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STAFF REPORT: REGULAR CALENDAR

Application No.:	**5-23-0532**
Applicant:	**University of California Natural Reserve System**
Location:	Within the UC Irvine San Joaquin Marsh Reserve, Southwest of Campus Drive and University Avenue, Irvine (APN: 445-072-36)
Project Description:	Wetland restoration project which includes the excavation of swales, raising berms and dirt roads, and replacing pipes with slide gates to improve water distribution and water quality in the San Joaquin Marsh Reserve. The project would include 7,900 cu. yds. of grading, including 4500 cu. yds. of cut and 3600 cu. yds. of fill.
Staff Recommendation:	Approval with conditions.

SUMMARY OF STAFF RECOMMENDATION

The San Joaquin Marsh Reserve (Marsh Reserve) is an approximately 200-acre depressional wetland complex located in the City of Irvine, Orange County that lies approximately 4 miles inland of the Pacific Ocean (**Exhibit 1**). The Marsh Reserve is

owned by the University of California (UC) and is managed by the University of California, Irvine (UCI) as part of the UC Natural Reserve System (UCNRS) and by UCI. UCI has managed the Marsh Reserve since 1970 for the purposes of research, education, community engagement, and land stewardship. Despite anthropogenic changes to the marsh hydrology and vegetation, remnant habitats of the original marsh remain and provide valuable habitat for several special status species such as light-footed Ridgway's rail, least Bell's vireo, and hundreds of other wildlife species. Existing wetland and upland habitat include semi-permanent shallow and deep-water emergent wetland, permanent shallow ponds, mud flats, and upland buffers of grassland, restored coastal scrub, and riparian. The Marsh Reserve serves as critical habitat along the Pacific Flyway for migratory species and is one of the few remaining wetland complexes along the southern California coast.

The Marsh Reserve consists of six distinct areas: Seasonal Marsh, Upper Marsh, Middle Marsh, Lower Marsh, Hoag Pond, and Experimental Ponds numbered 1-11. Historically, the Marsh Reserve was primarily ground water fed with some input from tributaries of the San Joaquin Hills. In the 1960's, groundwater pumping depleted shallow water aquifers, and the flow of San Diego Creek was channelized to the southeast end of the Marsh Reserve severing direct overland flow connection. The Marsh Reserve retains riparian water rights to San Diego Creek and owns the segment of the Creek immediately adjacent to the Experimental Ponds, Hoag Pond, and the Lower Marsh. Available water resources have been declining within the Marsh Reserve due to continued groundwater pumping in neighboring areas and water diversions and conservation in the San Diego Creek watershed.

Currently, aside from precipitation, flow is controlled by inlets, gates, and outlets that are manually opened or closed by staff. Control gates are lacking in two locations, existing berms bordering certain marshes and ponds are too low to allow units to fill to capacity before spilling into the road, and water levels in the Upper and Middle Marsh need to be near capacity to allow for pumping into the pond system. Additionally, due to sediment build up and drier periods, more xeric vegetation encroached on former open water habitat and water is unable to drain out from the Lower Marsh. As a result, open water habitat has declined in the Upper, Middle, and Lower Marshes. Recently, San Diego Creek levels have been reduced, thereby limiting the amount of water available to be pumped from the creek.

The proposed project is designed to improve long-term water management to sustain hydrologic function and habitat value of the Marsh Reserve and to allow for adaptive management of the area in the face of ongoing climate change impacts including drought and flooding. The project includes four main components, 1) excavation of two approximately 1,000 ft. long, 20-ft. wide swales between 6 and 12-in. deep within the existing Middle and Lower marsh to enhance water distribution circulation and stability of the wetland habitat within the Marsh Reserve; 2) raising the elevation of existing berms and dirt roads surrounding existing ponds approximately 8 inches, such that the resulting elevations will be between 9 and 12 ft. to increase water storage capacity, storage duration, and efficiency of passive drainage; 3) replacement of open pipes with new and/or replacement water control mechanisms such as culverts, headwalls, pipes,

and slide gates to improve water management; and 4) a restoration component with a five year monitoring plan to ensure the projects' success.

