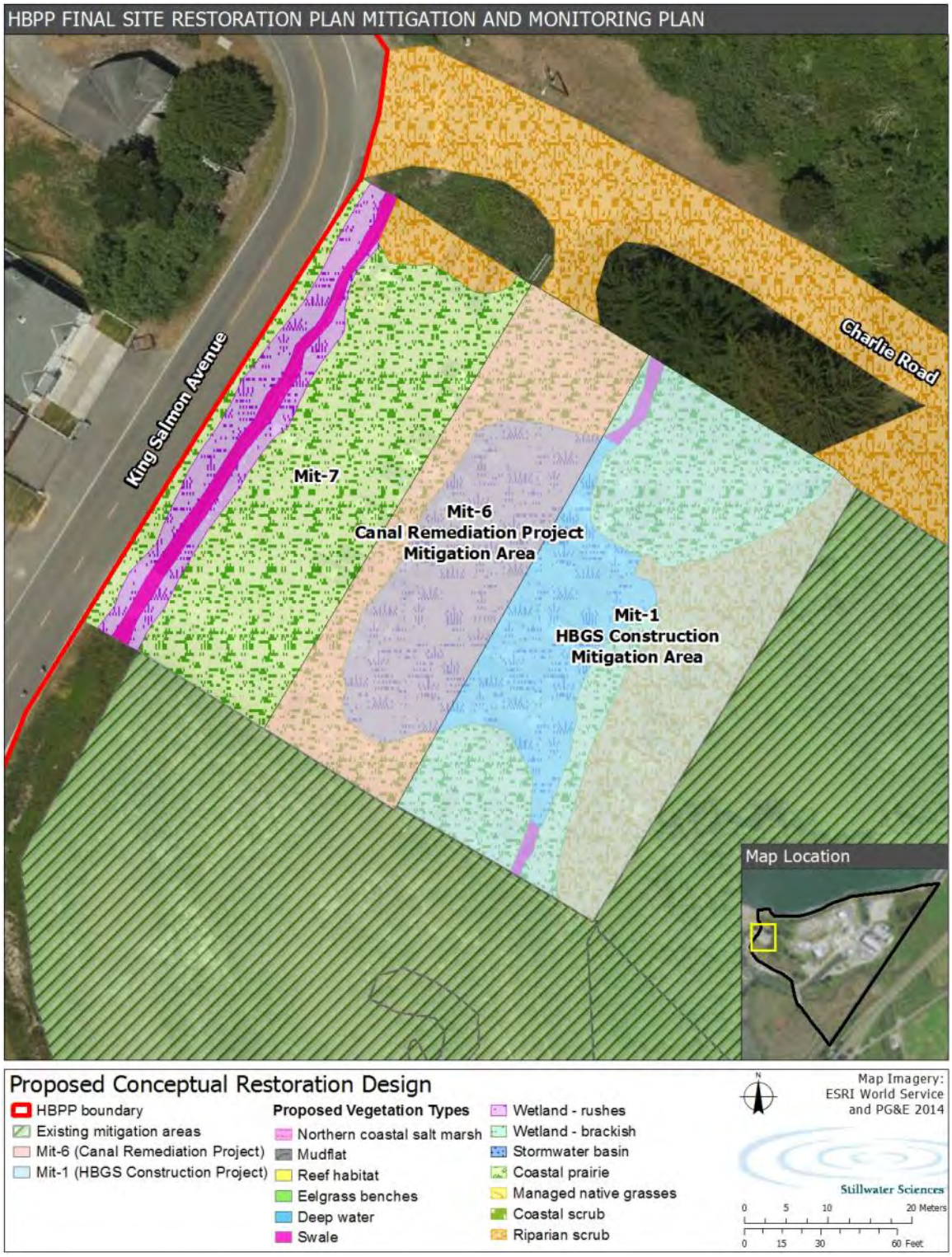

Figure 6. Proposed conceptual design for the Mit-7 mitigation area.

4.1.3.2 Comprehensive vegetation specifications

Mit-7 will be converted to a coastal prairie similar to the coastal terrace prairie described by Holland (1986), with groups of riparian trees and shrubs and areas of seasonal freshwater marsh similar to the coastal freshwater marsh described by Holland (1986). The site will be planted with native species appropriate for each habitat (Table 6). Planting zones will be defined by soil and hydrology, based on the initial soil testing and hydrologic monitoring. Vegetation will be propagated either through seed or nursery stock. Planting densities will range from one plant per 1 ft^2 to one plant per 9 ft^2, depending on the species. Seedlings and seed will be procured and installed by a qualified contractor. As much as possible, local plant stock collected around Humboldt Bay and growing under similar ecological conditions (e.g., soils, depth to groundwater) will be used.

Table 6. Suggested native plant species for Mit-7.

Scientific name	Common name	Wetland indicator[1]
Coastal prairie		
Armeria maritima	thrift seapink	FAC
Calamagrostis nutkaensis	Pacific reedgrass	FACW
Cardamine oligosperma	bittercress	FAC
Danthonia californica	California oatgrass	FAC
Distichlis spicata	saltgrass	FACW
Deschampsia cespitosa	tufted hair grass	FACW
Festuca rubra	red fescue	FAC
Hordeum brachyantherum	meadow barley	FACW
Iris douglasiana	Douglas iris	NL–UPL
Symphyotrichum chilense	Pacific aster	FAC
Seasonal freshwater marsh		
Angelica lucida		FAC
Bolboschoenus robustus	seacoast bulrush	OBL
Cyperus eragrostis	tall flatsedge	FACW
Juncus lesceurii	San Francisco rush	FACW
Juncus effusus	soft rush	FACW
Mimulus guttatus	monkey flower	OBL
Oenanthe sarmentosa	water parsley	OBL
Potentilla anserina ssp. *pacifica*	Pacific potentilla	OBL
Schoenoplectus acutus var. *occidentalis*	common tule	OBL
Scirpus microcarpus	panicled bulrush	OBL
Riparian scrub/forest		
Alnus rubra	red alder	FAC
Asarum caudatum	wild ginger	FACU
Baccharis pilularis	coyote brush	NL–UPL
Fragaria chiloensis	beach strawberry	FACU
Garrya elliptica	coast silk tassel	NL–UPL
Holodiscus discolor	ocean spray	FACU
Lonicera involucrata	twinberry	FAC
Maianthemum dilatatum	two-leaved false-Solomon's-seal	FAC
Morella californica	wax myrtle	FACW
Picea sitchensis	Sitka spruce	FAC
Pinus contorta ssp. *contorta*	shore pine	NL–UPL
Polypodium calirhiza	licorice fern	NL–UPL

Scientific name	Common name	Wetland indicator[1]
Polystichum munitum	western swordfern	FACU
Ribes sanguineum var. *sanguineum*	red flowering currant	FACU
Rubus ursinus	California blackberry	FACU
Salix hookeriana	dune willow	FACW
Vaccinium ovatum	evergreen huckleberry	FACU

[1] Lichvar et al. (2012 and 2014);
FAC: Facultative wetland plants—occur in wetlands and non-wetlands
FACW: Facultative wetland plants—usually occur in wetlands, but may occur in non-wetlands.
OBL: Obligate wetland plants—almost always occur in wetlands.
NL–UPL: Not listed—upland plants; any species not listed in this publication it is considered an upland plant - almost never occur in wetlands.

4.1.4 Sea-level rise

Mit-7 is located greater than 1,000 ft from the tidal connection with the Intake Canal (at the southeastern corner of the Preserve). The existing intermittent drainage ditch along King Salmon Avenue drains to the south along the road until it connects to the Preserve and from there out through the Intake Canal. There is a slight possibility that a 24.8-in sea-level rise (2050 prediction) or even a 12.5-in (2030 prediction) rise could have a minor influence on the mitigation area. However, the likelihood of this is low because of the wide area of salt marsh in the Preserve closer to the inlet that would allow for tidal water to spread out and keep it from reaching Mit-7. If salt water did reach this mitigation area, it would likely only cause a shift to brackish marsh conditions similar to that in Mit-B and would still provide habitat value and ecological function. Most of the mitigation area will not have seasonal ponding, but will be a slightly higher elevation than the adjacent ponds and drainage ditches. The mitigation area would not fail or be eliminated by sea-level rise of either the 2030 or 2050 predicted high-range values.

4.2 ISFSI Stormwater Detention Basin

A portion of Contractor Parking Lot #2, the Frog Pond, and Assembly Building parking area will be excavated to create a stormwater detention basin that will collect and detain stormwater from Buhne Point Hill and the ISFSI area and release it slowly to the Preserve. The ISFSI stormwater detention basin will also receive water from the Frog Pond stormwater detention basin via a culvert under the ISFSI entrance road. The stormwater detention basin will be located between the road providing access to the ISFSI Support Office and the Preserve (Figure 7).

4.2.1 Existing ecological conditions

The current condition of the site is a parking lot and laydown/storage area.

4.2.2 Mitigation goals, objectives, and success criteria

The goals, objectives, and success criteria for the ISFSI stormwater detention basin are as follows:

Goal 1: Improve the quality of stormwater flowing from industrial areas into the Buhne Point Wetland Preserve

Objective 1: Establish a vegetative basin with native perennial wetland species
Success criteria:

- 30% cover by native perennial plants
- Less than 2% cover of invasive species

4.2.3 Mitigation implementation

4.2.3.1 Conceptual design

The paved surface cover will be removed and reconfigured and the associated storm drainage system will be graded to route the surface run-off from the ISFSI Support Office parking lot to a collection area. Stormwater will either be allowed to infiltrate through a region of permeable pavement provided in the parking stalls or be directed to an appropriately sized oil/water separator and stormwater conveyance system back to the stormwater detention basin. Stormwater run-off from incidental traffic into and out of the parking area and on Charlie Road will be allowed to surface-flow directly into the stormwater detention basin. A water control structure will also be installed to receive water from the Frog Pond stormwater detention basin. The design will provide two outfalls from the basin to match the existing locations of current site outfalls; this will minimize hydrologic impacts to the Preserve. Flows from this basin will be released through adjustable weirs into the adjacent Preserve. The conceptual design is shown in Figure 7. Detailed engineering plans will be completed prior to implementation.

Existing or imported clean fill will be used as needed to achieve the desired elevations in the stormwater detention basin. Any additional clean fill from removal of the parking area will be re-used on site or taken off-site to an appropriate facility. BMPs will be applied to prevent the soil from impacting the adjacent wetlands as described below in Section 5. Following grading, the exposed soils will be tested for salinity and nutrients, and soil conditioning will be prescribed as needed.

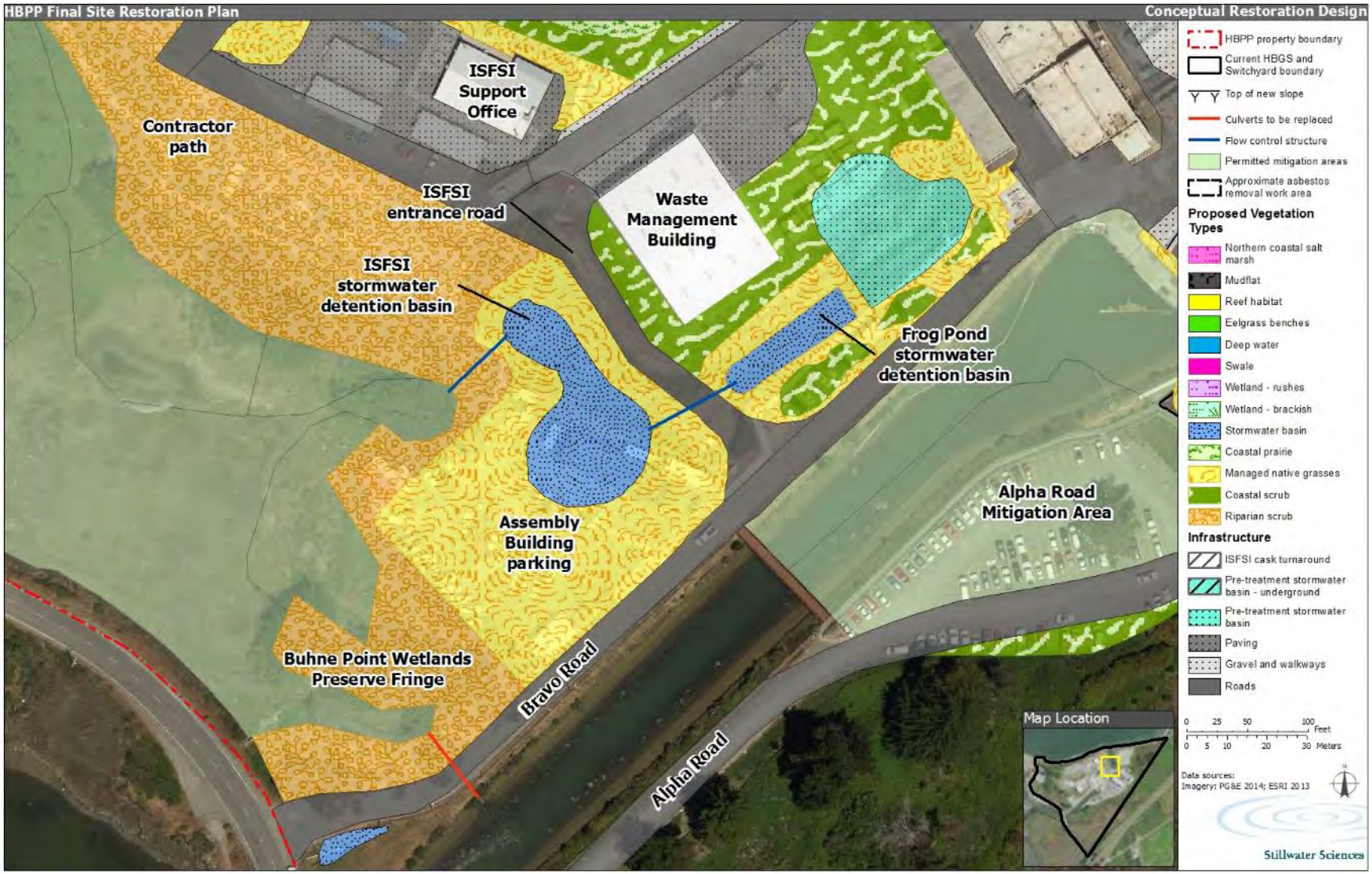

Figure 7. Proposed conceptual design for the Assembly Building and ISFSI and Frog Pond stormwater detention basins.

4.2.3.2 Comprehensive vegetation specifications

The ISFSI stormwater drainage basin will be planted with native emergent perennial plant species within the basin, and native grass and low-lying herbaceous plants on the side slopes and upper area (Table 7).

Table 7. Suggested native plant species for stormwater detention basins and rain gardens.

Scientific name	Common name	Wetland indicator[1]
Armeria maritima var. *californica*	thrift seapink	FAC
Bolboschoenus maritimus subsp. *paludosus*	saltmarsh bulrush	OBL
Bolboschoenus robustus	seacoast bulrush	OBL
Bromus carinatus	California brome	NL–UPL
Calamagrostis nutkaensis	*Pacific reedgrass*	FACW
Carex obnupta	slough sedge	OBL
Carex praegracilis	clustered field sedge	FACW
Cyperus eragrostis	tall flatsedge	FACW
Danthonia californica	California oatgrass	FAC
Deschampsia cespitosa	tufted hair grass	FACW
Distichlis spicata	saltgrass	FACW
Eleocharis macrostachya	common spikerush	OBL
Festuca microstachys	small fescue	NL–UPL
Festuca rubra	red fescue	FAC
Fragaria chiloensis	beach strawberry	FACU
Hordeum brachyantherum	meadow barley	FACW
Juncus effusus	soft rush	FACW
Juncus lesceurii	San Francisco rush	FACW
Mimulus guttatus	monkey flower	OBL
Oenanthe sarmentosa	water parsley	OBL
Potentilla anserina ssp. *pacifica*	Pacific potentilla	OBL
Schoenoplectus acutus var. *occidentalis*	common tule	OBL
Scirpus microcarpus	panicled bulrush	OBL
Symphyotrichum chilense	Pacific aster	FAC

[1] Lichvar et al. (2012 and 2014);
FAC: Facultative wetland plants—occur in wetlands and non-wetlands
FACW: Facultative wetland plants—usually occur in wetlands, but may occur in non-wetlands.
OBL: Obligate wetland plants—almost always occur in wetlands.
NL–UPL: Not listed—upland plants; any species not listed in this publication it is considered an upland plant - almost never occur in wetlands.

4.3 Bayview Heights

Bayview Heights will be graded and replanted to create two main vegetation types: coastal prairie on the upper terraces and a low-growing salal/swordfern coastal bluff scrub on the steeper slopes. This area is within the ISFSI Owner Controlled Area fencing and therefore security concerns preclude the establishment of significantly taller vegetation.

4.3.1 Existing ecological conditions

A portion of Bayview Heights to the south and downslope of the ISFSI is currently open space. The vegetation in this area is primarily annual grasses and invasive, non-native vegetation (e.g., *Rubus armeniacus* [Himalayan blackberry], *Cytisus scoparius* [Scotch broom], *Erica lusitanica* [Spanish heather], *Vinca* sp. [periwinkle], and *Cortaderia jubata* [Pampas grass]) that is managed with either mowing or seasonal cutting. Two small wetlands features are located on the upper portion of the area as described above in Section 2.1.3. An additional wetland is located near the ISFSI that is currently protected by construction fencing. This wetland receives water from a French drain that directs water from the ISFSI, through the wetland, then down the slope to Humboldt Bay.

The remainder of the area is industrial. The area east of the ISFSI contains buildings that were formerly associated with Unit 3 decommissioning and open storage areas used for decommissioning laydown. There is also an area that contains construction trailers that provide office space for the decommissioning staff. A pedestrian path connects the ISFSI area with the former HBPP Units 1, 2, and 3.

4.3.2 Mitigation goals, objectives, and success criteria

The goals, objectives, and success criteria for Bayview Heights are as follows:

Goal 1: Stabilize hillslopes with self-sustaining, low-maintenance native vegetation

Objective 1: Establish native plant landscape

Success criteria:

- 70% cover by native perennial plants
- Less than 2% cover of invasive species

4.3.3 Mitigation implementation

4.3.3.1 Conceptual design

After the structures and any contaminated soils are removed, the area will be graded to remove compacted fill and the invasive plant seed bank in the upper layer of topsoil. Some grading will be done for more efficient access for vegetation establishment and management. Clean soil from the Reactor Vessel Caisson/Spent Fuel Pool Removal Project may also be beneficially re-used in this area. Soils from excavations elsewhere on site may be required to fill any large voids and smooth steep contours left by building and foundation removal.

The Discharge Canal will be filled with soils removed to create wetland depressions in the Shoreline Wetland Mitigation Area and built up to extend the adjacent Bayview Heights slope to the west. Bank stabilization technologies will be used as needed to stabilize slopes steeper than 4:1 (horizontal: vertical). The base of the slope bordering the HBPP Core Area will require special protection. This feature is approximately 364 ft long, ranging in height from 10 to 25 ft, and a part of this area has experienced recent slope failures. To protect the HBPP Core Area from potential impacts, slope limitations or structural improvements, such as a gabion wall structure, may be constructed in this area. Drainage infrastructure and erosion control will also provide required slope protection. The specific stabilization improvement to be used will be determined during detailed design.

The existing wetland near the ISFSI will be enhanced by removing non-native, invasive species (Pampas grass, blackberry), and the protective fencing will be removed to connect to adjacent landscaped areas.

The conceptual design is shown in Figure 8. Detailed engineering plans will be completed prior to implementation.

4.3.3.2 Comprehensive vegetation specifications

To meet PG&E's preference for native plantings that require low maintenance and provide erosion control and a secure line of sight (less than 3 ft tall) for the ISFSI, Bayview Heights will be converted to a coastal prairie similar to the coastal terrace prairie described by Holland (1986) on the upper elevations and coastal bluff scrub on the steeper banks.

The site will be planted with native plant species appropriate for each habitat (Table 8). Vegetation will be propagated either through seed or nursery stock. Planting densities will range from one plant per 1 ft^2 to one plant per 6 ft^2, depending on the species. Seedlings and seed will be procured and installed by a qualified contractor. As much as possible, local plant stock collected around Humboldt Bay and growing under similar ecological conditions (e.g., soils, depth to groundwater) will be used.

Coastal prairie areas could include species such as red fescue (*Festuca rubra*), California brome (*Bromus carinatus*), and California oatgrass (*Danthonia californica*). Coastal bluff scrub areas could include low-growing species such as salal (*Gaultheria shallon*) and swordfern (*Polystichum minitum*).

Table 8. Suggested native plant species for Bayview Heights.

Scientific name	Common name
Coastal prairie	
Bromus carinatus	California brome
Danthonia californica	California oatgrass
Festuca rubra	red fescue
Fragaria chiloensis	beach strawberry
Solidago canadensis	Canada goldenrod
Iris douglasiana	Douglas's iris
Coastal bluff scrub	
Gaultheria shallon	salal
Maianthemum dilatatum	two-leaved false-Solomon's-seal
Arctostaphylos uva-ursi	kinnikinnick
Polystichum munitum	western swordfern
Rubus ursinus	California blackberry

4.3.4 Sea-level rise

This area will be upland vegetation on the higher elevations of the property (10–40 ft). There will be no direct effect of sea-level rise on this restoration area.

Figure 8. Proposed conceptual design for the Bayview Heights restoration area.

4.4 Trailer City Stormwater Detention Basin

The Trailer City stormwater detention basin will be created in the southern end of Trailer City in a portion of intermittent drainage ditch located between Trailer City and HBGS to capture stormwater runoff from the Bayview Heights and HBPP Core Area in partial fulfillment of the site LID requirements.

4.4.1 Existing ecological conditions

The current condition of the site is a paved work area that houses a groundwater treatment system, large sediment management tents, an office trailer, and a laydown/storage area and the Discharge Canal, which is currently being remediated by removing contaminated sediments.

4.4.2 Mitigation goals, objectives, and success criteria

The goals, objectives, and success criteria for Trailer City stormwater detention basin are as follows:

Goal 1: Improve the quality of stormwater flowing from industrial areas into the Shoreline Wetland mitigation area

Objective 1: Establish a vegetative basin with native perennial wetland species

Success criteria:

- 30% cover by native perennial plants
- Less than 2% cover of invasive species

4.4.3 Mitigation implementation

4.4.3.1 Conceptual design

A portion of the intermittent drainage ditch and the Trailer City work area will be excavated to create a stormwater detention basin that will accept stormwater runoff from the eastern portion of Bayview Heights and the HBPP Core Area. A maintenance and access road will be installed around the basin, per RWQCB requirements. Water flowing from this basin will be released through an adjustable weir into the adjacent Shoreline Wetland mitigation area (see Section 4.5 below). The conceptual design is shown in Figure 9. Detailed engineering plans will be completed prior to implementation.

4.4.3.2 Comprehensive vegetation specifications

The Trailer City stormwater drainage basin will be planted with native emergent perennial plant species within the basin, and native grass and low-lying herbaceous plants on the side slopes and upper area, similar to the ISFSI stormwater detention basin (Table 7).

Figure 9. Proposed conceptual design for the Trailer City stormwater detention basin and Shoreline Wetland mitigation area.

4.5 Shoreline Wetland Mitigation Area

The Shoreline Wetland mitigation area will be created to replace the 1.83 ac of CCC-jurisdictional wetlands and 0.06 ac of USACE-jurisdictional wetlands that existed in the area and mitigate for impacts on wetlands in several areas of the HBPP (Section 3). It has been designed to hydrologically connect the Trailer City stormwater detention basin to the Duck Pond natural area located on the east side of the existing Trailer City. The mitigation area will contain more wetlands than are required for mitigation (Table 4). The additional wetland areas are intended to mitigate for any indirect impacts to wetlands that will occur throughout the site as a result of implementing the final site restoration plan. Trees and shrubs will be planted to screen views of the HBGS from the Shoreline Trail and Humboldt Bay per Condition VIS-5 of the CEC license for HBGS.

4.5.1 Existing ecological conditions

The current condition of the site is a paved work area that houses a groundwater treatment system, RUBB tents for sediment management, an office trailer, and a laydown/storage area and the Discharge Canal, which is currently being remediated by removing contaminated sediments. The Discharge Canal will be used for approximately four years to store soil from the Spent Fuel Pool/Reactor Vessel Caisson Removal Project (CDP E-09-010). As part of the permitting for the Canal Remediation Project (CDP 9-13-0621), the Discharge Canal was considered permanently impacted and was completely mitigated for by creating the Alpha Road Parking mitigation area. The intermittent drainage ditch is relatively narrow (7–24 ft at ordinary high water) with steep banks and heavily vegetated with Himalayan blackberry and *Rubus ursinus* (California blackberry), which does not allow for growth of any emergent vegetation that would treat stormwater. There is currently no control of water entering this drainage ditch that would allow for water treatment before it is released to the Duck Pond. The drainage ditch historically received water through a culvert at the west end, but changes to the stormwater drainage network as part of the Canal Remediation project have removed this connection. Currently, the water input is primarily surface flow from adjacent areas of Trailer City and associated roadways, as well as direct rainfall.

4.5.2 Mitigation goals, objectives, and success criteria

The goals, objectives, and success criteria for the Shoreline Wetland mitigation area are as follows:

Goal 1: Establish 0.715 ac of USACE and 2.926 ac of CCC jurisdictional wetlands

Objective 1: Create a drainage pattern of basin and swale to increase saturation and promote the formation of hydric soils

Success criterion: Long duration (approximately 21 days) of soil saturation in 0.715 ac

Objective 2: Establish cover in wetland vegetation

Success criteria:

- 70% cover of native vegetation
- At least 50% cover of hydrophytic plants in 2.926 ac

Goal 2: Increase wildlife habitat value and wildlife use

Objective 1: Create structural diversity of vegetation for increased wildlife use

Success criteria:

- 90% survival of planted trees and shrubs
- 30% of wildlife species observed in comparison site (e.g., Wren Marsh, Duck Pond, Mit-3) will be observed in the mitigation area

4.5.3 Mitigation implementation

4.5.3.1 Conceptual design

Trailer City will be converted to a mosaic of USACE and CCC jurisdictional wetlands. The paved surface will be removed and the area will be graded to remove compacted fill. The Discharge Canal will be filled with soils removed to create wetland depressions and built up to extend the adjacent Bayview Heights slope to the west. The entire site will be recontoured in a pattern of basin, swale, and low hills connecting to the Duck Pond wetland and sloping up to the Shoreline Trail and adjacent Trailer City stormwater detention basin (Figure 9). Following site grading, surface soils will be ripped as needed to create suitable conditions for the vegetation installation. The conceptual design is shown in Figure 9. Detailed engineering plans will be completed prior to implementation.

Existing or imported clean fill will be used as needed to achieve the desired elevations in the mitigation area. Any additional clean fill from removal of Trailer City will be re-used on site or taken off-site to an appropriate facility. BMPs will be applied to prevent the soil from impacting the adjacent wetlands as described below in Section 5. Following grading, the exposed soils will be tested for salinity and nutrients, and soil conditioning will be prescribed as needed.

In addition, the existing chain-link fence between the Duck Pond and Wren Marsh will be removed to allow for better wildlife connectivity between the two natural areas. The existing fence along the Shoreline Trail will be replaced along the Shoreline Wetland mitigation area with a wildlife-friendly fence that will protect the mitigation area, but allow for wildlife connectivity.

4.5.3.2 Comprehensive vegetation specifications

The northern edge of the restoration area along the Shoreline Trail and the low hill areas in the middle and southern side of the site identified as coastal riparian scrub on Figure 9 will be planted with native trees and shrubs to form screening vegetation, per the landscape plan submitted to the CEC and CCC as required by the VIS-5 permit condition. Suggested plant species are presented in the riparian scrub forest section of Table 9. Note: these species represent a change to the landscape plan recommended species list (CEC VIS-5) and must be approved by the CEC and reviewed by the CCC prior to planting.

The remainder of the mitigation area will be converted to a mix of coastal prairie, swale, and coastal brackish marsh similar to the ecosystem found in the adjacent Duck Pond wetland. The site will be planted with native species appropriate for each habitat (Table 9). Planting zones will be defined by soil and hydrology, based on the initial soil testing and hydrologic monitoring. Vegetation will be propagated either through seed or nursery stock. Planting densities will range from one plant per 1 ft^2 to one plant per 9 ft^2, depending on the species. Seedlings and seed will be procured and installed by a qualified contractor. As much as possible, local plant stock collected around Humboldt Bay and growing under similar ecological conditions (e.g., soils, depth to groundwater) will be used.

Table 9. Suggested native plant species for Shoreline Wetland mitigation area.

Scientific name	Common name	Wetland indicator[1]
Coastal prairie		
Armeria maritima var. *californica*	thrift seapink	FAC
Calamagrostis nutkaensis	*Pacific reedgrass*	FACW
Cardamine oligosperma	bittercress	FAC
Danthonia californica	California oatgrass	FAC
Deschampsia cespitosa	tufted hair grass	FACW
Festuca rubra	red fescue	FAC
Hordeum brachyantherum	meadow barley	FACW
Iris douglasiana	Douglas iris	NL–UPL
Symphyotrichum chilense	Pacific aster	FAC
Swale and coastal brackish marsh		
Angelica lucida	seacoast angelica	FAC
Bolboschoenus robustus	seacoast bulrush	OBL
Bolboschoenus maritimus subsp. paludosus	saltmarsh bulrush	OBL
Cyperus eragrostis	tall flatsedge	FACW
Distichlis spicata	saltgrass	FACW
Heracleum maximum	cow parsnip	FAC
Juncus lesceurii	San Francisco rush	FACW
Juncus effusus	soft rush	FACW
Mimulus guttatus	monkey flower	OBL
Oenanthe sarmentosa	water parsley	OBL
Potentilla anserina ssp. *pacifica*	Pacific potentilla	OBL
Salicornia pacifica	Pacific pickleweed	OBL
Schoenoplectus acutus var. *occidentalis*	common tule	OBL
Scirpus microcarpus	panicled bulrush	OBL
Riparian scrub/forest		
Alnus rubra	red alder	FAC
Asarum caudatum	wild ginger	FACU
Baccharis pilularis	coyote brush	NL–UPL
Fragaria chiloensis	beach strawberry	FACU
Garrya elliptica	coast silk tassel	NL–UPL
Holodiscus discolor	ocean spray	FACU
Lonicera involucrata	twinberry	FAC
Maianthemum dilatatum	two-leaved false-Solomon's-seal	FAC
Morella californica	wax myrtle	FACW
Picea sitchensis	Sitka spruce	FAC
Pinus contorta ssp. *contorta*	shore pine	NL–UPL
Polypodium calirhiza	licorice fern	NL–UPL
Polystichum munitum	western swordfern	FACU
Rubus ursinus	California blackberry	FACU
Ribes sanguineum var. *sanguineum*	red flowering currant	FACU
Salix hookeriana	dune willow	FACW
Rubus spectabilis	salmonberry	FAC
Sambucus racemosa	red elderberry	FACU
Scrophularia californica	California figwort	FAC

Scientific name	Common name	Wetland indicator[1]
Vaccinium ovatum	evergreen huckleberry	FACU

[1] Lichvar et al. (2012 and 2014);
FAC: Facultative wetland plants—occur in wetlands and non-wetlands
FACW: Facultative wetland plants—usually occur in wetlands, but may occur in non-wetlands.
OBL: Obligate wetland plants—almost always occur in wetlands.
NL–UPL: Not listed—upland plants; any species not listed in this publication it is considered an upland plant—almost never occur in wetlands.

4.5.4 Sea-level rise

The Shoreline Wetlands mitigation area does not have a direct connection to Humboldt Bay. The adjacent Duck Pond's brackish conditions are likely predominantly due to saltwater intrusion from the bay under the coastal trail, groundwater, and waves and spray from Humboldt Bay. The mitigation area will be planted with a mix of species with varying salinity tolerances. This will allow for successful vegetation establishment with several salinity regimes. If sea-level rise causes an increase in salinity due to groundwater intrusion, the species dominance would shift towards more salt-tolerant species. There would not be a loss of ecological function. The mitigation area would not fail or be eliminated by sea-level rise of either the 2030 or 2050 predicted high-range values.

4.6 Contractor Pedestrian Trail

A gravel-surfaced pedestrian trail was created as a walkway for construction workers going from Contractor Parking Lot #1 to the Assembly Building area and from there across the pedestrian bridge to HBGS or down Bravo Road to HBPP. The trail was a temporary construction appurtenance initially under the CEC's jurisdiction that came under CCC jurisdiction with CDP E-09-010. A requirement of this CDP is to remove the trail and restore the area to natural conditions.

4.6.1 Existing ecological conditions

This area contains an approximately 6-ft-wide gravel walkway underlain by geotextile bordered by mowed grasses.

4.6.2 Mitigation goals, objectives, and success criteria

The goals, objectives, and success criteria for the Contractor Pedestrian Trail are as follows:

Goal 1: Establish a native plant community to extend the adjacent habitats in the Buhne Point Preserve

Objective 1: Restore vegetation to native plant species

Success criteria:

- 90% survival of planted trees and shrubs
- At least 70% cover of native perennial herbs or grasses between planted tree and shrub
- Less than 2% cover of invasive species

4.6.3 Mitigation implementation

4.6.3.1 Conceptual design

The gravel and underlying geotextile will be removed and the path graded to remove compacted fill. The area will be recontoured as needed to connect with the ISFSI stormwater detention basin and the Preserve. Following grading, surface soils will be ripped as needed to create suitable conditions for the vegetation installation. The conceptual design is shown in Figure 10. Detailed engineering plans will be completed prior to implementation.

4.6.3.2 Comprehensive vegetation specifications

The area will be become an extension of areas of adjacent ecotypes including coastal prairie, riparian forest/scrub, and the ISFSI stormwater detention basin. The area will be planted with a mix of native trees, shrubs, and herbaceous species appropriate for each habitat type (Table 10). Planting zones will be guided by existing adjacent vegetation in the Buhne Point Wetlands Preserve and hydrologic and topographic features (e.g., swales, edge of the Preserve). Vegetation will be propagated either through seed or nursery stock. Planting densities will range from one plant per 1 ft^2 to one plant per 9 ft^2, depending on the species. Seedlings and seed will be procured and installed by a qualified contractor. As much as possible, local plant stock collected around Humboldt Bay and growing under similar ecological conditions (e.g., soils, depth to groundwater) will be used.

4.6.4 Sea-level rise

This upland area will be restored with salt-tolerant species common to the local coastal environment. Sea level rise is not expected to have any direct effects on this area. Should sea level rise cause a shift in the adjacent Buhne Point Wetlands Preserve towards more brackish ecotypes, the species planted in the restoration area would potentially shift in dominance towards more salt-tolerant species (e.g., dune willow and Sitka spruce). The wide variety of native species chosen for this area will enable this shift to happen without a loss of ecosystem function. The enhancement area would not fail or be eliminated by sea-level rise of either the 2030 or 2050 predicted high-range values.

Figure 10. Proposed conceptual design for the Contractor Pedestrian Trail, Charlie Road, and Buhne Point Wetlands Preserve Fringe restoration areas.

Table 10. Suggested native plant species for the Contractor Pedestrian Trail, Charlie Road, and Buhne Point Preserve Fringe restoration areas.

Scientific name	Common name	Wetland indicator[1]
Coastal prairie		
Armeria maritima var. *californica*	thrift seapink	FAC
Calamagrostis nutkaensis	*Pacific reedgrass*	FACW
Cardamine oligosperma	bittercress	FAC
Danthonia californica	California oatgrass	FAC
Deschampsia cespitosa	tufted hair grass	FACW
Festuca rubra	red fescue	FAC
Hordeum brachyantherum	meadow barley	FACW
Iris douglasiana	Douglas iris	NL–UPL
Symphyotrichum chilense	Pacific aster	FAC
Riparian forest/scrub		
Alnus rubra	red alder	FAC
Asarum caudatum	wild ginger	FACU
Baccharis pilularis	coyote brush	NL–UPL
Fragaria chiloensis	beach strawberry	FACU
Garrya elliptica	coast silk tassel	NL–UPL
Holodiscus discolor	ocean spray	FACU
Lonicera involucrata	twinberry	FAC
Maianthemum dilatatum	two-leaved false-Solomon's-seal	FAC
Morella californica	wax myrtle	FACW
Picea sitchensis	Sitka spruce	FAC
Pinus contorta ssp. *contorta*	shore pine	NL–UPL
Polypodium calirhiza	licorice fern	NL–UPL
Polystichum munitum	western swordfern	FACU
Rubus ursinus	California blackberry	FACU
Salix hookeriana	dune willow	FACW
Rubus spectabilis	salmonberry	FAC
Sambucus racemosa	red elderberry	FACU
Scrophularia californica	California figwort	FAC
Vaccinium ovatum	evergreen huckleberry	FACU

[1] Lichvar et al. (2012 and 2014);
FAC: Facultative wetland plants—occur in wetlands and non-wetlands
FACW: Facultative wetland plants—usually occur in wetlands, but may occur in non-wetlands.
OBL: Obligate wetland plants—almost always occur in wetlands.
NL–UPL: Not listed—upland plants; any species not listed in this publication it is considered an upland plant—almost never occur in wetlands.

4.7 Buhne Point Wetland Preserve Fringe Area

The Buhne Point Preserve Fringe is an area along the southeast margins of the Preserve that is not legally or ecologically located within the boundaries of the Preserve. The restoration of this area to native plant species will mitigate for temporary and temporal impacts to wetlands that will occur as part of the implementation of the FSR plan.

4.7.1 Existing ecological conditions

This area contains upland plant species including grasses and non-native trees and is currently mowed and maintained as a landscaped area.