The project is proposed to occur in two phases which will be implemented over approximately 18 months from September 2024 to January 2026 with activities in the marsh occurring during the seasonally dry period when water has evaporated (September) and before water is allowed to enter into the system (January).

The first phase of the project involves mowing wetland vegetation to create a 0.52 swale in the Middle marsh, and a 0.59 acre swale in the Lower marsh. Swales will be mowed with equipment, such as a green climber, that cuts no lower than 6-inches above ground level to avoid wildlife. Mowed vegetation will be allowed to sit and decompose throughout the winter as the ponds and marshes fill, reducing the need to remove mowed biomass from the system.

The second phase will include excavation of the two swales that allows for water to flow with gravity at a 5:1 slope between the upper and lower end points of the swale. The construction of the lower marsh swale will result in the excavation of 2,470 cy of soil, while the construction of the middle marsh swale will result in 2,000 cy of soil removal. All excavated material from swales will be used as fill to raise the pond roads. Culverts will be installed in two locations: the first will be located between the middle and lower marsh (**Exhibit 4**) and between pond 3 and the Hoag Pond (**Exhibit 4**). Culvert installation will involve excavation, demolition, and removal of existing pipes, and installation of new 18-in. reinforced concrete culvert pipes (RCP) with slide gates to control water movement. Culverts will be installed during the same timeframe and coordinated around swale excavation and road fill such that culverts are not damaged by equipment accessing the swales.

Berm fill will occur after the swales are excavated, using the material removed from the swales to fill low points within the existing berms and increase the height of existing berms. Prior to fill, herbicide will be utilized on the upland vegetation on roads and/or berms that will be receiving fill to target seedlings of cold season weeds, reducing the need for higher volumes of herbicide later in the season. Herbaceous and fine woody material will be mowed, and rooted woody vegetation greater than 4 inches diameter breast height (dbh) will be left in place. Maximum fill layer will not exceed 8 inches. Once fill is in place it will be compacted with vibratory rollers or other mechanical means or hand-directed compaction equipment.

The project is proposing to apply herbicide to the emergent vegetation in the swales no more than twice during the dry season to any regrowth the following season. The applicants are also proposing to apply herbicide to the berms once in early winter 2025 prior to water being in the ponds and again in Spring or Fall 2025 after ponds dry out if needed. To minimize the need for similar herbicide application projects in the future, the project is proposing to use aquatic-safe herbicides with appropriate adjuvants which are approved by the Environmental Protection Agency (EPA) and California Environmental Protection Agency (CalEPA) to prevent re-growth of the vegetation and

have the lowest toxicity to invertebrates and fish of any of the herbicides approved for use in aquatic environments.

Swale construction will result in permanent wetland habitat type conversion from 6 different wetland vegetation communities to a single wetland community, shallow open water. This conversion totals 1.11 acres, or just over 1% of the total wetland habitat acreage in the Marsh Reserve's Coastal Zone. The ecological benefits of the type conversion are the primary motivation for the proposed project and will be monitored annually for 5 years as a part of the applicant's Restoration Plan. Swale construction will also result in 0.21 acres of impacts to mulefat thickets, important nesting and foraging habitat for the state and federally-listed least Bell's vireo. To mitigate those impacts, the project proposes to restore 0.21 acres of mulefat thickets in currently invaded areas in the Marsh Reserve's Coastal Zone. Mulefat thickets bordering the constructed swales will be maintained to allow water flow to persist. Berm repair and elevation will not result in permanent impacts to wetlands.

The project site is in the City of Irvine. However, the site is also located on land owned by the University of California, Irvine and is excluded from Irvine's certified Local Coastal Program. The University of California, Irvine does not have a Long-Range Development Plan (LRDP) certified by the Commission. Therefore, the Commission is the permitting authority for coastal development and the standard of review for this application is the Chapter 3 policies of the Coastal Act. Staff recommends approval of the proposed project with eleven (11) special conditions to ensure that the project preserves and enhances coastal resources. The motion and resolution can be found on Page 6 of the staff report.

The eleven Special Conditions require: 1) a final restoration and monitoring plan; 2) biological monitoring; 3) nesting bird protection measures for enhancement and maintenance activities; 4) noise and lighting restrictions; 5) integrated pest management; 6) Western pond turtle mitigation plan; 7) borrowing owl preconstruction surveys; 8) nesting bird and raptor monitoring plan; 9) annual monitoring reports, 10) protection of archaeological and tribal resources; and 11) other agency approvals.

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I. MOTION AND RESOLUTION

Motion:

> I move that the Commission **approve** Coastal Development Permit 5-23-0532 pursuant to the staff recommendation.

Staff recommends a **YES** vote. Passage of this motion will result in approval of the permit as conditioned 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 5-23-0532 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 and will not prejudice the ability of the local government having jurisdiction over the area to prepare a Local Coastal Program conforming to the provisions of Chapter 3. 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. **Final Restoration Plan.** PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the permittee shall submit a Restoration Plan that is in substantial conformance with the draft Restoration Plan submitted via email on May 29 2024 . The final Restoration Plan must be approved by the Executive Director. The final Restoration Plan shall include the following as edits or in addition to the content of the draft Restoration Plan:

   A. Updates of appropriate sections concurrent with the permittee's Integrated Pest Management Plan and other Special Conditions discussed in this coastal development permit;

   B. Include a final performance criterion for mulefat mitigation sites of relative percent cover within 20% of relative percent cover of the reference site for mulefat mitigation. Relative percent cover of the mitigation and reference sites shall be assessed annually and reported in annual reports.

   C. A description of the proposed reference site for mulefat, including information on relative percent cover as relevant to the final performance criterionfor mulefat mitigation;

   D. Inclusion of point-intercept protocols to be used to assess the final performance criterion for mulefat mitigation;

   E. Description of potential adaptive management actions to consider if data and analysis show that the mulefat mitigation sites are unlikely to meet final performance criterion;

   F. Table of contents with numbered sections and subsections;

   G. A definition of "invasive" with regard to the plants to be assessed in Objective 3 of the Restoration Plan;

H. A list of invasive plant species currently in the ponds or encroaching the ponds;

I. Clarification of elements to be included among the reporting, monitoring, and maintenance schedules; and

J. The following elements shall be described in the monitoring section of the Restoration Plan: 1. The frequency and/or months where water levels shall be monitored; 2. When photos shall be taken and provided in conjunction with the quarterly monitoring schedule; 3. When California Rapid Assessment Method analysis shall be performed in conjunction with the quarterly monitoring schedule.

2. **Biological Monitor.** BY ACCEPTANCE OF THIS PERMIT, the permittee agrees that a qualified biologist or biological monitor (hereinafter, "Biological Monitor") with knowledge of and experience with the regional ecology represented by the San Joaquin Marsh Reserve, and acceptable to the Executive Director, shall monitor the proposed vegetation mowing, swale excavation and associated ground disturbance, berm raising, and installation of culverts outfitted with slide gates for disturbance to sensitive species or habitat area. Based on field observations, the monitor shall advise the permittee regarding methods to minimize or avoid significant impacts, which could occur upon sensitive species or habitat areas. The permittee shall not undertake any activity that would disturb habitat area unless specifically authorized and mitigated under this coastal development permit or unless an amendment to this coastal development permit for such disturbance has been obtained from the Coastal Commission.

   At a minimum, monitoring shall occur once a week during any week in which vegetation removal or earthmoving occurs. Daily monitoring shall occur during all activities which could significantly impact biological resources that could result in disturbances to the least Bell's vireo, light-footed Ridgway's rail, coastal California gnatcatcher, or state or federally-listed species identified in the area during the course of development activities.