4.7.2 Mitigation goals, objectives, and success criteria

The goals, objectives, and success criteria for the Buhne Point Wetlands Preserve Fringe are as follows:

Goal 1: Establish a native plant community to extend the adjacent habitats in the Buhne Point Wetlands Preserve

Objective 1: Restore vegetation to native plant species

Success criteria:

- 90% survival of planted trees and shrubs
- At least 70% cover of native perennial herbs or grasses between planted tree and shrub
- Less than 2% cover of invasive species

Goal 2: Maintaining and enhance wildlife habitat value and use

Objective 1: Create standing snags and perches

Success criterion: Observe wildlife use (e.g., bird perching, resting, foraging) of snags

Objective 2: Enhance wildlife connectivity to the Buhne Point Preserve

Success criterion: Observe wildlife movement between the adjacent mitigation areas of the Buhne Point Preserve (e.g., Mit-3, Mit-B, Mit-A, Mit-4a and 4b)

4.7.3 Mitigation implementation

4.7.3.1 Conceptual design

This area will be restored with native plant species to provide continuity of native landscaping between the developed area and the adjacent habitats in the Buhne Point Preserve and the Contractor Pedestrian Trail. The non-native trees in this area (which include Monterey cypress and eucalyptus) will be assessed for habitat suitability. Two to three trees may be limbed and girdled to maintain as wildlife snags. The remainder of the non-native trees will be removed; some with exposed stumps to provide for additional structural diversity for wildlife as well as insects, and fungi/lichens. All trees removed will be replaced at a 2:1 ratio with native tree species (described below). The area will not be graded, but surface vegetation (non-native grass sod) will be removed and the soil will be tilled and amended as needed to remove as much of the seed bank as possible and create suitable conditions for vegetation installation. The conceptual design is shown in Figure 10. Detailed engineering plans will be completed prior to implementation.

4.7.3.2 Comprehensive vegetation specifications

The area will be planted with a mix of native trees, shrubs, and herbaceous species (Table 10). Planting zones will be guided by existing adjacent vegetation in the Buhne Point Wetlands Preserve and hydrologic and topographic features (e.g., swales, edge of the Preserve). Vegetation will be propagated either through seed or nursery stock. Planting densities will range from one plant per 01 ft^2 to one plant per 9 ft^2, depending on the species. Seedlings and seed will be procured and installed by a qualified contractor. As much as possible, local plant stock collected around Humboldt Bay and growing under similar ecological conditions (e.g., soils, depth to groundwater) will be used.

4.7.4 Sea-level rise

This upland area will be restored with salt-tolerant species common to the local coastal environment. Sea level rise is not expected to have any direct effects on this area. Should sea level rise cause a shift in the adjacent Buhne Point Wetlands Preserve towards more brackish ecotypes, the species planted in the enhancement area would potentially shift in dominance towards more salt-tolerant species (e.g., dune willow and Sitka spruce). The wide variety of native species chosen for this area will enable this shift to happen without a loss of ecosystem function. The enhancement area would not fail or be eliminated by sea-level rise of either the 2030 or 2050 predicted high-range values.

4.8 Frog Pond Stormwater Detention Basin

The existing Frog Pond stormwater detention basin will be redesigned to improve stormwater retention and treatment by making a larger, deeper basin and to fill in the area around the existing sewer lift station on three sides for better access.

4.8.1 Existing ecological conditions

The Frog Pond is a combination of semi-permanently and seasonally flooded palustrine persistent emergent wetland (Stillwater Sciences 2015). At least 6 inches of sediment has accumulated in the basin, which appears to be saturated year-round, with no standing water. The lowest portion of the basin is currently dominated by *Typha* sp. (cattail), which has recently died off due to saltwater intrusion from the Intake Canal, and areas of *Distichlis spicata* (saltgrass) and *Salicornia pacifica* (pickleweed) have begun to establish. Much of the rest of the basin consists of sloped areas dominated by non-native invasive grasses as well as the invasive Spanish heather and Pampas grass and a few native (*Morella californica*) (wax myrtle) and *Salix hookeriana* (dune willow).

4.8.2 Mitigation goals, objectives, and success criteria

The goals, objectives, and success criteria for the Frog Pond stormwater detention basin are as follows:

Goal 1: Improve the quality of stormwater flowing from industrial areas into the Buhne Point Wetland Preserve

Objective 1: Establish a vegetative basin with native perennial wetland species

Success criteria:

- 30% cover by native perennial plants
- Less than 2% cover of invasive species

4.8.3 Mitigation implementation

4.8.3.1 Conceptual design

Restoration in this area will involve grading and replanting to improve stormwater retention and treatment and remove and manage for invasive species. Access to the sewer lift station will be improved by filling in around it. Flows to this basin will be increased by channeling a portion of the HBPP Core Area stormwater runoff in this direction. In addition, flows into the detention basins from paved areas will be retained in the basin to remove large debris and particles.

This basin will be connected with the ISFSI stormwater detention basin. Stormwater will flow from this basin to the ISFSI basin through an adjustable-height weir. Water captured in this basin will eventually be released into the Buhne Point Wetlands Preserve via the ISFSI basin outfalls. A culvert connected to the Intake Canal will be replaced and retained for maintenance purposes so that it is easier to drain the basin for maintenance and for emergency overflow (for storm events larger than a 25-year storm), per RWQCB requirements.

The conceptual design is shown in Figure 11. Detailed engineering plans will be completed prior to implementation.

4.8.3.2 Comprehensive vegetation specifications

The Frog Pond stormwater drainage basin will be planted with native emergent perennial plant species within the basin and native grass and low lying herbaceous plants on the side slopes and upper area similar to the ISFSI stormwater detention basin (Table 7).

4.9 Charlie Road and Contractor Parking Lot #2

4.9.1 Existing ecological conditions

This area is currently paved roadways bordered by mowed grasses.

4.9.2 Mitigation goals, objectives, and success criteria

Goal 1: Establish a native plant community to extend the adjacent habitats in the Buhne Point Preserve and Buhne Point

Objective 1: Restore vegetation to native plant species

Success criteria:

- 90% survival of planted trees and shrubs
- At least 70% cover of native perennial herbs or grasses between planted tree and shrub
- Less than 2% cover of invasive species

4.9.3 Mitigation implementation

4.9.3.1 Conceptual design

The road surface will be removed and the area will be graded to remove compacted fill. The area will be recontoured to connect with the adjacent natural areas. Following site grading, surface soils will be ripped as needed to create suitable conditions for planting vegetation. Soils will be tested for salinity and nutrients, and soil conditioning will be prescribed as needed.

The conceptual design is shown in Figure 10. Detailed engineering plans will be completed prior to implementation.

Existing or imported clean fill will be used as needed to achieve the desired elevations in the mitigation area. Any additional clean fill from removal of the road base will be re-used on site or taken off-site to an appropriate facility. BMPs will be applied to prevent the soil from impacting the adjacent wetlands as described below in Section 5.

4.9.3.2 Comprehensive vegetation specifications

The area will become an extension of areas of adjacent ecotypes including coastal prairie and riparian forest/scrub. The area will be planted with a mix of native trees, shrubs, and herbaceous species appropriate for each habitat type (Table 10). Planting zones will be guided by existing adjacent vegetation, hydrologic, and topographic features (e.g., swales, hillslope). Vegetation will be propagated either through seed or nursery stock. Planting densities will range from one plant per 1 ft^2 to one plant per 9 ft^2, depending on the species. Seedlings and seed will be procured and installed by a qualified contractor. As much as possible, local plant stock collected around Humboldt Bay and growing under similar ecological conditions (e.g., soils, depth to groundwater) will be used.

4.9.4 Sea-level rise

The Charlie Road restoration area, though close in proximity, does not have a direct connection to Humboldt Bay. It is also sheltered from waves and salt spray by Buhne Point. The restoration area will be planted with a mix of species with varying salinity tolerances. If sea-level rise causes an increase in salinity due to groundwater intrusion, the species dominance would shift towards more salt-tolerant species. There would not be a loss of ecological function. The restoration area would not fail or be eliminated by sea-level rise of either the 2030 or 2050 predicted high-range values.

4.10 Alpha Road Overflow Parking Areas

Two small overflow parking areas along the east side of Alpha Road will be removed and restored.

4.10.1 Existing ecological conditions

These areas are currently graveled parking areas.

4.10.2 Mitigation goals, objectives, and success criteria

The goals, objectives, and success criteria for the Alpha Road overflow parking areas are as follows:

Goal 1: Establish a self-sustaining, low-maintenance, native plant community

Objective 1: Establish native plant landscape

Success criteria:

- 70% cover by native perennial plants
- Less than 2% cover of invasive species

4.10.3 Mitigation implementation

4.10.3.1 Conceptual design

The gravel surface of the parking areas will be removed and the areas will be graded to remove compacted fill. The area will be recontoured to connect with the adjacent natural areas. Following site grading, surface soils will be ripped as needed to create suitable conditions for planting vegetation.

The conceptual design is shown in Figure 11. Detailed engineering plans will be completed prior to implementation.

Existing or imported clean fill will be used as needed to achieve the desired elevations in the mitigation area. Any additional clean fill from removal of the parking areas will be re-used on site or taken off-site to an appropriate facility. BMPs will be applied to prevent the soil from impacting the adjacent wetlands as described below in Section 5.

Following grading, the exposed soils will be tested for salinity and nutrients, and soil conditioning will be prescribed as needed. Infiltration rates of the exposed soils will be measured and compared with the requirements for long-duration ponding, which is estimated using hydrologic models. If the soil infiltration rates are higher than anticipated, soil amendments (e.g., bentonite clay soil) will be mixed in with the existing soils to achieve the desired infiltration rates.

4.10.3.2 Comprehensive vegetation specifications

The Alpha Road parking areas will be planted with coastal bluff scrub vegetation (Table 8). Vegetation will be propagated either through seed or nursery stock. Planting densities will range from one plant per 1 ft^2 to one plant per 9 ft^2, depending on the species. Seedlings and seed will be procured and installed by a qualified contractor. As much as possible, local plant stock collected around Humboldt Bay and growing under similar ecological conditions (e.g., soils, depth to groundwater) will be used.

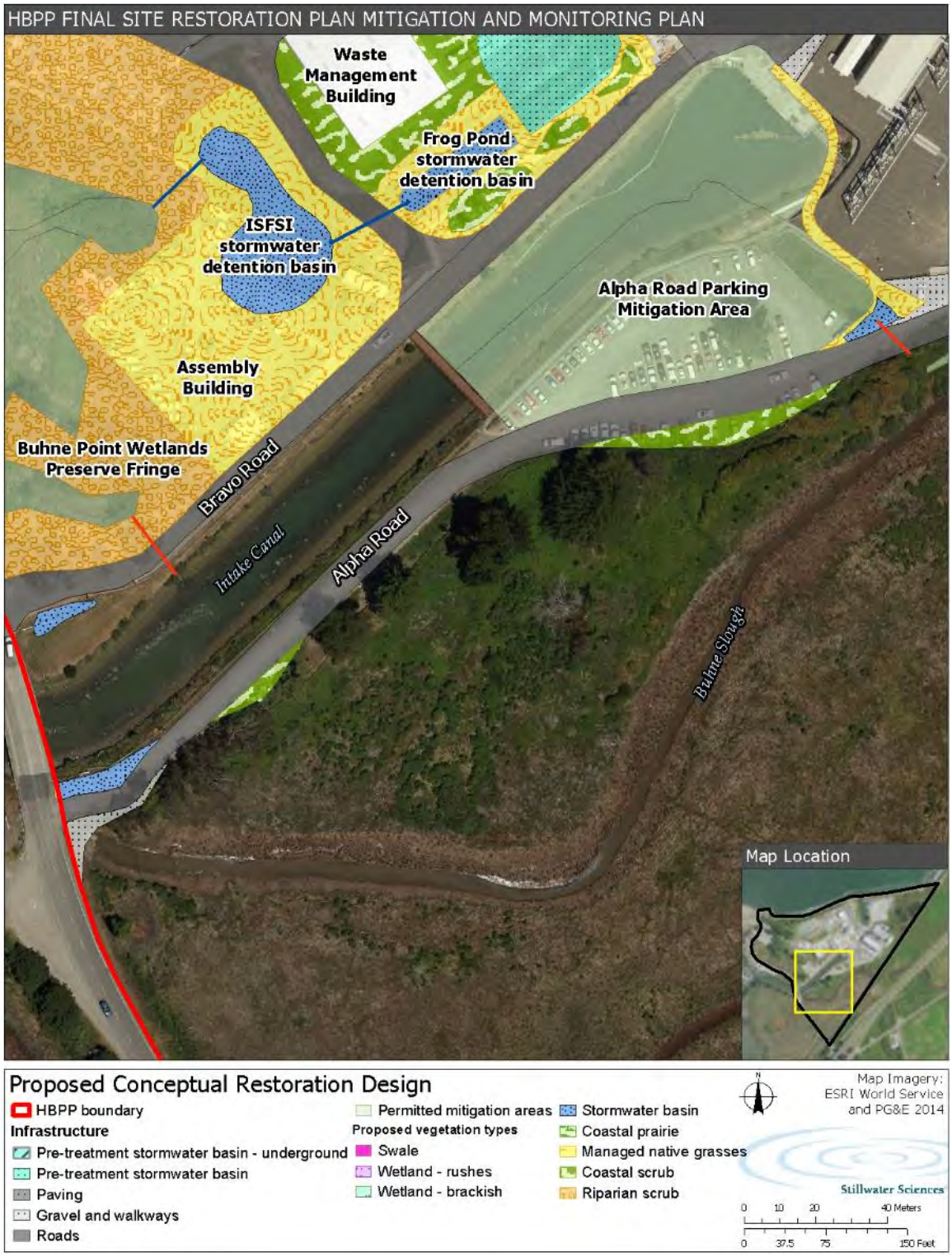

Figure 11. Proposed conceptual design for the Alpha Road overflow parking areas.

4.11 Assembly Building and Parking Area

The assembly building and parking area will be removed and restored.

4.11.1 Existing ecological conditions

This area is currently a paved parking area with several modular office buildings.

4.11.2 Mitigation goals, objectives, and success criteria

The goals, objectives, and success criteria for the Assembly Building and parking area are as follows:

Goal 1: Establish a self-sustaining, low-maintenance, native plant community

Objective 1: Establish native plant landscape

Success criteria:

- 70% cover by native perennial plants
- Less than 2% cover of invasive species

4.11.3 Mitigation implementation

4.11.3.1 Conceptual design

The buildings and paved surface of the parking areas will be removed and the areas will be graded to remove compacted fill. The area will be recontoured to connect with the adjacent natural areas. Following site grading, surface soils will be ripped as needed to create suitable conditions for planting vegetation.

The conceptual design is shown in Figure 7. Detailed engineering plans will be completed prior to implementation.

Existing or imported clean fill will be used as needed to achieve the desired elevations in the mitigation area. Any additional clean fill from removal of the parking areas will be re-used on site or taken off-site to an appropriate facility. BMPs will be applied to prevent the soil from impacting the adjacent wetlands as described below in Section 5.

Following grading, the exposed soils will be tested for salinity and nutrients, and soil conditioning will be prescribed as needed. Infiltration rates of the exposed soils will be measured and compared with the requirements for long-duration ponding, which is estimated using hydrologic models. If the soil infiltration rates are higher than anticipated, soil amendments (e.g., bentonite clay soil) will be mixed in with the existing soils to achieve the desired infiltration rates.

4.11.3.2 Comprehensive vegetation specifications

The Assembly Building and parking area will be planted with native upland grassland vegetation (Table 8). Vegetation will be propagated either through seed or nursery stock. Planting densities will range from one plant per 1 ft^2 to one plant per 9 ft^2, depending on the species. Seedlings and seed will be procured and installed by a qualified contractor. As much as possible, local plant stock collected around Humboldt Bay and growing under similar ecological conditions (e.g., soils, depth to groundwater) will be used.

4.12 Rain Gardens

Rain gardens will be created at strategic places around the property. The locations of these will be shown on the grading and drainage plan that will be completed prior to implementation. These are small vegetated swales designed to capture and treat stormwater runoff.

4.12.1 Existing ecological conditions

The rain gardens will be located in areas that are currently parking or laydown areas, roadways, or mowed grass and managed vegetation alongside existing roads.

4.12.2 Mitigation goals, objectives, and success criteria

The goals, objectives, and success criteria for the rain gardens are as follows:

Goal 1: Improve the quality of stormwater runoff

Objective 1: Establish vegetative swales with native perennial wetland species

Success criteria:

- 30% cover by native perennial plants
- Less than 2% cover of invasive species

4.12.3 Comprehensive vegetation specifications

The site rain gardens will be planted with native emergent perennial plant species (Table 7).

4.13 Restoration of Temporary Impacts: Alpha Road, Intake Canal, Buhne Point Wetlands Preserve, and Duck Pond Temporary Impacts

Implementation of the proposed FSR plan will permanently or temporarily impact several wetland areas around the HBPP site. Areas of permanent wetland impact are described above. Temporary impacts will occur in the following locations:

- Buhne Slough wetlands during the Alpha Road realignment and a culvert replacement at the north end of the Alpha Road Parking Area,
- in the Intake Canal during two culvert replacements (connecting to the Frog Pond stormwater detention basin and the Buhne Point Wetlands Preserve),
- in the Frog Pond during the grading and restoration of the stormwater detention basin,
- in the Duck Pond when the Shoreline Wetland mitigation area is created and connected to the existing adjacent wetland, and
- in the seasonal wetlands along King Salmon Avenue near the lower contractor parking area when Mit-7 is created and connected to the existing adjacent wetland.

These areas will be restored in the same location immediately following the temporary impacts from construction activities.

4.13.1 Existing ecological conditions

The temporarily impacted areas are a mix of fresh and brackish wetlands, waters of the U.S., and adjacent coastal prairie habitat.

4.13.2 Mitigation goals, objectives, and success criteria

The goals, objectives, and success criteria for restoration in temporarily impacted areas are as follows:

Goal 1: Restore temporarily impacted areas

Objective 1: Establish native vegetation

Success criterion: Percent cover is at least 95% of pre-construction density

Success criteria:

- 70% of cover is made up of native plants
- Less than 2% cover of invasive species

4.13.3 Mitigation implementation

Impacted areas will be recontoured to match previous or adjacent contours. Clean fill will be used as needed to fill in any voids left by the work (e.g., removing the pedestrian bridge footings). There are no conceptual plans for these areas.

4.13.3.1 Comprehensive vegetation specifications

Impacted areas will be assessed and planted with native species to match previous or adjacent ecotypes (Table 11). Non-native species will be removed from the impact area prior to planting. Planting densities will range from one plant per 1 ft^2 to one plant per 9 ft^2, depending on the species. Seedlings and seed will be procured and installed by a qualified contractor. As much as possible, local plant stock collected around Humboldt Bay and growing under similar ecological conditions (e.g., soils, depth to groundwater) will be used.

Table 11. Suggested native plant species for temporarily impacted areas.

Scientific name	Common name	Wetland indicator[1]
Salt marsh		
Salicornia pacifica	Pacific pickleweed	OBL
Distichlis spicata	salt grass	FACW
Triglochin maritima	common arrow-grass	OBL
Coastal prairie		
Armeria maritima var. *californica*	thrift seapink	FAC
Calamagrostis nutkaensis	*Pacific reedgrass*	FACW
Cardamine oligosperma	bittercress	FAC
Carex praegracilis	clustered field sedge	FACW
Carex obnupta	slough sedge	OBL
Danthonia californica	California oatgrass	FAC
Deschampsia cespitosa	tufted hair grass	FACW
Distichlis spicata	saltgrass	FACW
Festuca rubra	red fescue	FAC
Hordeum brachyantherum	meadow barley	FACW
Juncus effusus	soft rush	FACW
Juncus lesceurii	San Francisco rush	FACW
Symphyotrichum chilense	Pacific aster	FAC

[1] Lichvar et al. (2012 and 2014);
FAC: Facultative wetland plants—occur in wetlands and non-wetlands
FACW: Facultative wetland plants—usually occur in wetlands, but may occur in non-wetlands.
OBL: Obligate wetland plants—almost always occur in wetlands.