3. **Nesting Bird Protection Measures for Enhancement and Maintenance Activities.** BY ACCEPTANCE OF THIS PERMIT, the permittee agrees that vegetation clearing and construction activities shall generally be conducted outside the bird nesting season, which is between February 15 and September 15. Vegetation clearing and construction activities occurring prior to September 16th may occur only if surveys conducted by the Biological Monitor, as described in this Special Condition, determines that all nesting is complete. This special condition does not apply to burrowing owls or raptors which are addressed in Special Conditions 7 and 8. The Biological Monitor shall be present during vegetation clearing and construction activities to identify appropriate avoidance buffers to employ that follow the Migratory Bird Treaty

Act and comply with the Coastal Act. The permittee shall also comply with all the following measures to protect state and federally-listed bird nesting habitat:

A. The nesting surveys shall consist of a minimum of three focused surveys, on separate days, to determine the presence of state or federally-listed avian nest building activities, egg incubation activities, or brood rearing activities within 500 feet of vegetation clearing or construction activities proposed during the nesting season. The surveys will begin a maximum of 7 days prior to the initiation of vegetation clearing or construction activities and one survey will be conducted the day immediately prior to the initiation of work. Additional surveys will be conducted once a week during vegetation clearing or construction activities in the nesting season. These additional surveys may be suspended as approved by the USFWS Carlsbad Office. The Marsh Reserve Manager shall notify the USFWS Carlsbad Office at least 7 days prior to the initiation of surveys.The survey shall be sufficient to determine the presence of sensitive or endangered bird species, including, but not limited to, Least Bell's vireo (*Vireo bellii pusillus*), light-footed Ridgway's rail (*Rallus obsoletus levipes*), and the coastal California gnatcatcher (*Polioptila californica californica*), nesting or roosting within 500 feet of the work site.

B. If an active nest of state or federally-listed avian species is found within 500 feet of vegetation clearing or construction activities, all clearing and construction activities within 500 feet of the nest shall cease and follow the following protocol. The Marsh Reserve Manager will notify the USFWS Carlsbad Office and the Executive Director within 24 hours of locating any listed avian species. The Biological Monitor will contact the USFWS Carlsbad Office to discuss: 1) the best approach to avoid/minimize impacts to nesting birds (e.g., sound walls, noise monitoring), and 2) a nest monitoring program acceptable to the USFWS Carlsbad Office. Nest monitoring will occur according to a schedule approved by the USFWS Carlsbad Office.

C. The Biological Monitor will determine whether bird activity is being disrupted. If the Biological Monitor determines that bird activity is being disrupted, the Marsh Reserve manager or other representative from UCI Nature or UCI Campus Physical and Environmental Planning will coordinate with the USFWS Carlsbad Office to review the avoidance/minimization approach. Nest monitoring will continue until fledglings have dispersed, as approved by the USFWS Carlsbad Office. If nest monitoring determines that nesting birds are still being disrupted, the applicant will reinitiate consultation with the USFWS Carlsbad Office. Nest monitoring will continue until fledglings have dispersed, or the nest has been determined to have failed, as approved by the USFWS Carlsbad Office.

D. Prior to vegetation clearing activities occurring September 16 to February 14, the Biological Monitor will perform a minimum of three focused pre-construction surveys, on separate days to determine the presence of state or federally-listed avian species in the project impact footprint. Surveys will begin a maximum of 30 days prior to performing vegetation clearing or construction activities, and one survey will be conducted the day immediately prior to the initiation of vegetation clearing or construction activities. If any state or federally-listed avian species are found in the project impact footprint, the Biological Monitor will direct construction personnel to begin vegetation clearing or construction activities in an area at least 500 feet away from the listed avian species.

E. It will be the responsibility of the Biological Monitor to ensure that state or federally-listed avian species will not be injured or killed by vegetation clearing or other construction activities. The Biological Monitor will also record the number and locations of listed avian species displaced by vegetation clearing or construction activities. The Marsh Reserve Manager will notify the USFWS Carlsbad Office at least 7 days prior to project activities to allow the USFWS Carlsbad Office to coordinate with the Biological Monitor on potential bird flushing activities.

F. As no exclusionary fencing is proposed for the resident light-footed Ridgway's rail, the Biological Monitor or the Marsh Reserve Manager must check daily prior to construction activities to see if rails are within 500 feet of the vegetation clearing or construction activities. The Biological Monitor or Reserve Manager will notify the USFWS Carlsbad Office and the Executive Director within 24 hours of detecting any rails within 500 feet of the vegetation clearing or construction activities. If any rails are found within 500 feet of the vegetation clearing or construction activities, the Biological Monitor or Marsh Reserve Manager will direct construction personnel to begin in an area away from the rails. It will be the responsibility of the Biological Monitor to ensure that rails will not be injured or killed by project construction and to record the number and location of rails disturbed by project construction and vegetation clearing. No project activities may occur at night.