NL–UPL: Not listed—upland plants; any species not listed in this publication it is considered an upland plant—almost never occur in wetlands.

4.13.4 Sea-level rise

The areas needing restoration for temporary impacts will be restored to the original native ecotypes. Species chosen will have a range for salinity tolerance and are expected to be able to withstand a shift to more brackish conditions that will come with increasing sea levels.

5 PROPOSED BEST MANAGEMENT PRACTICES

In addition to BMPs detailed in the Project SWPPP, the following measures have been proposed to minimize impacts on natural resources as a result of FSR plan implementation. A qualified biologist will provide environmental awareness training to all construction personnel prior to the start of construction. The training will include descriptions of any species or habitats of concern in the Project area and a review of all conservation measures and BMPs that will be implemented during the FSR plan implementation.

5.1 Wetlands

- Construction footprint will be minimized to the extent possible to avoid impacts on existing wetlands adjacent to Project impact areas.
- In-water work will be avoided to the extent possible by working during periods of low tide.
- Silt fencing will be installed as needed to protect adjacent wetland ecosystems from sediment input from construction sites.

5.2 Plants

- Identified populations of special-status plants adjacent to Project impact areas will be marked and avoided. If the special-status plant species cannot be avoided, a plan will be developed in coordination with the appropriate agencies (e.g., relocating the plants to comparable habitat in the Preserve or another suitable location on-site).
- Construction footprint will be minimized to the extent possible to avoid impacts on existing special-status plant populations adjacent to Project impact areas.
- The CCC-jurisdictional wetland on Bayview Heights will be assessed prior to construction to determine if any native plants should be salvaged and transplanted into other areas of the site or returned to the nursery for propagation.
- When working in vegetated areas, the following practices will be employed to limit spread of invasive plants:
    - Remove or treat seed sources of viable reproducing invasive plant parts that could spread due to construction disturbance (e.g., cut Pampas grass and other seed heads prior to germination).
    - Avoid moving weed-infested materials (i.e., gravel, and other fill materials) to weed-free locations.
    - Prior to entering or leaving the Project site, vehicles and equipment (including undercarriages) should be inspected for seeds or plant parts. If plant parts are found, clean vehicles and equipment of all mud, dirt, and plant parts.

- Only weed-free, native seed will be used on site. Seed mixes will be verified by the Project biologist prior to spreading to ensure:
    - The species are approved by PG&E for use at HBPP.
    - The seed mix does not contain invasive plants. Note: seed that is certified to be "noxious weed free" may still contain non-native invasive plants that are not included on the California Department of Food and Agriculture noxious weed list.
- Impact areas will be assessed prior to construction to determine if there are any plants that would be appropriate to salvage or use as a seed source. If so, plants will be salvaged for propagation at local a nursery for later use or transplanting directly to a restoration or mitigation area.

5.3 Wildlife

The following proposed protection measures will minimize the risk of impacts on the northern red-legged frogs, Townsend's big-eared and pallid bats, and bird species protected under the MBTA.

- Prior to construction within suitable amphibian habitat, an amphibian rescue effort will be conducted in an attempt to clear the area of individuals that are present. Eggs may be present during the breeding season (October through early March), tadpoles during the pre-metamorphosis season (March through August), and adults year-round. Any egg masses, tadpoles, or adults captured will be relocated to suitable habitat (e.g., within the existing Mit-2 pond in the Preserve.
- A biological monitor will be present during activities that impact or remove wetlands and amphibian habitat. Once the habitat is removed, a biological monitor will no longer be required.
- If work occurs during the bird nesting season (February 15 to August 31), a pre-construction nesting bird survey will be conducted by a qualified biologist within one week prior to commencement of construction activities, including clearing any vegetation or ground disturbance. If active nests are found, appropriate buffers will be established and communication with agencies on further action will be conducted. In accordance with the MBTA, if an active bird nest is observed within or near Project construction sites, work will cease, care will be take not to harm the nest, and the work supervisor will contact the Project-designated PG&E Biologist.
- Biologist will survey for cavities, suitable for Townsend's big-eared and/or pallid bat roosting habitat, at any tree slated for removal as part of the FSR plan implementation. If such a cavity is identified, an assessment of bat use will be initiated by a qualified wildlife biologist. If the cavity shows bat habitation, then the tree and a screen of trees immediately surrounding it, if present, will be retained.

6 MONITORING METHODS

Annual monitoring will occur for at least five years or until success criteria are met, at which point annual monitoring and maintenance for that area will cease and a final report demonstrating success of the mitigation will be prepared and submitted to the appropriate agencies (see Section 7).

6.1 Wetlands

Hydrologic condition surveys will be conducted following the first significant rainfall event that brings greater than 2 in of rain in a two-week period. The first year after construction, the first survey will be followed weekly for three consecutive weeks (for a total of four surveys). A two-person team will map the boundary of visible inundation in the Shoreline Wetland mitigation area using a sub-meter GPS. Areas of inundation will then be calculated using GIS software. In successive years, the hydrologic condition survey will be conducted during the first and fourth weeks with a GPS unit and with site visits during interim weeks (second and third) to confirm that the area is remaining saturated for the entire survey period.

At the end of the monitoring period, a wetland delineation will be conducted using the USACE Western Mountain Coast and Valley Region standard protocols to determine the amount of wetlands created in each restoration and mitigation area.

6.2 Plants

Mitigation and restoration areas will be monitored twice annually to evaluate vegetation establishment, re-vegetation success, and native and non-native plant recruitment. Monitoring will occur in spring and summer, to capture the blooming periods of herbaceous plant species to facilitate accurate species identification and precise assessments of the percent of vegetation and species cover. Sample plots or transects will be used to estimate the total plant cover and cover of individual plant species. Total cover, percent cover by species, percent hydrophytic vegetation, and percent of native versus non-native vegetation will calculated, averaged across all plots, and compared with the annual performance objectives (Table 5). To illustrate site changes over time, photographs will be taken during the monitoring efforts at set photopoint locations established throughout the mitigation area.

Native and non-native status will be determined using current Calflora and Cal-IPC databases. Invasive plants are defined as those species with a high rating on the most current Cal-IPC Invasive Plant Inventory Database.

6.3 Wildlife

Wildlife surveys will record the use of amphibians, reptiles, birds, and mammals within a mitigation area. When required by the applicable success criteria, adjacent or comparable habitats will be surveyed. The comparison sites for wildlife monitoring will be determined during the first year of monitoring in order to select the most comparable or similar habitat type; hydrology and vegetation in the comparison site may change by the time the monitoring of the mitigation sites are implemented. The intention is to identify a comparison site(s) that is established, at a later successional stage than the mitigation site, and similar to the desired habitat at the mitigation site.

Surveys will be conducted quarterly to sample presence and life stages of wildlife species. Methods for sampling include the search method, which consists of spending a minimum of 10 minutes in each mitigation area to document the direct observation of amphibians (egg mass, juvenile, adult), reptiles, birds, and mammals or any evidence that indicated their presence (e.g., tracks, scat, feathers/hair, browsing of vegetation). Birds will be considered using the habitat if they are observed perching, nesting, and/or foraging on or gleaning insects on the wing. Birds flying overhead at a significant enough elevation to not be foraging and thus not using the restored habitat would not be included. Surveys will be initiated in the morning and conducted during calm weather. Representative species and habitat photos will be taken and reported.

7 REPORTING

Results of the annual monitoring of the mitigation areas will be summarized in a report and distributed to the appropriate regulatory agencies. These reports will present a summary of the data collected and present conclusions regarding whether the annual performance objectives are being met and, if needed, provide recommendations for adaptive management (i.e., additional planting and/or weeding). Reports will include the following sections:

- Introduction
- Maintenance activities performed
- Monitoring methods
- Monitoring results (e.g., qualitative and quantitative results compared with baseline data from the initial planting, comparisons with previous years' data, etc.)
- Time-series photographs
- Status of achievement towards success criteria
- Recommendations for adaptive management
- Agency signature page for approval of completion of monitoring requirement

At the end of the monitoring period, a final report demonstrating success of the mitigation will be prepared and submitted to the appropriate agencies for approval and concurrence that the success criteria have been met and monitoring is completed. Reporting will discontinue once all success criteria have been met.

8 MAINTENANCE

Plant protectors will not be installed initially. If herbivory damage is noted during the annual monitoring and is found to be impacting seedling success to the extent that the success standards may not be attained, then plant protectors will be installed. Herbaceous vegetation will be planted immediately prior to the wet season; therefore, irrigation will not be planned initially for newly planted vegetation. However, if it appears that vegetation is not establishing due to dry hydrologic conditions, the plants may be watered during the first few years after planting to help them establish. Any irrigation used will be temporary, as plants will be need to be self-sustaining with no irrigation for at least 2 years prior to meeting success criteria.

Restoration and mitigation areas will undergo annual maintenance during the monitoring period. Annual monitoring will note any invasive plant species that should be removed from the area and any plants that are not establishing, and indicate where adaptive management is needed. Maintenance activities will be directed as needed based on the results of the annual monitoring. Maintenance may include watering (either by hand or with an irrigation system), installation and maintenance of plant protectors as needed, mulching, weeding in the immediate vicinity of planted vegetation to reduce competition, and removal of non-native plants throughout the area.

Areas of coastal prairie and managed native grasses will be mowed and/or cut with a brush cutter (weed whacker) either annually or seasonally, as needed. Mowing will be done to a high level to mimic grazing. Management frequency will be recommended by the Project biologist during the monitoring period based on site conditions.

In the unlikely instance that the stormwater detention basins would need to be cleaned of accumulated sediment, the Project biologist will be consulted to recommend minimization and avoidance measures and to prescribe restoration. Any areas requiring restoration will be monitored annually for five years or until the area has reached 80% of its pre-impact percent cover.

9 ADAPTIVE MANAGEMENT

If results from the annual monitoring indicate that the success criteria have not been met or are not likely to be met by the end of the five-year monitoring period, then additional maintenance and/or remedial action (e.g., additional planting) will be specified. Any maintenance or remedial action determined to be necessary will be initiated as soon as feasible to increase the likelihood of timely success. The mitigation areas are complex ecological systems, each with a unique variety of environmental influences including fluctuating hydrologic conditions, weather conditions, plant viability, and invasive weed colonization. Because of this, no set strategy is appropriate for all the areas and adaptive management is the best way to effectively plan for the success of the mitigation areas.

10 EXPECTATION OF SUCCESS

Wetland creation in the Mit-7 and Shoreline Wetland mitigation areas is anticipated to be successful because the newly created areas will be connected hydrologically to the adjacent existing or proposed wetlands. Newly planted wetland plants are expected to readily establish in the new habitat and likely spread from adjacent areas. Additionally, prior to grading and creation of the wetland mitigation areas, soil infiltration testing will be performed and the soil will be amended as needed to achieve the desired infiltration rates. Selecting a variety of native plants with different saltwater tolerance will allow the species to adapt to changes in salinity as a result of changing site conditions or sea level rise. Native plants are also adapted to the region and will have a higher likelihood of successful establishment and growth in the coastal, often exposed, environment at the HBPP site.

Wetland restoration areas are expected to be successful because the ecosystems proposed for restoration will be similar to the ones that existed prior to impacts. Often, impacts will be small in size, which will allow adjacent native plants to spread to the impacted area.

Annual monitoring and maintenance will help track the growth and establishment of the vegetation. If it appears over time that the final success criteria will not be achieved, adaptive management (e.g., additional planting, invasive plant species removal) will be proposed for permitting agency approval and implemented.

11 AGENCY APPROVAL

To provide a mechanism for agency acknowledgement of adaptive management actions and completion of monitoring when a mitigation area has completed the required monitoring period and met its success criteria, an agency approval section will be included in applicable annual monitoring reports. This section will contain a status summary of each mitigation and restoration

area and a signature page for each agency to acknowledge and approve modifications related to adaptive management or performance success and completion if they concur with the submitted findings. Once approval has been granted for performance success and completion of required monitoring, the management and monitoring of the mitigation area will be overseen by HBGS Environmental Management.

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APPENDIX C

FEBRUARY 2016

Conceptual Fencing Plan for the Humboldt Bay Power Plant Final Site Restoration Project

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Cover photos: Photos taken by Stillwater Sciences 2015. Switchyard (top left), Buhne Point Wetlands Preserve (top right), Duck Pond (bottom right), and HBGS (bottom left).

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Figures

1 INTRODUCTION

As part of the Pacific Gas and Electric Company (PG&E) Humboldt Bay Power Plant (HBPP) Final Site Restoration (FSR) plan implementation, the fencing on the HBPP property will be modified. The conceptual fencing design is shown in Figures 1 and 2; each fence type is discussed below. Gates will provide for pedestrian and vehicle access within the secure boundary of the industrial portion of the property and allow for access to the adjacent natural areas (e.g., Shoreline Wetland mitigation area). The exact location of the gates noted on Figures 1 and 2 may be modified as needed for site security needs.

2 INDEPENDENT SPENT FUEL STORAGE INSTALLATION

There are three tiers of fencing for the Independent Spent Fuel Storage Installation (ISFSI) (Figures 1 and 2): (1) the inner-most fenceline surrounds the Security Area (SA), (2) the middle fenceline is the Security Boundary Fence (SBF), and (3) the outer fenceline surrounds the Owner Controlled Area (OCA). The SA fencing is, at minimum, an approximately 10-foot-tall chain-link fence with three strands of single-angled barbed wire at the top. The SBF and OCA fencing are standard PG&E security fence (Figure 3), chain-link with 2-inch mesh size, a minimum height of 8 feet, and three strands of single-angled barbed wire at the top (Figure 4). All ISFSI fences conform to minimum PG&E fencing specification detailed in PG&E utility bulletin TD-059659B-001 (Rev. 2 dated 30 May 2013) as shown in Figure 3. There will be no change to the location or specifications of the existing the SA or SBF fencing. The location, but not the specifications of the OCA will change as a result of FSR plan implementation.

Figure 1. HBPP Final Site Restoration Conceptual Fencing Plan

Figure 2. HBPP Final Site Restoration Conceptual Fencing Plan with the FSR Plan conceptual design.

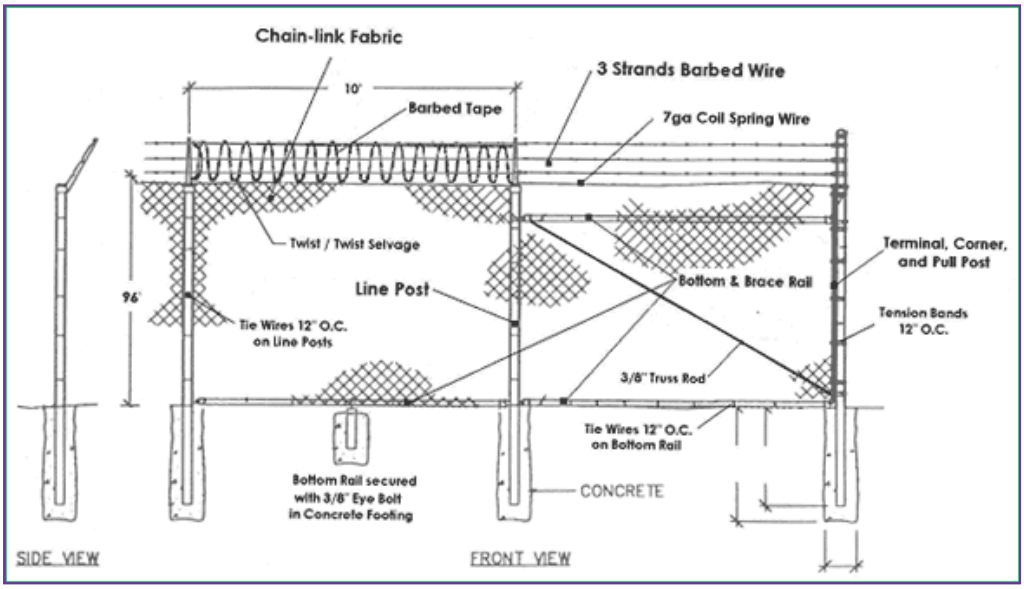


Figure 3. Typical detail of an 8-foot-high with 1-foot, three-strand barbed wire security fence.

Figure 4. OCA fencing along north side of ISFSI looking north.

3 SWITCHYARD

Existing fencing around the 60-kV switchyard consists of a "non-visible" chain link with 3/8-inch openings to prevent climbing and cutting. It is 8 feet tall with standard "V"-shaped three-strand barbed wire at the top for an overall height of 9 ft (Figure 5). This fencing conforms to minimum PG&E fencing specification detailed in PG&E utility bulletin TD-059659B-001 (Rev. 2 dated 30 May 2013). There will be no change to the current specifications of the 60-kV switchyard fence,

but there will be a slight modification in the location of the fenceline adjacent to the Intake Canal mitigation area.

Figure 5. Example of existing switchyard fencing.

4 HUMBOLDT BAY GENERATING STATION

Most of the existing Humboldt Bay Generating Station (HBGS) fencing has equivalent specifications as the ISFSI OCA (i.e., 2-inch mesh, 8-feet-tall, single-angled three-strand barbed wire) (Figure 6). This existing HBGS perimeter fencing will either remain as-is (i.e., 2-inch mesh) or will be replaced with 3/8-inch, non-climb, non-visible mesh. New HBGS fencing will have the equivalent fencing as the switchyard (i.e., 3/8-inch, non-climb, non-visible mesh). A portion of the HBGS area is secured by a 10-foot-tall concrete containment wall (Figure 7).

Figure 6. Existing HBGS fencing.

Figure 7. Existing HBGS containment wall.

5 INTAKE CANAL VEHICLE BARRIER

Most of the Intake Canal will be bordered by a wildlife-friendly W-beam guardrail vehicle barrier to prevent vehicles from entering the canal should they leave the road. The W-beam guardrail is the most widely used highway barrier. Its name comes from the shape of the beam used as the rail element of the guardrail, which is supported at 27 ¾-inch intervals by strong posts (wood or steel) and a "block out" to provide space between the post and beam. Currently, there is a section of W-beam guardrail along the southern portion of the Intake Canal (Figure 8).

Figure 8. Existing W-beam guardrail between Intake Canal and Alpha Road.

6 EXISTING BOUNDARY FENCING

Existing fencing on the HBPP property boundary along King Salmon Avenue, the railroad track berm, and between the Shoreline Trail and Wren Marsh consists of metal fence posts with 4 strands of barbed wire (Figure 9). These fences are marked with "private property" and "no trespassing" signs. No change is proposed to the existing boundary fence in these locations.

Figure 9. Existing boundary fence between King Salmon Avenue and the Buhne Point Wetlands Preserve.

7 WILDLIFE-FRIENDLY FENCING

Wildlife-friendly fencing will be located on property boundaries that do not require a high security barrier, and between the proposed stormwater basins and adjacent mitigation areas. This will consist of typical metal fence posts strung with 1–3 strands of 12½-gauge smooth wire. The top-most wire will be no more than 42 inches above the ground and the bottom wire will be 20 inches above the ground. If a third strand of wire is used, it will be placed between 24 and 30 inches above the ground (i.e., at least 12 inches below the top wire) (Figure 9). The fence design will be tailored to each specific area and need, but all will be based upon the Arizona Game and Fish Department Wildlife Compatible Fencing Guidelines (www.azgfd.gov). Signs will be placed along the boundary fencing at appropriate intervals to notify the public of private property and sensitive habitat areas.

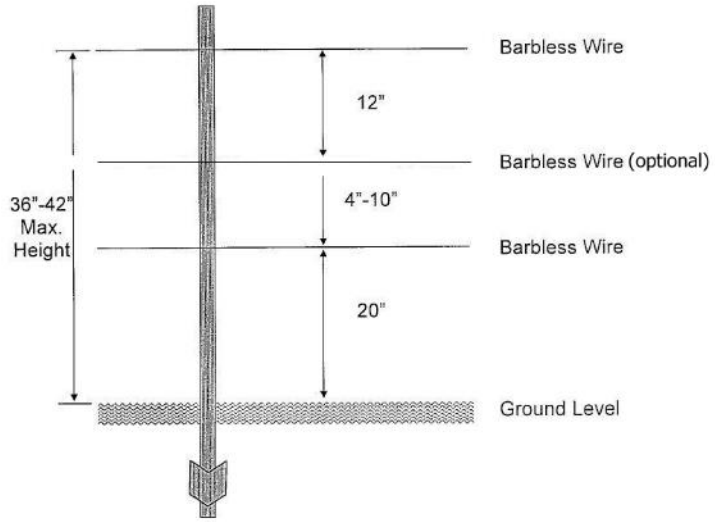


Figure 10. Typical detail of a wildlife-friendly fence (modified from Arizona Game and Fish Department Wildlife Compatible Fencing Guidelines, www.azgfd.gov).

APPENDIX D

Martin Slough Enhancement Project - Pacific Gas & Electric Gas Line Protection, Relocation, and Decommissioning

As part of the proposed project, PG&E will relocate an existing 6-inch natural gas line (line L 126A) and decommission an existing 4-inch gas line (Line L 126B) (collectively called the gas line project) in support of a larger restoration project called the Martin Slough Enhancement Project. The purpose of this project is to enhance a portion of Martin Slough and associated wetlands and riparian habitat, with the objectives of enhancing plant, fish, and wildlife habitat, improving water quality, increasing resiliency to climate change, and reducing flooding. Martin Slough is the lowest tributary to Elk River and is located approximately ?? miles northeast of PG&E's HBPP site.

The gas line project is necessary because the enhancement project would result in excavating soil from the channel and adjacent floodplain and reduce the soil cover over the gas lines to less than PG&E's required minimum depth of coverage. Currently the 6-inch gas line does not meet PG&E's standard of 5 feet of soil cover over the gas line, including under stream channels. The 4-inch gas line meets the standard under the channel but if the marsh plain was extended to this location, the depth of soil cover would not meet PG&E's standards. However it is a redundant line and PG&E has proposed to decommission it rather than relocate it. PG&E has also agreed that the scour protection designed for the 12-inch gas line (L 177) will be acceptable and the line won't need to be re-located.

The gas line relocation will involve temporarily shutting off the gas supply and venting the gas in the line into the atmosphere. After the gas is evacuated from the 6-inch gas line, a pit will be excavated at the zero station on the gas line to expose it sufficiently to have access to all sides of the pipe. Installation of 130 feet of new 6-inch gas line will be implemented either using an open trench or directional drilling. Prior to installation of the new gas line, the old gas line will be removed. Where the gas line crosses the channel, coffer dams will be installed upstream and downstream of the crossing and the work area will be dewatered by pumping. Stream flow will be routed around the work area by pumping. Energy dissipation will be employed at the stream bypass outlet to prevent an increase in turbidity downstream of the outlet. Prior to installing the coffer dams, temporary fish screens will be installed upstream and downstream of the coffer dams. A qualified and licensed fish biologist will capture fish within the work area by seining. Fish will be identified to species and temporarily placed in aerated buckets. The biologist will be present during the de-watering of the work trench to ensure that any fish or amphibians that eluded capture during the seining are captured and relocated during the de-watering. The pump intake will be screened to prevent the intake of aquatic organisms. Once the site is de-watered and all fish and amphibians have been captured, they will be released back into the channel upstream of the de-watered section. The intake for the stream bypass will be placed between the upstream fish screen and coffer dam and it will have a screened intake with a mesh size opening no greater that 3/16 inch. The outlet of the stream bypass pipe will be discharged into an energy dissipater to prevent scour of the channel and creation of turbidity that will exceed background levels.

If an open trench is used to install the new gas line, shoring will be installed according to OSHA-approved standards as the trench is excavated. The trench will be dug to a sufficient depth to

accommodate the new gas line, including the minimum depth of soil cover (5 feet) over the pipe. The design channel depth at this location is -1.0 feet (note – all elevation references are in NAVD 88). The top of the new gas line will be at the depth recommended by PG&E engineers to provide allowance for unanticipated-future-channel scour in addition to the minimum depth of soil cover. The maximum elevation for the top of the gas line is anticipated to be -6.0 feet (after relocation).

If directional drilling is used, the station zero pit (on the south side of the channel) will be dug to sufficient size to facilitate the drilling machinery and operators and to sufficient depth to allow installation of the new gas line at a maximum depth of -6.0 feet. Shoring will be installed according to OSHA-approved standards. The gas line will be cut at station zero and at approximately station 130 on the north side of the channel. Sections of old pipe that interfere with the installation of the new gas line or stream flow within the channel upon enhancement project completion will be removed and disposed of at a metal recycling facility. A receiving pit will be excavated on the north side of the channel. Shoring will be installed according to OSHA-approved standards. After the bore hole is created, new 6-inch gas line will be pulled through the bore hole and re-attached to the existing gas line. After the line is pressure tested, the bore holes will be filled in, the coffer dams will be removed, the fish screens will be removed, and the gas line will be put back in service.

The 4-inch gas line will be decommissioned in place as PG&E has determined that it is a redundant line and its removal will not affect service to its customers. After venting, the gas line will be cut and capped. The gas line under the channel will not be removed. Based on pot-holing conducted by RCAA under the supervision of PG&E, the elevation of the 4-inch gas line was determined to be sufficiently deep under the channel that it will not interfere with stream flow, even after the channel is excavated to -1.0 feet as called for in the project plans.

APPENDIX E

Importance of the Humboldt Bay Power Plant Site

To better understand the need for certain developed areas to remain dedicated to utility uses post-decommissioning, particularly those areas associated with HBGS, it is important to understand the significance of the HBPP site as the primary source of electricity generation in the region. The HBPP historically provided—and now the HBGS provides—the majority of the electrical power used in Humboldt County, an electrical service area that has been referred to as the "Humboldt Load Pocket." The Humboldt Load Pocket consists largely of the greater Humboldt County area. In terms of electrical demand, it functions almost as an island at the northwestern extremity of PG&E's electrical system. Imports to and exports from the load pocket are constrained because of the existing structure of the transmission system. Winter storms regularly upset the transmission infrastructure, and considering the remoteness of much of the transmission system, it is imperative that reliable generation with rapid response capability be located within the Humboldt Load Pocket. For these reasons, regional electricity demand was historically primarily served by HBPP and is now largely served by the HBGS, which is specifically designed to provide rapid response and easily controlled load ramping for voltage support.

The CCC has long recognized the importance of the HBPP site as a location for power generation in the Humboldt Area. Specifically, in its 1978 document entitled *Designation of Coastal Zone Areas Where Construction of an Electric Power Plant Would Prevent Achievement of the Objectives of the California Coastal Act of 1976,* which was revised and re-adopted in 1985*,* the CCC designated certain areas along the coast where siting a power plant would prevent the achievement of the objectives of the California Coastal Act (CCA). For the HBPP site, the report states:

> The Pacific Gas & Electric Company operates the Humboldt Bay (mobile emergency) oil-fired power plant in the coastal zone area shown on this map. It also has a nuclear plant that is shut down at present, and may permanently shut down because of the discovery of faults and related seismic hazards in the area. **A substantial area is not designated in order to provide for reasonable expansion**. (Emphasis added)

In preparing the HBPP FSR Plan, PG&E sought to balance requirements to restore areas of the site with the operational requirements of the ISFSI and HBGS and obligations to continue to safely store the spent fuel from the HBPP nuclear unit and generate electricity for the Humboldt area, respectively. Given the needs and requirements, there are areas PG&E is proposing not to restore for ecosystem uses because they are needed as ancillary facilities for the operation of the ISFSI and HBGS. These areas and the necessity for them are discussed herein.

Independent Spent Fuel Installation

Nuclear Regulatory Commission (NRC) Requirements. ISFSI support personnel, specifically, the ISFSI security staff, are proposed to be permanently housed in the Environmental Count Room once HBPP decommissioning is complete. Pursuant to 10 Code of Federal Regulations (CFR)

73.51, *Requirements for the physical protection of stored spent nuclear fuel and high-level radioactive waste*, the ISFSI must be protected by an onsite security organization.

Section (a)(3)(d)(5) states:

> The security organization must include sufficient personnel per shift to provide for monitoring of detection systems and the conduct of surveillance, assessment access control, and communications to assure adequate response.

To comply with these requirements, ISFSI security personal must be housed near the ISFSI. The location of the Environmental Count Room and the access to the ISFSI via Portal Road satisfy the NRC requirements for protecting the ISFSI.

Humboldt Bay Generating Station

Onsite Warehouse. In order to shut down the HBPP, additional power generation first had to be developed on the site. There was minimal space available to add this generation given that the HBPP site is surrounded by wetlands and coastal waters. A 5.4-acre area was allocated to the HBGS, as this was the space within the existing HBPP site that was available at that time, given the multiple demands of ISFSI construction, operations of the HBPP, and later, its decommissioning. A workshop and warehouse for the HBGS were part of the original design, in conformance with industry standards, but would not fit within the available space. A larger site would have required filling the adjacent tidal slough.

The HBGS site is small when compared with power plants of the same type and scale. Table 3-3 provides information on 10 power plants comparable to HBGS. They are between 100 and 200 megawatts (MW) and were permitted by the California Energy Commission (CEC). As shown in the table, the average output of the plants is 162 MW, and the average acreage is 10.9 acres. At 163 MW and 5.4 acres, the HBGS site is substantially smaller – ½ to ⅓ the size – than the other plants. In addition, the plants listed have onsite warehouses.

Table 3-3. Megawatt production and acreages of 10 power plants comparable to HBGS.

Power Plant/Owner	CEC Case No.	MW	Acreage
El Centro Unit 3 Repower – Imperial Irrigation District	2006-SPPE-02	128	12.5
Wildflower Indigo – Intergen	2001-EP-02	135	10.0
Los Esteros Combined Cycle – Calpine	2003-AFC-02	140	15.0
Tracy Combined Cycle – GWF	2008-AFC-07	145	16.4
Roseville Combined Cycle – Rosevillle Electric	2003-AFC-01	160	12.0
Humboldt Bay Generating Station – PG&E	2006-AFC-07	163	5.4
Tracy Peaker – GWF	2001-AFC-16	169	10.3

APPENDIX E

Power Plant/Owner	CEC Case No.	MW	Acreage
Los Esteros Simple Cycle	2001-AFC-12	180	15
Canyon Power Plant –City of Anaheim	2007-AFC-09	200	10
Mariposa Peaker Project – Diamond Energy	2009-AFC-03	200	10
Average MW and Acreage		**162**	**10.9**

Because of the space constraints on the HBGS site, there is not an onsite warehouse. To address the need for warehouse space, HBGS now rents a warehouse offsite and several miles away in Arcata. This is less than ideal, since it has the potential to affect PG&E's ability to reliably provide electricity for the Humboldt area. Specifically, the parts stored at the offsite warehouse are essential to ensure the continuous, reliable operation of the HBGS. When a part requires replacement, HBGS faces significant delays in replacing the part(s), since an operator must first travel to and from the offsite warehouse to obtain it. This has an impact on the reliable operations of the plant, since equipment could be out of commission for longer than what is typical, due to the travel associated with obtaining the replacement part(s).

Besides the potential effect on reliability, there are other downsides with the offsite warehouse, one of which is security. The parts inventory at the offsite warehouse is extremely valuable. However, the security there is inferior to the security at the HBGS. The CEC required PG&E to prepare an Operations Security Plan for the HBGS, which includes standard provisions for power plant security. At a minimum, the plan had to include specifications for: (1) permanent full-perimeter fence or wall, at least 8 feet high; (2) a main entrance security gate; (3) site access controls for employees, contractors, vendors, and visitors; (4) a closed-circuit television (CCTV) monitoring system and cameras that can pan, tilt, and zoom; and (5) perimeter breach detectors or onsite motion detectors. The plan PG&E originally prepared for the HBGS would be modified as a result of the expanded site boundary to ensure that the area within the expanded boundary, which includes the Waste Management Building for use as a warehouse, is secure.

The offsite warehouse also raises safety concerns. Power plant personnel are continually traveling to and from Arcata to pick up parts stored at the warehouse. This increases the chance for a vehicle accident. Often times, the personnel are delivering the equipment in large trucks or semis. This increases the safety concern, given the weight of the vehicles, particularly when they are transporting heavy pieces of equipment. The trips to and from Arcata also add to an unnecessary increase in air emissions.

An onsite warehouse is an integral component of a power plant. It serves as a BMP for the effective and efficient operation of a plant. Use of an offsite warehouse is highly unusual. HBGS has operated without an onsite warehouse since it started operation because there was no other option. The decommissioning and restoration of the HBPP provides HBGS with the

opportunity to convert the Waste Management Building for use as a warehouse once those activities are complete. If the Waste Management Building were not to remain, HBGS would petition the CEC to permit and construct a new building onsite, resulting, at a minimum, in additional environmental impacts, including air emissions associated with the construction of the building and the workers traveling to and from the site to build it.

HBPP Core Area. HBPP Core Area is the area formerly occupied by HBPP Units 1, 2, and 3. As part of site restoration, the area will be resurfaced for HBGS uses, including open storage, parking, and maintenance staging. Typically, when engine maintenance or outage activities are conducted at a power plant, there is open space available to perform the work. Because HBGS has limited space, engine components are stacked inside the engine hall, causing congestion and adding to the difficulty of performing maintenance. This increases the time the equipment is out of operation and the cost of the maintenance and resulting outage. PG&E proposes the HBPP Core Area as an area to be used by contractors to park and work on plant equipment in need of repair or maintenance. This area will also be available for equipment storage and potential future expansion. Given the current size constraints of the HBGS site, use of the Core Area would enable HBGS to conduct its maintenance and outage activities with sufficient space and in less time.

Alpha Road. As stated in the FSR Plan, Alpha Road was originally constructed as a temporary access road for HBGS construction and was subsequently used for HBPP decommissioning. However, as part of the HBPP restoration project, PG&E proposes to make Alpha Road permanent to accommodate heavy haul loads, such as the removal of the ISFSI casks once a federal repository for high-level nuclear fuel waste is available. The road will also be used for heavy loads associated with HBGS and the PG&E 60-kilovolt (kV) substation, which could include replacement of reciprocating engines and transformers.

Alpha Road is necessary as a permanent heavy haul road because the turnoff to Alpha Road from King Salmon Avenue comes before the bridge over Fisherman's Channel when traveling from Highway 101. This bridge is not rated to accept heavy loads. The turnoff to Bravo Road comes after the bridge; therefore, Bravo Road is not a suitable route for heavy haul loads. The King Salmon Avenue Bridge could be upgraded to enable it to carry heavy loads. However, the potential environmental impacts associated with a bridge upgrade are significant, given that it is located within habitat for eelgrass and special-status fish species.

HBGS proposes to use Alpha Road as the primary access road to the plant. As licensed, HBGS was to use Bravo Road (the main HBPP access road) as its primary access road. There was no secondary HBGS access. Bravo Road has not been available for HBGS use because of HBPP decommissioning activities. With Alpha Road as the primary access road to HBGS, Bravo Road will provide secondary, emergency access, enhancing safety at the plant. Secondary access is typically a required component of power plants licensed by the CEC. The secondary access provided by Bravo Road would bring HBGS up to current standards.

APPENDIX E

Conclusion

The FSR Plan does not lessen the intended effect of the original decommissioning permits. The plan provides for a balance of the property's industrial needs while restoring areas to a significantly higher quality than the pre-project conditions. The site is industrial and has been for over 50 years. The restoration of the HBPP recognizes PG&E's fuel storage and electricity generation obligations, while greatly enhancing the environmental quality of the natural areas surrounding these uses.

Table 1: Previous CDPs Issued to PG&E for Work Related to Decommissioning of the Humboldt Bay Power Plant

Permit	Development	Permit Condition #	Permit Language Related to Site Restoration
E-07-005	Demolish 2 effluent ponds and construct 2 modular office buildings and parking spaces on same site. Constructing transformer pad, relocate a power line and create a laydown area	1	PG&E shall submit to the Commission a request for an amendment to this permit that proposes removal of development associated with this project and restoration of the wetlands directly and indirectly affected by this project. PG&E shall thereafter implement removal and restoration in accordance with the approved amendment
E-08-003	Remove 2.7 million gallon tank (located in area that is now the Count Room area (area 2d) , remove contaminated soil and backfill to existing grade. Construct a temporary access road (i.e., Charlie Road) through an undeveloped portion of the site containing about 0.28 acres of grassland with wetland characteristics and 0.03 acres of riparian wetlands.	N/A	Project descrition: Roadway will remain unimproved. The roadway would be maintained until project activities and soil remediation are completed, at which time the grassland area in the roadway would be restored to pre-project conditions
E-08-003-A1	Construct an employee parking lot on the former site of the fuel oil tank, pave the temporary access road leading to the site (i.e., Charlie Road), and construct a road approximately 100 feet long connecting the new lot with an existing parking lot at the power plant site	N/A	Project description: The roads, from King Salmon Avenue to the lot and between the two lots, will be removed at the completion of PG&E's demolition and construction projects and the areas restored to pre-project conditions
E-08-008	Install 12 new modular office buildings, a radiation portal monitor device to provide passive, non-intrusive screening of trucks for the presence of nuclear and radiological materials, a materials storage building on a concrete slab and several graded gravel employee parking, materials storage and staging areas	2	Within six months of completing the decommissioning of Humboldt Bay Power Plant Units 1, 2, and 3, PG&E shall submit to the Commission a request for an amendment to this permit that proposes removal of all development associated with this project and restoration of those areas directly and indirectly affected by this project. PG&E shall thereafter implement removal and restoration in accordance with the approved amendment.
E-09-005	Improve and widen existing Charlie Road to allow use of the road by heavy equipment expected during decommissioning and will incorporate a drainage swale to handle road runoff. Also, construct extension of Charlie Road (Portal Road) connecting to existing Bay View Drive. Also, install a radiation portal monitor and a security booth and gate	N/A	Project description: PG&E plans to remove all project components and restore the site at the end of power plant decommissioning, which is expected to be about 2020.
		2	No later than January 1, 2020, or at least one year before completing the decommissioning of the existing power plant, whichever is sooner, the Permittee shall submit a complete coastal development permit application describing proposed measures to restore the areas affected by the development activities approved pursuant to this permit.
E-09-010	Construct access roads, equipment laydown areas, and staging areas, demolish the existing power plant structures and associated structures and facilities, and conduct site cleanup and remediation. Includes removal of LFO tank #1 and associated berm	3	No later than March 31, 2015, the Permittee shall submit a coastal development permit application describing proposed measures to restore the areas affected by the development activities approved pursuant to this permit. The Permittee may request the Executive Director extend this deadline upon a showing of good cause.