G. The findings of each survey shall be reported immediately to the Executive Director. In the event the required survey reveals endangered or threatened avian species nesting or roosting in a tree targeted for removal within the project area, the nest(s) may not be removed nor disturbed. Removal or chemical treatment may only occur after the nesting bird's offspring have fledged.

4. **Noise and Lighting Restrictions.** A monitor shall be consulted to determine which development activities, including but not limited to, noise and lighting activities, have the potential to impact nesting birds. The monitor and permittee shall determine appropriate mitigation measures to reduce or eliminate

impacts. Development activities may only occur if development noise levels do not exceed the greater of 65 dB or ambient noise level at the nest(s) site(s). If project noise exceeds the greater of 65 dB or ambient noise level at the nest(s) site(s), sound mitigation measures such as sound shields, blankets around smaller equipment, use of mufflers, and minimizing the use of back-up alarms shall be employed. If these sound mitigation measures do not reduce noise levels, development shall cease and shall not recommence until either new sound mitigation can be employed, or the nesting bird's offspring have fledged.

5. **Integrated Pest Management Plan.** PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit an integrated pest management plan (IPM) for the review and approval by the Executive Director. The IPM shall be in substantial conformance with pesticide use described in the Restoration Plan. The plan shall incorporate IPM principles including the long-term prevention and management of pests using the most effective strategies that provide the least risk to human health and the environment. The permittee shall comply with the following requirements:

   A. The plan shall outline, at a minimum, the IPM goals, strategies, documentation and notification, responsible parties, steps and details to the removal of vegetation, timing and frequency, and approved chemical herbicides.

   B. A California licensed Pest Control Advisor (PCA) must provide written recommendations regarding the appropriate herbicides and adjuvants for the respective circumstances and species. The State product registration number(s) should be provided along with a complete description of how they will be used, including criteria and limits for if/why/how (including frequency and total number of applications), considerations for pollinators, and triggers for adaptive management or remedial actions.

   C. Herbicide use shall be restricted to the use of aquatic-safe herbicides registered in California by the California Department of Pesticide Regulation appropriate for the respective task and shall explicitly comply with label instructions. Adjuvants shall be limited to crop oil concentrates or modified seed oils. Adjuvants and Herbicides shall be applied in complete conformance to the label instructions for the intended use and shall be monitored on site by Qualified Licensed Applicators or PCAs. All applicable Conservation Measures shall have been applied to avoid wildlife exposure to herbicides in the impact area.

   D. All personnel administering herbicides must have current, documented herbicide application training (QAL licenses). Personnel must wear all personal protective equipment (PPE) required by law and follow all label directions and precautions. Any exposure to herbicides by personnel will be immediately reported to the Executive Director.

E. The Reserve Manager, Biological Monitor, or other qualified UCI Nature biologists shall conduct a survey of the project site each day prior the use of herbicide to confirm the impact area for herbicide application for that day and determine whether any rare vegetation with a California Rare Plant Rank of 2B.1 or more rare is present. Rare vegetation shall be clearly delineated and protected on the project site with fencing or survey flags. In the event that herbicide application occurs within 1 foot of rare vegetation, the applicant shall either: (a) remove invasive non-native vegetation by hand (*Typha* spp. shall be cut to a height of 6 inches or less, and the stumps painted with the appropriate herbicide), or (b) utilize a plastic sheet/barrier to shield rare vegetation or surface water from any potential overspray that may occur during use of herbicide. .

F. In no instance shall spray herbicide application occur if wind speeds on site are greater than 5 mph or 48 hours prior to predicted rain. In the event that rain does occur, herbicide application shall not resume again until 72 hours after rain. Herbicide applications shall be timed to avoid rainfall events.

G. Use, application, storage, safety, and disposal of all herbicides and adjuvants shall comply with the requirements of the California Department of Pesticide Regulation, California State Water Resources Control Board, state and federal OSHA regulations, and manufacturer instructions on product labels, Material Safety Data Sheets, and current practices.

H. Herbicide mixing and preparation shall occur at least 100 ft. from all water bodies. No herbicide shall be applied within 10 ft. of any trail or 20 ft. of paved accessways or motorways.

I. All applications within 50 ft. of a trail or paved accessway shall be closed from public access via temporary fencing which shall be removed immediately following project conclusion. Areas where herbicide use is employed will also be marked with a non-toxic material (e.g., Blazon, Turfmark).

J. Any proposed changes to the approved final plans shall be reported to the Executive Director. No changes to the approved final plans shall occur without a Commission amendment to this Coastal Development Permit unless the Executive Director determines that no amendment is legally required.

6. **Western pond turtle mitigation plan.** PRIOR TO CONSTRUCTION, the permittee shall submit a draft and final Western Pond Turtle Construction Monitoring Plan (WPTCMP). The plan shall be carried out under the direction of the Biological Monitor or qualified UCI Nature or UCNRS biologist. The

WPTCMP shall substantially conform to the measures provided in the permittee's Restoration Plan and comply with the following requirements:

A. Vegetation clearing and construction activities shall occur in areas that have dried down during the typical management cycles of inundation and dry down periods employed at the Marsh Reserve. If vegetation clearing and construction activities during inundation cannot be avoided, aquatic methods to monitor, trap, and relocate turtles shall be employed according to the WPTCMP.

B. A biologist familiar with the ecology, behavior, and movement patterns of the pond turtle within the Marsh Reserve shall prepare the WPTCMP and may implement the WPTCMP under the direction of the Marsh Reserve Manager and with assistance from other UCI Nature or UCNRS staff.

C. The WPTCMP shall include the following components:

    i. Goals;

    ii. Methods to be employed in pre-construction surveys, including mapping requirement and schedules of activity as they relate to the aquatic and upland stages of the western pond turtle lifecycle;

    iii. Monitoring requirements during construction for each phase of the western pond turtle life cycle as applicable to the construction period and whether construction areas are inundated;

    iv. Methods for removing western pond turtles from the project impact area if found during monitoring;

    v. A description of exclusionary fencing or enclosures necessary to protect western pond turtle and locations where such can be determined during WPTCMP preparation;

    vi. Reporting requirements.

D. The final WPTCMP must be reviewed and approved by the Marsh Reserve Manager and CDFW and received by the Executive Director 30 days prior to the start of construction to allow sufficient time for pre-construction surveys and associated mapping needed to protect western pond turtle.

E. Best practices shall be included in the WPTCMP as follows:

    i. Earth work activities in areas that are not inundated with water will be surveyed for turtles and burrows prior to both vegetation removal with large equipment and again prior to earth work. Should construction activities occur in inundated areas, a combination of

visual, seine, and trap methods will be utilized during preconstruction surveys to determine the population structure and status.

ii. A minimum of two trapping periods, each consisting of four days and three nights, will be conducted during the period of peak pond turtle activity (e.g., April to August). A CDFW-approved biologist will visually survey the work area prior to construction activities and relocate any western pond turtles to the relocation site as approved by CDFW and the Marsh Reserve Manager.

iii. If a pond turtle enters the construction area following pre-construction trapping, the Biological Monitor shall have the authority to halt construction that could harm the turtle until the individual can be captured and relocated. The Biological Monitor shall contact the Marsh Reserve Manager or other representative from UCI Nature or UCI Campus Physical and Environmental Planning, and the Manager or UCI representative shall contact CDFW immediately to notify them of the observation. If construction activities occur in inundated areas and the western pond turtle has not been captured after four days of trapping, the Marsh Reserve Manager or UCI representative shall contact CDFW to determine whether trapping will be extended, or for authorization to continue construction activities.

iv. Exclusionary fencing shall be constructed and maintained throughout the duration of construction in inundated areas. The integrity of the fencing will be checked daily by the Biological Monitor. Any western pond turtle found within the exclusion area will be relocated immediately to the relocation area approved by the Marsh Reserve Manager and CDFW.

v. If pond turtles are relocated pre-construction or during daily biological monitoring, the Biological Monitor shall visit the relocation site at a specified interval in the WPTCMP to monitor the effectiveness of turtle relocation.