TABLE 2: HBPP Final Site Restoration Areas and Subareas

Area / Subarea	Acres	Reuse Category	Applicable CDP/permit
1 - Buhne Point			
1a Buhne Point Vista	0.48	No change from current	CDP E-09-0631
1b Buhne Point Tsunami Assembly Area	2.67	No change from current	-
1c Shoreline Trail	2.66	No change from current	CDP E-05-001
1d Charlie Road	0.31	Restore to pre-project	CDP E-08-003, E-08-003-A1, CDP E-09-005
	6.12		
2 - ISFSI and ISFSI Support Area			
2a ISFSI	2.89	No change from current	CDP E-05-001, E-09-005
2b ISFSI Support - Count Room	0.29	Remodel as ISFSI Support Offices	CDP E-09-005-A1
2c ISFSI Entrance Road	0.28	New entrance road to ISFSI	-
2d ISFSI Support Parking Lot/Contractor Lot #2	0.59	Maintain a portion for parking, surface grade	CDP E-08-003-A1
2e HBPP Warehouse/Workshop/Office	0.93	No change	CDP E-09-010
	4.99		
3 - Bayview Heights	6.86	Restore to pre-project, retain roadways, slope stability improvement, add turn-around, patrol path	CDP E-09-010, E-08-008, E-08-008-A1
4 -Trailer City			
4a Trailer City Main	3.89	Restore to CCC and USACE wetlands	CDP E-07-005, E-09-010
4b Trailer City Pretreatment and Bio-Detention Basin	0.44	Create stormwater basin	-
	4.33		
5 - Duck Pond	6.62	Interconnected with the Trailer City wetlands	-
6 - HBPP Core			
6a HBPP Core Area (Former Units 1, 2, 3 area)	2.76	HBGS storage and parking	CDP E-09-010
6b Waste Management Building	0.74	Modify as HBGS warehouse	CDP E-09-010
	3.51		
7 - Humboldt Bay Gen Station/60 kV Substation			
7a HBGS Power Plant	5.21	No change from current	CEC License, 06-AFC-7
7b 60 kV Substation	1.16	No change from current fence realignment	-
7c REST-1 Wetland Mitigation Area	0.89	No change from current	CEC License BIO-12
	7.26		
8 - Intake Canal			
8a Intake Canal	2.50	Create mitigation wetlands	CDP 9-13-0621
8b Alpha Road Parking Lot	0.75	Create mitigation wetlands	CDP 9-13-0621
8c Alpha Road	0.96	Maintain as site access for HBGS, pave	CDP E-09-010
8d, e Alpha Road Overflow Parking	0.11	Restore to pre-project condition	CDP E-09-010
	4.32		

TABLE 2: HBPP Final Site Restoration Areas and Subareas

Area / Subarea	Acres	Reuse Category	Applicable CDP/permit
9 - Assembly Building Area			
9a Assembly Building Parking Lot	0.83	Remove buildings and restore surface	-
9b Bravo Road	0.47	Maintain Bravo Road as HBGS secondary site access, regrade	-
9c Assembly Building Bio-Detention Basin	0.27	Create bio-detention basin	-
9d Frog Pond	0.25	Recontour for slope to detention basin	
9e Frog Pond Pretreatment and Bio-Detention Basin	0.32	Create pre-treatment and bio-detention basin	-
9f Frog Pond Fringe	0.83	Recontour for slope to detention basin	-
	2.98		
10 - Buhne Point Wetland Preserve			CDP E-07-005, E-08-003, E-09-005, 9-13-0621
10a Buhne Point Wetland Preserve Proper	6.12	Replace tidal flow culvert	-
10b Buhne Point Wetland Preserve Fringe	0.99	Remove storage containers and restore surface	-
10c Contractor Pedestrian Trail	0.48	Remove trail and restore surface	CDP E-09-010
10d CPL2 Laydown Yard	0.59	Restore to pre-project	-
	8.18		
11 - Contractor Parking Lot #1			
11a MIT-1	0.43	Create mitigation wetlands	CEC License BIO-12
11b MIT-6	0.26	Create mitigation wetlands	CDP E-09-0631
11c MIT-7	0.38	Create mitigation wetlands	Mitigation for retention of Portal Road and Alpha Road as permanent roads CDP E-09-005 and CDP E-09-010
11d Contractor Parking Lot #1 Northeast	0.17	Remove gravel entranceway	-
	1.24		
12 – Buhne Slough Salt Marsh	18.50	No change from current	-
Total Acres in Restoration Plan	74.88		

TABLE 3: **HBPP Final Site Restoration Areas Requiring Intensive Construction and Equipment Laydown**

Area / Subarea	Construction Activity	Possible Laydown Area
1d – Charlie Road	Removing pavement and gravel, planting	Assembly Room Building Parking Lot, Contractor Lot #1, Contractor Lot #2
2 - ISFSI and ISFSI Support Area		
2b ISFSI Support	Interior remodeling	Contractor Parking Lot #2
2c ISFSI Entrance Road	Fill, recontour, surface, sewer line	Assembly Building Parking Lot, HBPP Core
3 - Bayview Heights	Remove utilities, filling, recontouring, planting	Trailer City, HBPP Core
4 -Trailer City		
4a Trailer City Main	Grading/contouring, planting	HBPP Core
4b TC Stormwater Basin	Excavation, grading, planting	Trailer City, HBPP Core
6 - HBPP Core		
6a HBPP Core Area (Former Units 1, 2, 3 area)	Grading, filling, Paving/surfacing	Trailer City, Bayview
6b Waste Management Building	Modify to HBGS warehouse	Waste Management Building lot, HBPP Core Area
8 - Intake Canal		
8a Intake Canal	Dewatering, excavation, grading, planting	HBPP Core, Assembly Building Lot
8b Alpha Road Parking Lot	Excavation, grading, planting	HBPP Core, Assembly Building Lot
8c Alpha Road Realignment and paving	Excavation, grading, planting	HBPP Core, Assembly Building Lot
9 - Assembly Building Parking Lot		
9a Assembly Building Parking Lot	Removing buildings and restore to natural conditions	Alpha Road Parking Lot, HBPP Core
9b Bravo Road	Re-paving, culvert replacement	HBPP Core
9c Assembly Building Storm Water Basin	Excavation, grading, planting	HBPP Core
9d Frog pond	Excavation, grading, planting	HBPP Core
9e Frog pond bio-detention basin	Excavation, grading, planting	HBPP Core
9f Frog pond fringe	Excavation, grading, planting	HBPP Core
10 - Buhne Point Wetland Preserve		
10a Buhne Point Wetland Preserve Main	Replacing culvert	Assembly Building Parking Lot
10b Buhne Point Wetland Preserve Fringe	Removing storage containers, planting	Assembly Building Parking Lot
10c Contractor Pedestrian Trail	Removing gravel, resurfacing, planting	Assembly Room Building Parking Lot, Contractor Lot #1, Contractor Lot #2
11 - Contractor Parking Lot #1		
11a MIT-1	Grading, contouring, planting	Contractor Parking Lot #2
11b MIT-6	Grading, contouring, planting	Contractor Parking Lot #2
11c MIT-7	Grading, contouring, planting	Contractor Parking Lot #2
11d CPL1 Northeast	Grading, contouring, planting	Contractor Parking Lot #2

Table 4: Project impacts on wetlands, proposed mitigation ratios, and proposed mitigation locations.

Location, habitat type, and duration	Impact	Actual/Anticipated impact timing	Affected area (ac)	Proposed mitigation ratio	Affected area times ratio (ac)	Mitigation location (Figure 5)	Anticipated mitigation timing	Restoration, creation, or enhancement action
Bayview Heights CCC jurisdictional wetlands (permanent)	grade and modify stormwater drainage system	2021	0.115	2:1	0.230	Mit-7	2020	Create CCC jurisdictional wetlands
Alpha Road Waters of the U.S. (temporary)	Road Realignment and culvert replacement	2018	0.05	1:1	0.05	Alpha Road	2018	Restore impacted areas with native species
Alpha Road Waters of the U.S. (permanent)	Road Realignment	2018	0.001	4:1	0.004	Mit-7	2020	Create USACE and CCC jurisdictional wetlands
Rest-1 CCC jurisdictional wetlands (permanent)	temporary impact made permanent—keeping road as site access	2009	0.274	4:1	1.096	Shoreline Wetland	2020	Create CCC jurisdictional wetlands
Rest-1 USACE and CCC jurisdictional wetlands (permanent)	temporary impact made permanent—keeping road as site access	2009	0.011	4:1	0.044	Shoreline Wetland	2020	Create USACE and CCC jurisdictional wetlands
Buhne Point Wetlands Preserve USACE and CCC jurisdictional wetlands (temporary)	Culvert replacement	2019	0.009	1:1	0.009	Buhne Point Wetlands Preserve	2019	Restore impacted areas and enhance existing wetlands by removing invasive species and replanting with native species
Buhne Point Wetlands Preserve Waters of the U.S. (temporary)	Culvert replacement	2019	0.009	1:1	0.009	Buhne Point Wetlands Preserve	2019	Restore impacted areas and enhance existing wetlands by removing invasive species and replanting with native species

Table 4: Project impacts on wetlands, proposed mitigation ratios, and proposed mitigation locations.

Location, habitat type, and duration	Impact	Actual/Anticipated impact timing	Affected area (ac)	Proposed mitigation ratio	Affected area times ratio (ac)	Mitigation location (Figure 5)	Anticipated mitigation timing	Restoration, creation, or enhancement action
Intake Canal USACE and CCC jurisdictional wetlands (temporary)	Culvert replacement and Bridge footing removal	2019	0.018	1:1	0.018	Buhne Point Wetlands Preserve	2019	Restore impacted areas and enhance existing wetlands by removing invasive species and replanting with native species
Intake Canal Waters of the U.S. (temporary)	Culvert replacement and Bridge footing removal	2019	0.018	1:1	0.018	Buhne Point Wetlands Preserve	2019	Restore impacted areas and enhance existing wetlands by removing invasive species and replanting with native species
Frog Pond Stormwater detention basin USACE and CCC jurisdictional wetlands (permanent)	Grade existing stormwater detention basin; creating ISFSI entrance road	2018	0.295	2:1	0.590	Shoreline Wetland	2018	Create additional wetlands as part of the enhanced stormwater detention basin
King Salmon Avenue CCC jurisdictional wetlands (temporary)	creation of adjacent mitigation area	2021	0.040	1:1	0.040	King Salmon Avenue/Mit-7	2021	Restore impacted areas and enhance existing wetlands by removing invasive species and connecting to mitigation wetlands
King Salmon Avenue Waters of the U.S. (temporary)	creation of adjacent mitigation area	2021	0.023	1:1	0.023	King Salmon Avenue/Mit-7	2021	Restore impacted areas and enhance existing waters by removing invasive species and connecting to mitigation wetlands

Table 4: Project impacts on wetlands, proposed mitigation ratios, and proposed mitigation locations.

Location, habitat type, and duration	Impact	Actual/Anticipated impact timing	Affected area (ac)	Proposed mitigation ratio	Affected area times ratio (ac)	Mitigation location (Figure 5)	Anticipated mitigation timing	Restoration, creation, or enhancement action
Trailer City drainage ditch Waters of the U.S. (temporary)	creation of stormwater detention basin and wetland mitigation area	2020	0.016	1:1	0.016	Trailer City drainage ditch/ Shoreline Wetland	2020	Restore impacted areas and enhance existing drainage ditch by removing invasive species and replanting with native species
Trailer City drainage ditch Waters of the U.S. (permanent)	creation of stormwater detention basin and wetland mitigation area	2020	0.023	2:1	0.046	Shoreline Wetland	2020	Create additional wetlands as part of the enhanced stormwater detention basin and wetland mitigation area
ISFSI Support office parking area - CCW-F historic wetland	temporary impact made permanent—keeping Portal Road and parking area	2010	0.001	4:1	0.004	Mit-7	2021	Create additional wetlands as part of the enhanced wetland mitigation area
King Salmon Avenue, Alpha Road, and Frog Pond Stormwater detention basin waters and wetlands (temporary impacts and temporal loss)	temporary impacts	2018–2021	0.351	2.8:1	1.01	Buhne Point Preserve Fringe	2018	Enhance the Buhne Point Preserve Fringe area by removing non-native species and replanting with native vegetation

Table 5: Mitigation and restoration goals, objectives, and success criteria.

Area	Goal	Objective	Success criteria
Mit-7	Goal 1: Create 0.244 ac of CCC jurisdictional wetland	Establish cover in wetland vegetation	70% cover of native vegetation. At least 50% cover of hydrophytic plants.
	Goal 2: Increase wildlife habitat value and wildlife use	Objective 1: Expand the Buhne Point Wetlands Preserve to support wildlife	Observe wildlife use (e.g., bird perching, resting, foraging). 10% of wildlife species observed in adjacent mitigation areas (e.g., Mit-1, Mit-6, Mit-2, Mit-5) will be observed in the mitigation area.
		Objective 2: Provide vegetation screening between the mitigation areas and King Salmon Avenue	90% survival of planted trees and shrubs.
ISFSI Stormwater Detention Basin	Improve the quality of stormwater flowing from industrial areas into the Buhne Point Wetland Preserve	Establish a vegetative basin with native perennial wetland species	30% cover by native perennial plants. Less than 2% cover of invasive species.
Bayview Heights	Stabilize hillslopes with self-sustaining, low-maintenance native vegetation	Establish native plant landscape	70% cover by native perennial plants. Less than 2% cover of invasive species.
Trailer City Stormwater Detention Basin	Improve the quality of stormwater flowing from industrial areas into the Shoreline Wetland mitigation area	Establish a vegetative basin with native perennial wetland species	30% cover by native perennial plants. Less than 2% cover of invasive species.
Shoreline Wetland Mitigation Area	Goal 1: Establish 0.715 ac of USACE and 2.926 ac of CCC jurisdictional wetlands	Objective 1: Create a drainage pattern of basin and swale to increase saturation to promote the formation of hydric soils	Long duration (approximately 21 days) of soil saturation in 0.096 ac.
		Objective 2: Establish cover in wetland vegetation	70% cover of native vegetation. At least 50% cover of hydrophytic plants in 2.199 ac.
	Goal 2: Increase wildlife habitat value and wildlife use	Create structural diversity of vegetation for increased wildlife use	90% survival of planted trees and shrubs. 30% of wildlife species in comparison site (e.g., Wren Marsh, Duck Pond, Mit-3) will be observed in the mitigation area.
Contractor Pedestrian Trail	Establish a native plant community to extend the adjacent habitats in the	Restore vegetation to native plant species	90% survival of planted trees and shrubs. At least 70% cover of

Table 5: Mitigation and restoration goals, objectives, and success criteria.

Area	Goal	Objective	Success criteria
	Buhne Point Preserve		native perennial herbs or grasses between planted trees and shrubs. Less than 2% cover of invasive species.
Buhne Point Wetland Preserve Fringe Area	Goal 1: Establish a native plant community to extend the adjacent habitats in the Buhne Point Preserve	Restore vegetation to native plant species	90% survival of planted trees and shrubs. At least 70% cover of native perennial herbs or grasses between planted trees and shrubs. Less than 2% cover of invasive species.
	Goal 2: Maintaining and enhance wildlife habitat value and use	Objective 1: Create standing snags and perches	Observe wildlife use (e.g., bird perching, resting, foraging) of snags.
		Objective 2: Enhance wildlife connectivity to the Buhne Point Preserve	Observe wildlife movement between the adjacent mitigation areas of the Buhne Point Preserve (e.g., Mit-3, Mit-B, Mit-A, Mit-4a and 4b).
Frog Pond Stormwater detention basin	Improve the quality of stormwater flowing from industrial areas into the Buhne Point Wetland Preserve	Establish a vegetative basin with native perennial wetland species	30% cover by native perennial plants. Less than 2% cover of invasive species.
Charlie Road and ISFSI Support Office Parking	Establish a native plant community to extend the adjacent habitats in the Buhne Point Preserve and Buhne Point	Restore vegetation to native plant species	90% survival of planted trees and shrubs. At least 70% cover of native perennial herbs or grasses between planted trees and shrubs. Less than 2% cover of invasive species.
Alpha Road overflow parking areas	Establish a self-sustaining, low-maintenance, native plant community	Establish native plant landscape	70% cover by native perennial plants. Less than 2% cover of invasive species.
Assembly Building and parking area	Establish a self-sustaining, low-maintenance, native plant community	Establish native plant landscape	70% cover by native perennial plants. Less than 2% cover of invasive species.
Rain Gardens	Improve the quality of stormwater runoff	Establish vegetative swales with native perennial wetland species	30% cover by native perennial plants. Less than 2% cover of invasive species.
Alpha Road, Intake Canal, Buhne Point Wetlands Preserve, and Duck Pond Temporary Impacts	Restore temporarily impacted areas	Establish native vegetation	Percent cover is at least 95% of pre-construction density. 70% of cover is made up of native plants. Less than 2% cover of invasive species.