F. Any proposed changes to the approved final plans shall be reported to the Executive Director. No changes to the approved final plans shall occur without a Commission amendment to this Coastal Development Permit unless the Executive Director determines that no amendment is legally required.

7. **Burrowing owl pre-construction surveys**. PRIOR TO AND DURING CONSTRUCTION, the permittee shall conduct a pre-construction, protocol-level survey that identifies the presence and location of any burrowing owls on or adjacent to the berm areas no more than 72 hours prior to construction. If

any earth disturbing construction work will take place between December 1 and January 31, an additional survey for burrowing owl winter residents prior to construction work during this time period is required. The biologist hired to perform burrowing owl surveys should have prior experience surveying for ground-nesting avian species. The Biological Monitor or other UCI Nature or UCNRS staff may fill the role of the burrowing owl surveying biologist if qualified to survey for burrowing owls. If burrowing owls are found within 150 feet of any construction activities, all construction must cease and consultation with the California Department of Fish and Wildlife is required. Construction will not resume until the Biological Monitor and the Reserve Manager consult with the California Department of Fish and Wildlife and have confirmed, in writing, that the area is clear of owl activity or that the construction activities will not affect burrowing owls. The Biological Monitor shall visibly mark the area of any active burrow and communicate any buffer boundaries to all project workers on site. The Marsh Reserve Manager shall notify Commission staff of any active owl nest detected during surveys or construction within 30 days of a positive detection and the avoidance measures taken to protect the nest from disturbance.

8. **Nesting raptor surveys and monitoring.** No more than 72 hours prior to construction occurring between January 1 and August 31, the Biological Monitor shall conduct a survey for nesting raptors. The survey shall take place in any suitable raptor nesting habitat, including but not limited to trees or marsh edges, within 500 feet of the project impact footprint. Nest surveys shall continue every week throughout the nesting season or until the project is completed, whichever comes first. If construction activities cease for 4 or more consecutive days during January 1 and August 31, repeat nest surveys will be required to ensure new nesting locations have not been established within 500 feet of the project impact footprint. Should a raptor nest be detected, a buffer of 500 feet from the nest shall be established and no activity shall occur within the buffer zone until the Biological Monitor determines, and CDFW confirms, that all chicks have fledged and are no longer reliant on the nest site. The Biological Monitor shall visibly mark the area of any active raptor nest and communicate the buffer boundaries to all project workers on site. The Marsh Reserve Manager shall notify Commission staff of any active raptor nest detected during surveys or construction within 30 days of a positive detection and the avoidance measures taken to protect the nest from disturbance.

9. **Annual Monitoring and Maintenance Reports.** Monitoring and maintenance assessments shall occur on an ongoing, adaptive management basis as approved by the Commission. BY ACCEPTANCE OF THIS PERMIT, the permittee agrees to submit annual monitoring and maintenance reports for five (5) years following the end of construction activities and mitigation installation. The reports shall be composed under the direction of a qualified San Joaquin

Marsh Reserve or UCNRS biologist. The reports shall document and include all of the following:

A. Written narrative of progress towards accomplishing each objective in the Restoration Plan.

B. Adaptive management needs to meet the restoration goals in the Restoration Plan, and updates on any adaptive management actions described in any previous reports.

C. Written narrative of any intermittent or ongoing maintenance of project elements.

D. Inclusion of site photos, mapping, and raw data sheets for the assessment of vegetation and wetland restoration.

E. Any other data, analyses, or figures discussed in the Restoration Plan that are relevant to meeting the restoration goals.

F. The permittee may request sign-off of mulefat mitigation prior to the 5th year monitoring and maintenance report if monitoring data indicate each mitigation site is meeting performance criteria as described and measured according to methods in the Restoration Plan. The fulfillment of the mulefat mitigation requirement must be approved by the Executive Director. Once the mitigation requirement has been fulfilled, written descriptions and data regarding the mulefat mitigation sites shall no longer be required in the annual monitoring and maintenance report.