Table 6: Restored Area Acreage Required and Proposed

HBPP Area and Subareas	CDP No.	HBPP Area and Subarea Acreage Total	Acreage Identified for Restoration Under a Decommissioning CDP		Acreage Proposed to be Restored		Total Wetland Restoration requirement (includes add'l mitigation)	Net Acres Owed	
			upland	wetland	upland	wetland		upland	wetland
1-Buhne Pt.									
1d-Charlie Road	E-08-003 E-08-003-A1 E-09-005	0.31	0	0.31	0	0.31	0.31	0	0
	E-09-005	0.088	0	0.088	0	0.088	0.088	0	0
2-ISFISI and ISFSI Support Area									
2b ISFSI Support - Count Room	E-09-005-A1	0.29	0.29	0	0	0	0	0.29	0
2c Portal Road	E-09-005	0.42	0.33	0.09	0.13	0	0.36	0.2	0.36
2d ISFSI Support Parking Lot/ Contractor Lot No. 2	E-08-003-A1	0.65	0.62	0.035	0.1	0	0.14	0.52	0.14
2e-ISFSI Support Stormwater Basin	E-08-003-A1	0.75	0.58	0.173	0	0.173	0.173	0.58	0
3 -Bayview Heights									
3-Bayview Heights	E-08-008/ E-09-005/ E-09-010	6.26	4.87	0.06	5.84	0	0.12	-0.97	0.12
4-Trailer City									
4a-Trailer City Main	E-07-005 E-09-010	4.07	0.78	1.85	1.143	2.92	1.95	-0.363	-0.97

Table 6: Restored Area Acreage Required and Proposed

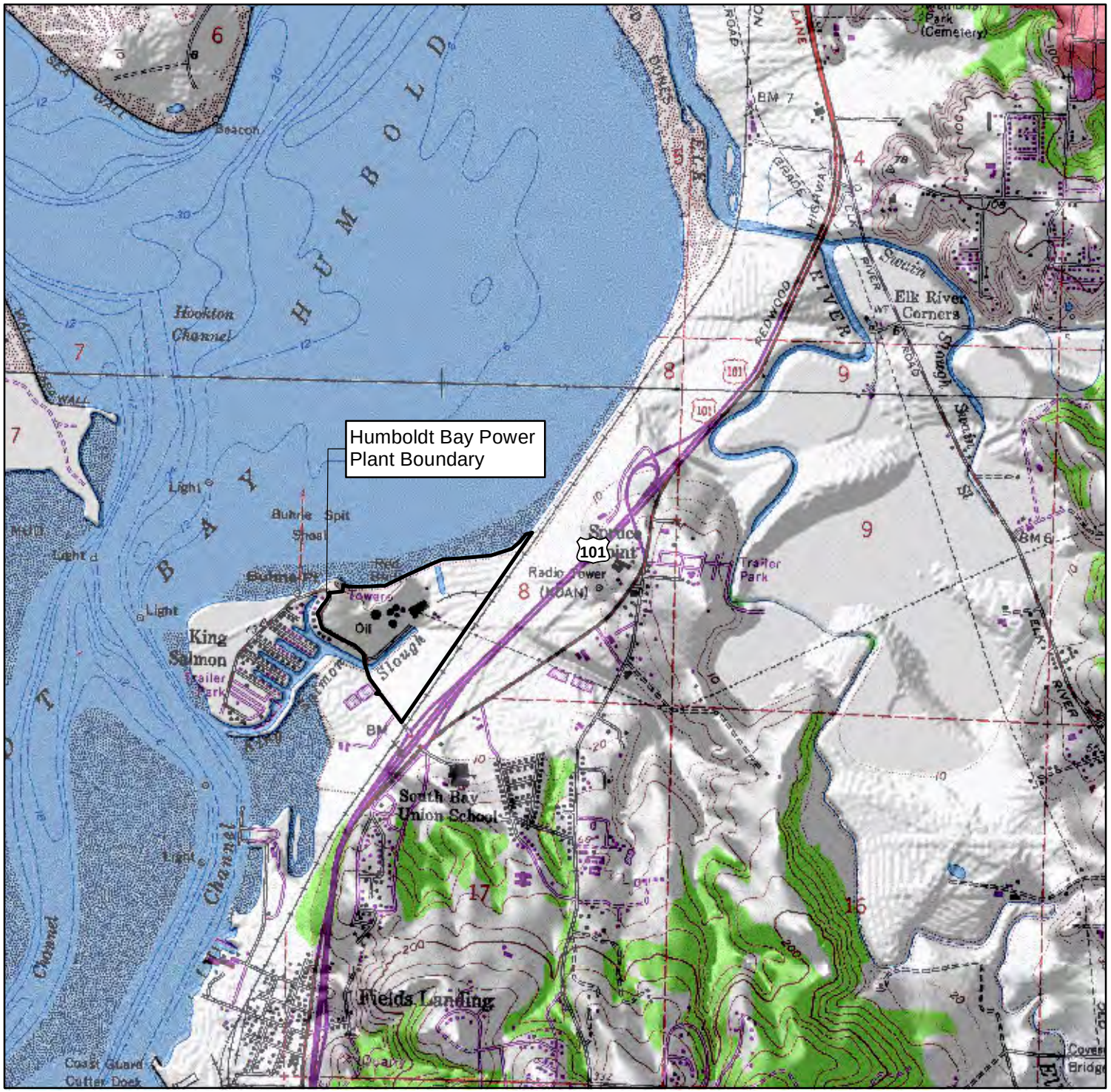
6-HBPP Core									
6a HBPP Core Area (Former Units 1,2,3 area)	E-09-010	2.91	2.91	0	0.387	0	0	2.523	0
6b Waste Management Building	E-09-010	1.71	1.71	0	0.61	0	0	1.1	0
8-Intake Canal									
8c,d,e-Alpha Road/Alpha Rd Overflow Parking	E-09-010	1.07	0.79	0.28	0.11	0	1.12	0.68	1.12
9-Assembly Building Area									
9a,b-Assembly Building Parking	n/a	0.8	0	0	0.66	0	0	-0.66	0
9c - Bravo Rd. Security Parking Area	n/a	0.15	0	0	0.15	0	0	-0.15	0
10-Buhne Pt. Preserve									
10c-Contractor Pedestrian Trail	E-09-010	0.49	0.39	0.098	0	0.49	0.098	0.39	-0.392
TOTAL		**19.968**	**13.27**	**2.984**	**9.13**	**3.981**	**4.359**	**4.14**	**0.378**

Table 7. Summary of Potential Soil Remediation Areas Identified in Draft Feasibility Study/Remedial Action Plan

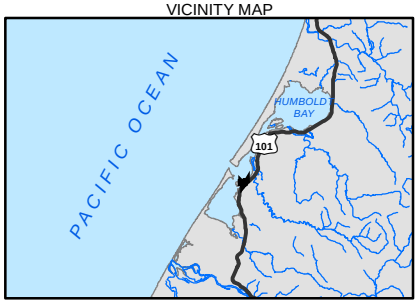
RAP Soil Removal Area	Description of Area	Chemical of Concern	Proposed Cleanup Goal and Consideration of Ecological Receptors
PSRA 1	Swale associated with Former Fuel Oil Storage Tank Secondary Containment Discharge Valve	Elevated levels of PCBs detected in shallow (0.5 ft bgs) soil along swale.	PCBs were not detected in any of three follow-up soil sample locations included in Additional Site Chemical Characterization; therefore, additional sampling will be conducted to determine if any remediation is necessary. Proposed target cleanup level is based on industrial use scenario; however, given the limited nature of the impacted area as observed in sampling data, as a practical matter, cleanup will likely achieve a level of nondetection of residual PCBs and will be fully protective of ecological receptors.
PSRA 2	Area north of Unit 3 Refueling Building	Elevated levels of arsenic in shallow soil 2-6 ft bgs.	Proposed target cleanup level is site-specific background of arsenic; therefore, will be fully protective of any ecological receptors.
PSRA 3	Circulation Water Line Area in former Units 2-3	Elevated level of arsenic detected at one sample location in area south of Unit 3.	Proposed target cleanup level is site-specific background of arsenic; therefore, will be fully protective of any ecological receptors.
PSRA 4	Along Radwaste Discharge Line	Elevated levels of arsenic detected in shallow soils along radioactive waste discharge line.	Proposed target cleanup level is site-specific background of arsenic; therefore, will be fully protective of any ecological receptors.
PSRA 5	Area West of Discharge Canal	Elevated level of lead detected at a single isolated sample location, bounded by nearby samples that did not show elevated lead concentrations.	Additional sampling of this area is proposed to confirm the presence of elevated lead and determine the limits of necessary remediation. The proposed target cleanup level is based on industrial use scenario; however, since the impacted area is limited, any risk to ecological receptors should be negligible.
PSRA 6	Former Fire Training Area-Trailer City	Elevated level of lead was detected in one isolated sample location, bounded by nearby samples that did not show elevated lead concentrations. This sample location may have been removed through	Additional sampling of this area is proposed to confirm the presence of elevated lead and determine the limits of necessary remediation. The proposed target cleanup level was based on industrial use scenario; however, the Trailer City area was evaluated in the draft ERA currently under DTSC review, since there was a likelihood of this area being restored to wetland or lowland in the FSR Plan. Based on the single detection of lead at a

RAP Soil Removal Area	Description of Area	Chemical of Concern	Proposed Cleanup Goal and Consideration of Ecological Receptors
		previous grading conducted in this area.	concentration above exceeding ecological screening levels, the risk assessment concluded that this resulted in negligible ecological risk. Since this area is now clearly targeted for restoration as wetland/lowlands in the FSR Plan, DTSC may reevaluate proposed target cleanup level to address the planned final land use and ecological receptors in the final RAP.
PSRA 7	Wetland Area South or Former Fuel Oil Storage Tank 1	Elevated levels of PAHs were detected in a single isolated location in this area.	Additional sampling of this area is proposed to determine if this result from a single sample can be confirmed or is an anomaly. If the occurrence of impacted soil is confirmed, and remediation is necessary, proposed target cleanup levels are based on human health industrial use scenario or ecological screening levels, whichever are lower for the specific target chemical so ecological receptors will be fully protected.
PSRA 8	Debris Burial Area	Area of buried shallow debris along northern fence boundary east of ISFSI containing elevated concentrations of lead.	Proposed target cleanup level is based on industrial use scenario; however, the area was found to be limited in area and to a shallow depth (<2 ft bgs). Based on the observed distribution of chemicals, removal of the documented debris in this area will likely achieve at or near-background concentrations and will be fully protective of ecological receptors.
PSRA 9	Asbestos Disposal Area	Removal of buried asbestos-cement board pieces that were disposed east of Trailer City area.	Proposed target cleanup goal is based on removal of all visible asbestos per direction of CAC and should be protective of any ecological receptors.

Notes:
bgs = below ground surface
CAC = Certified Asbestos Consultant
DTSC = Department of Toxic Substances Control
ERA = ecological risk assessment
ft = foot
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyls



VICINITY MAP



LEGEND

PROPERTY BOUNDARY

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FIGURE 1-1
Location Map
HBPP Final Site Restoration Plan
PG&E Humboldt Bay Power Plant, Eureka, California

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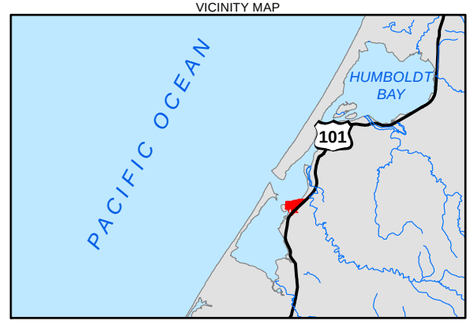
EXHIBIT 1

FIGURE 1-2
HBPP Site Features
HBPP Final Site Restoration Plan
PG&E Humboldt Bay Power Plant, Eureka, California

VICINITY MAP



LEGEND

- Culverts and Flow Control Structures
- King Salmon Avenue Sidewalk Improvement

Area - AreaID

- 1 - Buhne Point
- 2 - ISFSI and ISFSI Support Areas
- 3 - Bayview Heights
- 4 - Trailer City
- 5 - Duck Pond
- 6 - HBPP Core Area
- 7 - HBGS/60Kv Substation
- 8 - Intake Canal
- 9 - Assembly Building Area
- 10 - Buhne Point Wetland Preserve
- 11 - Contractor Parking Lot #1
- 12 - Buhne Slough Salt Marsh

Subarea ID, Name

1a - Buhne Point Vista
1b - Tsunami Assembly Area
1c - Shoreline Trail
1d - Charlie Road
2a - ISFSI
2b - ISFSI Support
2c - ISFSI Entrance Road
2d - ISFSI Parking Lot
2e - Warehouse/Office/Workshop/Security
3 - Bayview Heights
4a - Trailer City Proper
4b - Trailer City Stormwater Detention Basin
5 - Duck Pond
6a - HBPP Core Area
6b - Waste Management Building
7a - HBGS
7b - 60 kV Substation
7c - Rest-1 Mitigation Area
8a - Intake Canal
8b - Alpha Road Mitigation Area
8c - Alpha Road
8d - Coastal Bluff Scrub
8e - Coastal Bluff Scrub
9a - Assembly Building Parking Lot
9b - Bravo Road
9c - Assembly Building Stormwater Basin
9d - Frog Pond
9e - Frog Pond Bio Detention Basin
9f - Frog Pond Fringe
10a - Buhne Point Wetland Preserve
10b - Buhne Preserve Fringe
10c - Contractor Pedestrian Trail
10d - CPL2 Laydown Area
11a - MIT-1
11b - MIT-6
11c - MIT-7
11d - CLP1 Northeast
12 - Buhne Slough Salt Marsh

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Image Source: PG&E HBPP June 5, 2014

FIGURE 2-1
HBPP Final Site Restoration Areas and Subareas
HBPP Final Site Restoration Plan
PG&E Humboldt Bay Power Plant, Eureka, California

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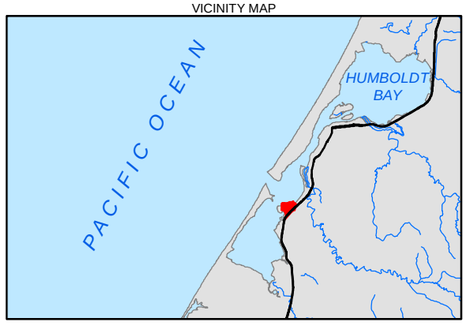
EXHIBIT 3

VICINITY MAP



LEGEND

- Flow Control Structure
- Permitted Mitigation Areas
- Roads

Proposed Vegetation Types

- Coastal Bluff Scrub
- Coastal Prairie
- Managed native grasses
- North Coast Riparian Scrub
- Stormwater Basin
- Swale
- Wetland - alkali bulrush
- Wetland - rushes

Infrastructure

- Gravel and walkways
- ISFSI Cask Turnaround
- Stormwater pre-treatment basin
- Stormwater pre-treatment basin - underground
- paving

Credits:
Stillwater Sciences

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Image Source: PG&E HBPP June 5, 2014

FIGURE 2-2
HBPP Final Site
Restoration Landscape Design
HBPP Final Site Restoration Plan
PG&E Humboldt Bay Power Plant, Eureka, California

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EXHIBIT 4

Figure 3. Asbestos-containing material (ACM) removal work area.

EXHIBIT 5

Figure 1-4. King Salmon Avenue shoulder widening project area and work phases.

Figure 4. Special-status plants documents in the HBPP Project area during 2015 surveys.

EXHIBIT 7

Figure 2. HBPP Final Site Restoration Conceptual Fencing Plan with the FSR Plan conceptual design.

Figure 5. Preliminary waters of the U.S. identified in the survey area.

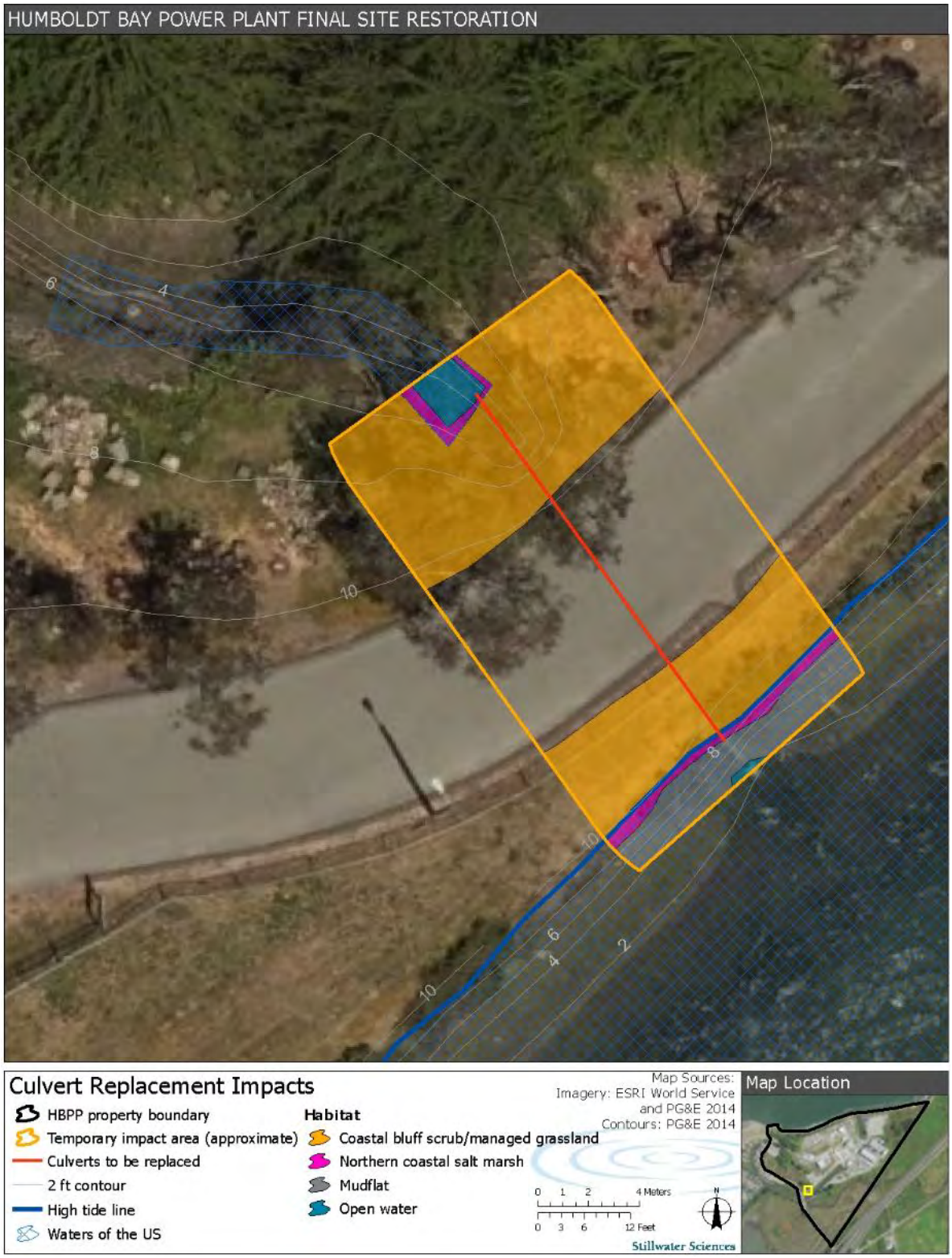


Figure 1. Temporary impacts associated with replacing the culvert between the Buhne Point Wetlands Preserve and the Intake Canal.

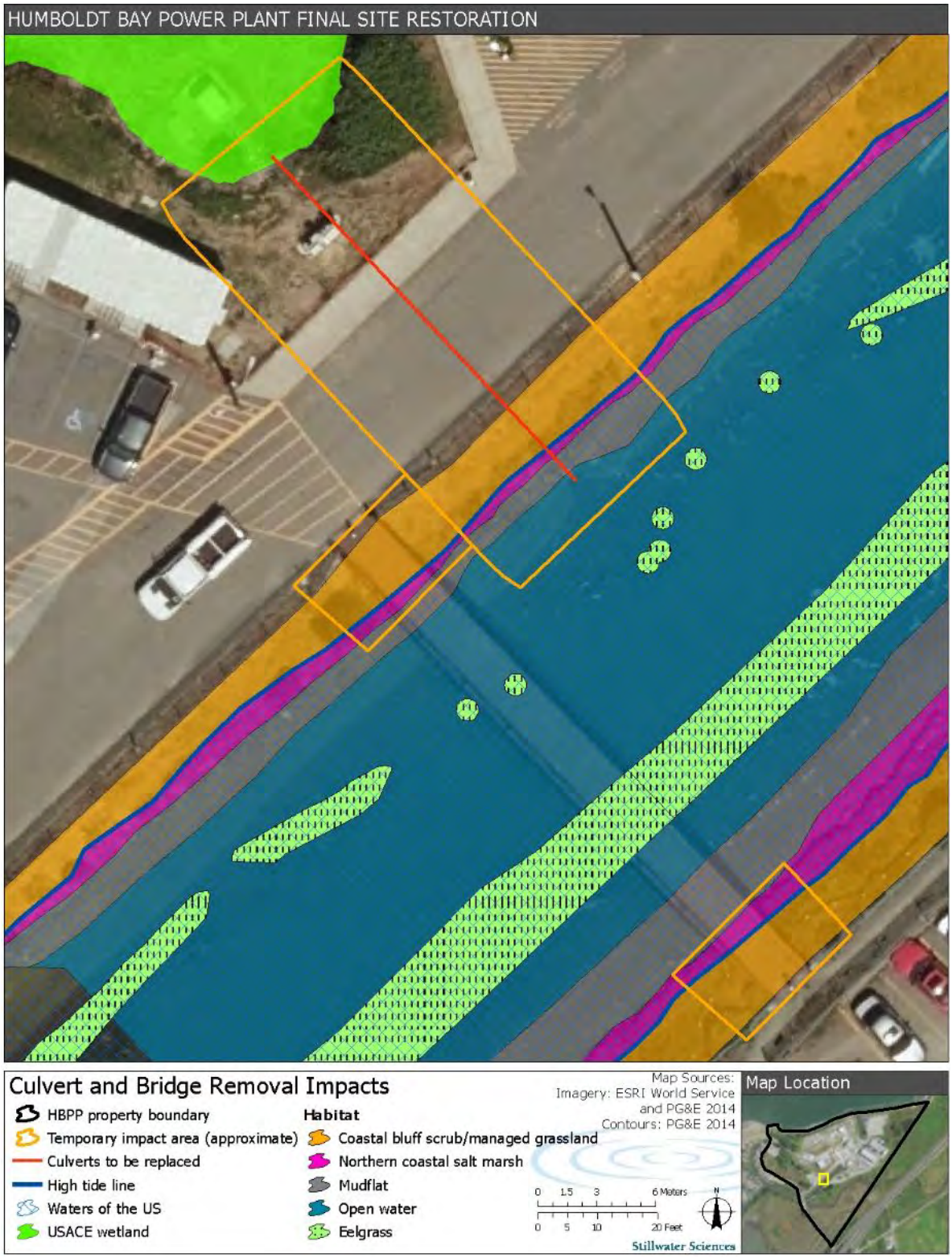


Figure 2. Temporary impacts associated with removing the pedestrian bridge and the culvert between the Frog Pond and the Intake Canal.

EXHIBIT 11

Figure 3. Downstream end of the culvert connecting the Buhne Point Wetlands Preserve and the Intake Canal. Coastal salt marsh vegetation is indicated in green boxes.

Figure 4. Close-up of the downstream end of the culvert connecting the Buhne Point Wetlands Preserve and the Intake Canal.

Figure 5. Pedestrian bridge crossing the Intake Canal showing the narrow band of coastal salt marsh above the unvegetated mudflat.

Figure 6. Culvert connecting the Frog Pond Stormwater Detention Basin and the Intake Canal.

Figure 7. Upstream end of the culvert connecting the Buhne Point Wetlands Preserve and the Intake Canal.

References

Stillwater Sciences. 2016. Biological Mitigation and Monitoring Plan for the Humboldt Bay Power Plant Final Site Restoration Project, Humboldt County, California. Prepared by Stillwater Sciences, Arcata, California for Pacific Gas and Electric Company, Eureka, California.

MEMORANDUM OF AGREEMENT

FOR

GAS LINE RELOCATION/ABANDONMENT

MARTIN SLOUGH ENHANCEMENT PROJECT

This Memorandum of Agreement For Gas Line Relocation/Abandonment Martin Slough Enhancement Project ("Agreement") is made and entered into effective as of the date (the "Effective Date") countersigned by Pacific Gas and Electric Company, a California corporation ("PG&E"), and the Redwood Community Action Agency, a California public non-profit public entity ("RCAA" and collectively with PG&E, the "Parties" and each a "Party"), in consideration of the covenants hereinafter set forth.

RECITALS:

A. The Martin Slough Enhancement Project ("Project") is an environmental remediation, ecological restoration, and habitat enhancement project being planned and executed by the RCAA on property owned by the Northcoast Regional Land Trust ("NRLT") and the City of Eureka.

B. To complete the Project it is necessary to relocate PG&E's existing six (6) inch gas line and abandon PG&E's four (4) inch gas line that cross the Martin Slough ("Work") on the NRLT property.

C. PG&E has agreed to participate in the Project by performing the Work, in recognition of remediation commitments made by PG&E to the California Coastal Commission for approval of the Humboldt Bay Power Plant "Final Site Restoration Permit", provided that PG&E's participation is conditioned upon California Coastal Commission approval of said Humboldt Bay Power Plant "Final Site Restoration Permit", as presently submitted, without modification, prior to the date specified in Paragraph 2(b)(i), below.

D. The Parties wish to memorialize the mutual agreement under which PG&E will perform the required gas line work.

AGREEMENTS

NOW, THEREFORE, in consideration of the foregoing recitals which are specifically incorporated into the body of this Agreement, the mutual promises contained herein and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties agree as follows:

1. Permitting and Easements.

The RCAA shall at its sole cost and expense:

a. Include the gas line decommissioning and gas line relocation project on property owned by the NRLT, identified as AP # 302-161-03 and 301-211-06, in its Martin Slough Enhancement Project permit applications to the County of Humboldt (California Environmental Quality Act compliance document, Conditional Use Permit), California Coastal Commission, (Coastal Development Permit), the California Department of Fish and Wildlife (Streambed Alteration Agreement), the US Army Corps of Engineers, and the North Coast Regional Water Quality Control Board in the NRLT's name with RCAA acting as the agent representing NRLT (except as may be excluded under Paragraph 2(b), from any regulatory agency with jurisdiction over the Project, including the Work).

b. Obtain any easements that may be necessary for PG&E to perform the Work in a form acceptable to PG&E, and obtain access permission from the NLRT needed by PG&E to perform the Work on the NRLT property as described in the preceding paragraph. PG&E will be responsible for providing supplemental survey and technical information as needed, as well as the additional cost of the permit fees as they relate to the cost of the gas line relocation and decommissioning project on the NRLT property. RCAA's project funds are provided by grants from State and Federal Agencies which allow RCAA to pay the permit fees attributable only to the stream and wetland enhancement components of the project, and not the gas line relocation and de-commissioning.

2. Performance of Gas Line Work.

a. Upon execution of this Agreement, and satisfaction of the conditions precedent set forth in Subsection (b) below, PG&E shall assign a Project Manager to supervise the Work and a project team to plan, estimate, and engineer all requirements necessary to perform the Work.

b. PG&E's obligations under this Agreement, beyond planning and engineering, are subject to the following conditions precedent:

(i) Approval by the California Coastal Commission of the Humboldt Bay Power Plant "Final Site Restoration Permit", in the manner described in Recital Paragraph C., above, by July 1, 2016;

(ii) Receipt of all RCAA permits; and

(iii) RCAA acquisition of any necessary easements and access permissions,

Upon satisfaction of these conditions, PG&E shall proceed with acquisition of materials, subcontractors, and any permits which may be required to be issued in PG&E's name, applicable to the Work and thereafter mobilize forces, equipment, and materials needed to perform the Work. PG&E anticipates the Work can be completed in within six (6) months from the date that RCAA acquires all of the Project Permits and any necessary easements and access permissions.

3. In the event the conditions precedent set forth in Section 2.b., are not satisfied in a timely manner, this Agreement shall be deemed to have no further force and effect and all obligations of the Parties shall be extinguished.

4. The RCAA shall provide free and reasonable access to Work location.

5. PG&E and the RCAA agree to execute such additional documents and take such additional actions which are consistent with, and as may be reasonable and necessary to carry out the provisions of this Agreement.

6. This Agreement is personal to the RCAA, and the RCAA shall not assign, or otherwise transfer this Agreement or any interest herein. Any assignment, or other transfer, violating the requirements of this Section shall be voidable at PG&E's election, and, at the option of PG&E, shall constitute a default hereunder.

7. Neither Party shall be held responsible for the failure or delay in performance herein where such failure or delay is due to any act of God or of the public enemy, war, compliance with laws, governmental acts or regulations, fire, flood, epidemic, strikes and labor interruption, accident, unusually severe weather or other causes similar to the foregoing beyond their reasonable control relating to the Work or the land use entitlements contemplated by this Agreement. Any Party whose performance is affected by such force majeure shall promptly give notice to the other Party of the occurrence of circumstance of force majeure upon which it intends to rely to excuse its performance. If the circumstances of force majeure affect the other Party's performance herein or delays performance for more than eighteen (18) months, then the other Party may terminate this Agreement upon fifteen (15) days advance written notice.

8. Any notices, requests or elections herein required or permitted shall be deemed given upon receipt and effective as to delivery if given in writing, and may be sent by registered United States Mail (return receipt requested) or by electronic mail or facsimile (with confirmed receipt) or by personal delivery or delivery by a nationally recognized courier service, addressed as follows or to such subsequent address as may be provided by Party to the other Party by proper notice:

a. If to the RCAA:

Ms. Val Martinez
Executive Director
Redwood Community Action Agency
904 G Street, Eureka, CA 95501
Phone: (707) 269-2009
Fax: (707) 445-0884
Email: valmartinez@rcaa.org

b. If to PG&E:

Mr. Loren Sharp
Senior Director/HBPP Plant Manager
Humboldt Bay Nuclear Power Plant
1000 King Salmon Ave.
Eureka, CA 95503
Phone: (707) 444-0819
Fax: (707) 444-0871
Email: ldsl@pge.com

9. This Agreement, its validity, construction and all rights under it shall be governed by the laws of the State of California and without reference to the choice of law principles of the State of California or any other state. Any action or legal proceeding arising out of this Agreement shall be brought and maintained in Humboldt County, California.

10. The RCAA and PG&E agree that the terms and provisions of this Agreement embody their mutual intent and that such terms and provisions are not to be more liberally in favor of, or more strictly against, either Party.

11. This Agreement, together with its attached exhibits, contains the entire Agreement between the Parties with respect to the subject matter hereof, and any prior or contemporaneous agreements, discussions or understandings, written or oral, are superseded by this Agreement and

shall be of no force or effect. No addition or modification of any term or provision of this Agreement shall be effective unless set forth in writing and signed by each of the Parties.

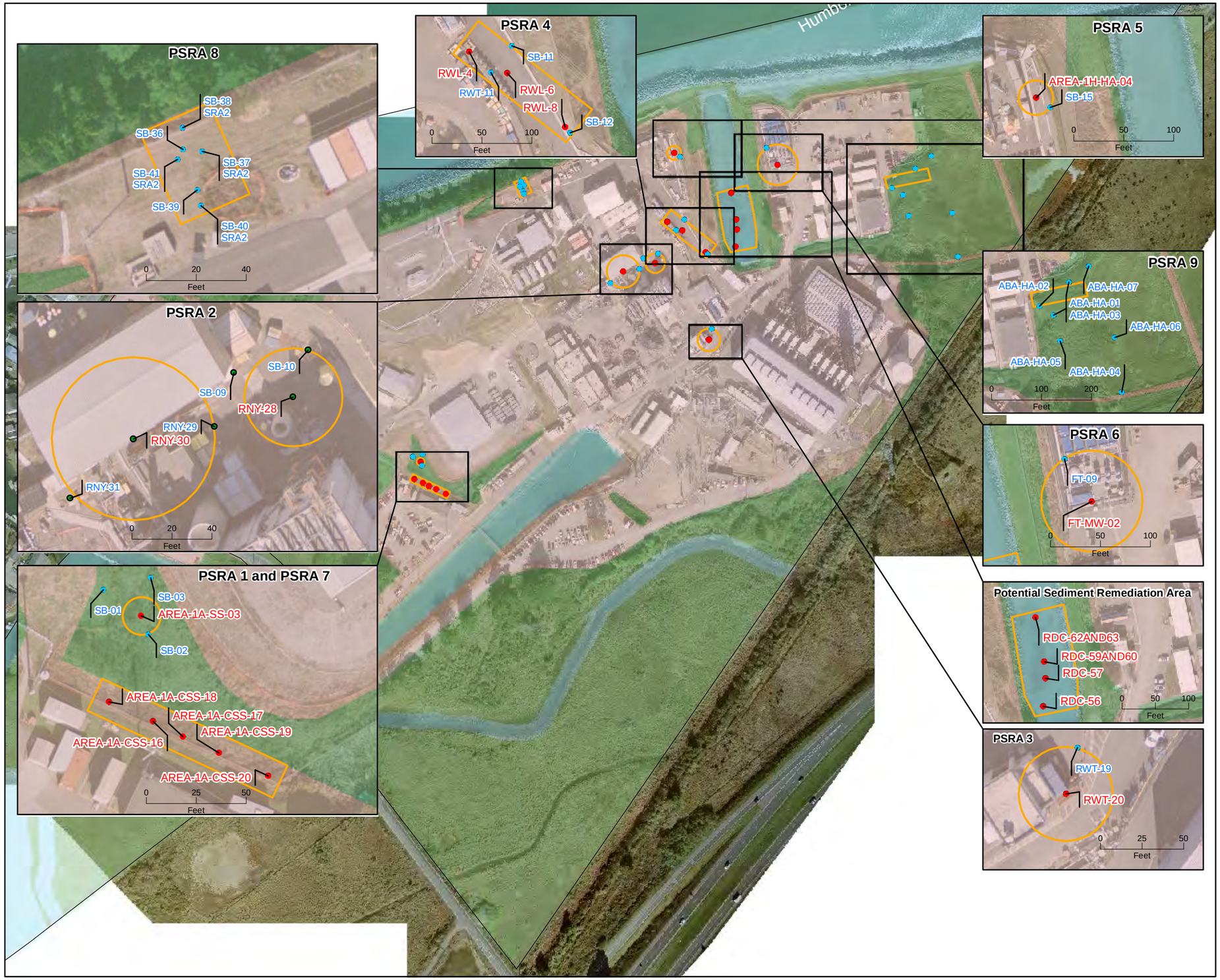
12. IN NO EVENT SHALL EITHER PARTY BE LIABLE FOR ANY INDIRECT, INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES, INCLUDING LOST PROFITS, REGARDLESS OF THE FORM OF ACTION, WHETHER IN CONTRACT, TORT (INCLUDING NEGLIGENCE AND STRICT LIABILITY) OR OTHERWISE, AND WHETHER OR NOT SUCH DAMAGES WERE FORESEEN OR UNFORESEEN.

13. Neither this Agreement nor any agreements or transactions contemplated hereby shall be interpreted as creating any partnership, joint venture, association or other relationship between the Parties.

14. This Agreement may be executed in two or more counterparts, each of which shall be deemed an original and all of which, when taken together, shall constitute one and the same instrument. Each Party shall be entitled to rely upon executed copies of this Agreement transmitted either by facsimile or a pdf version by email to the same and full extent as the originals.

IN WITNESS WHEREOF, the RCAA and PG&E have caused this Agreement to be executed as of the Effective Date by their respective officers thereunto duly authorized.

Pacific Gas and Electric Company		**Redwood Community Action Agency**	
Signature		**Signature**	
Name	Loren Sharp	**Name**	Val Martinez
Title	Senior Director Humboldt Bay Power Plant Manager	**Title**	Executive Director
Date		**Date**	



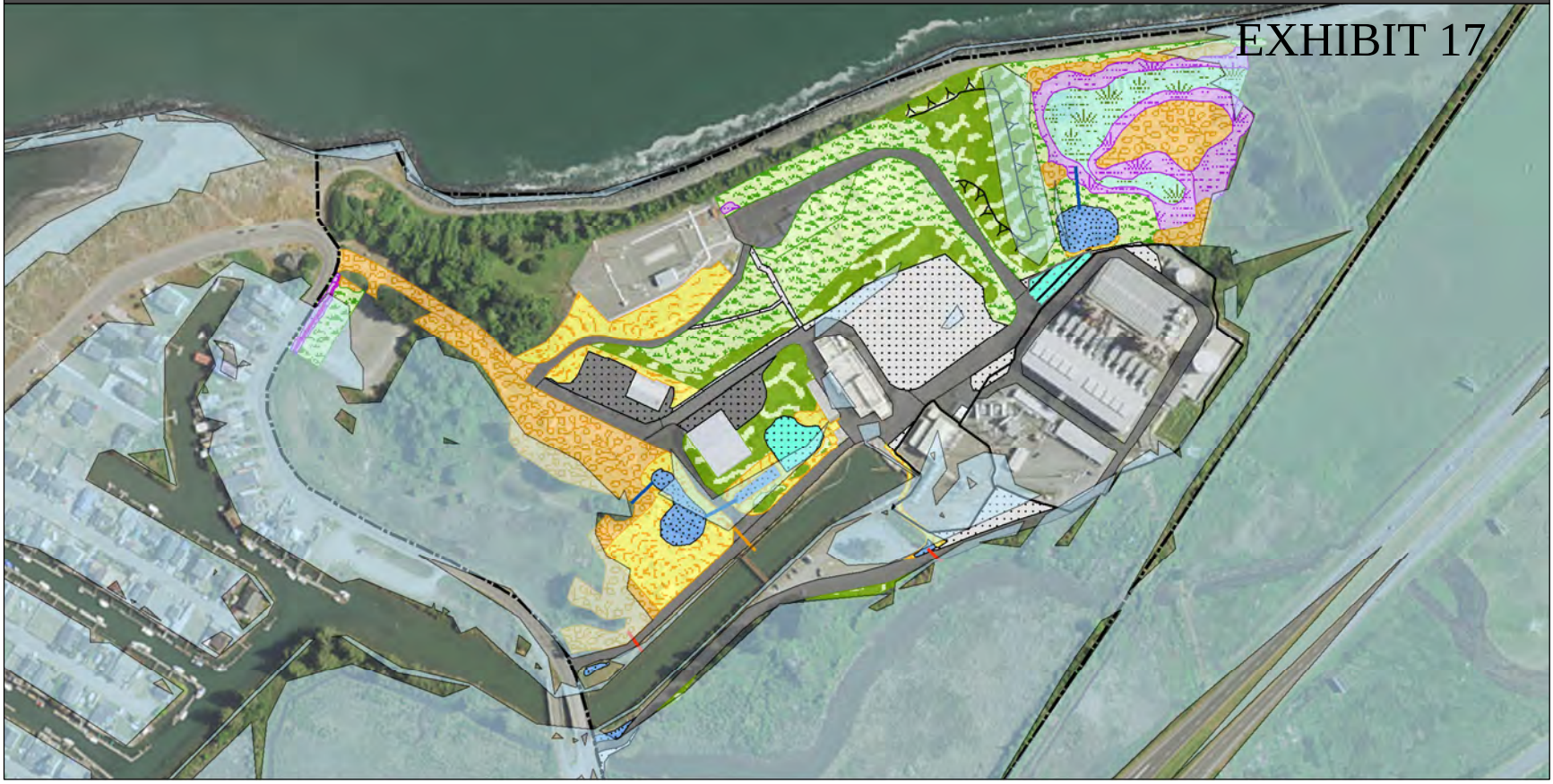
Note:
Image source date: October 29, 2013

FIGURE 6-1
Areas where Concentrations in Soil Exceed Final Cleanup Goals (Potential Soil Remediation Area 1 through 9 and Potential Sediment Remediation Area)
Final Site Restoration Plan Implementation
PG&E Humboldt Bay Power Plant, Eureka, California

EXHIBIT 16

HBPP FINAL SITE RESTORATION PLAN

EXHIBIT 17



Predicted Sea Level Rise Innundation

- Mean annual maximum water (MAMW) current conditions +43.7 cm (17.2 in)
- HBPP boundary
- Current HBGS and Switchyard boundary
- Flow control structure
- Culverts to be replaced
- Culvert to be removed

Infrastructure

- Pre-treatment stormwater basin - underground
- Pre-treatment stormwater basin
- Paving
- Gravel and walkways
- Roads

Conceptual design

- Swale
- Wetland - rushes
- Wetland - brackish
- Stormwater basin
- Coastal prairie
- Managed native grasses
- Coastal scrub
- Riparian scrub
- Top of new slope

Data sources:
Imagery: ESRI World Service
MAMW: Northern Hydrology & Engineering 2014

N

0 25 50 100 Meters

0 75 150 300 Feet

Stillwater Sciences

Humboldt Bay Area