G. If mulefat mitigation sites are not meeting performance criteria after 5 years of monitoring and maintenance as outlined in the Restoration Plan, the Executive Director may require additional monitoring and maintenance reports of the mitigation site. The permittee shall consult with Commission staff regarding necessary adaptive management actions to meet performance criteria for the mitigation of mulefat.

10. **Protection of Archaeological and Tribal Cultural Resources**.

A. AT LEAST THREE MONTHS PRIOR TO COMMENCEMENT OF ANY GROUND-DISTURBING CONSTRUCTION ACTIVITIES, the applicant shall submit, for the review and approval of the Executive Director, a Cultural Resources Treatment and Monitoring Plan prepared by a qualified resource specialist in consultation with Gabrieleño-affiliated Native American representatives, which shall incorporate the following measures and procedures:

i. All representatives of Gabrieleño-affiliated Native American Tribes listed on an updated Native American Heritage Commission

(NAHC) contact list for the area shall be invited to consult on the preparation of the monitoring plan and all who accept the invitation shall be allowed to consult and shall be meaningfully considered in the plan's development. Evidence of written notification shall be made available to the Executive Director.

ii. The monitoring plan shall ensure that any prehistoric archaeological or paleontological or Native American cultural resources that are present on the site and could be impacted by the approved development will be identified so that a plan for their protection can be developed. The methods of protection of Tribal Cultural Resources shall be developed in consultation with the Native American tribal government(s). To this end, the cultural resources monitoring plan shall require that the Gabrieleño-affiliated representatives of Native American Tribes listed on an updated Native American Heritage Commission (NAHC) contact list for the area be invited to be present and monitor all ground-disturbing activities and arrange for any invited Tribal representative that requests to monitor and a qualified archaeological monitor to be present to observe project activities with the potential to impact archaeological and/or tribal cultural resources. The monitor(s) shall have experience monitoring for archaeological resources of the local area during excavation projects, be competent to identify significant resource types, and be aware of recommended Tribal procedures for the inadvertent discovery of archaeological resources and human remains.

iii. There shall be at least one pre-grading conference with the project manager and grading contractor at the project site to discuss the potential for the discovery of archaeological/tribal cultural or paleontological resources. Prior to grading operations, a copy of all archeological documents and reports shall be provided to the Native American monitors.

iv. The permittee shall provide sufficient archaeological and Gabrieleño-affiliated Native American monitors to assure that all project grading and subsurface construction activities that have any potential to uncover or otherwise disturb cultural deposits are monitored at all times.

v. If any archaeological or paleontological, or cultural deposits, are discovered, including but not limited to skeletal remains and grave-related artifacts, artifacts of traditional cultural, religious or spiritual sites, or any other artifacts relating to the use or habitation sites, all construction shall cease. Should human remains be discovered on-site during the course of the project, immediately after such discovery, the on-site archaeologist and Native American monitor(s) shall notify the County Coroner within 24 hours of such discovery, and all construction activities shall be temporarily halted until the remains can be identified. The Native American

group/person deemed acceptable by the NAHC shall participate in the identification process, pursuant to Public Resources Code Section 5097.98. Should the human remains be determined to be that of a Native American, the permittee shall comply with the requirements of Section 5097.98. Within five (5) calendar days of such notification, the permittee shall notify the Executive Director of the discovery of human remains. Treatment of any archaeological, paleontological, or cultural resource discovery shall be determined by the appropriate monitor(s) or the Most Likely Descendant (MLD) when state law mandates the identification of an MLD. Significance testing may be carried out only if acceptable to the affected Native American Tribe(s), in accordance with the attached "Cultural Resources Significance Testing Plan Procedures" (Appendix B). The permittee shall report all discovered resources as soon as possible, by phone and/or by email to the Executive Director. The permittee shall provide the significance testing results and analysis to the Executive Director, if applicable. An applicant seeking to recommence construction activities shall follow the procedures set forth in Appendix B.

B. If the Executive Director determines that the discovery is significant or that the treatment method preferred by the affected Native American tribe(s) is in conflict with the approved development plan, the permittee shall seek an amendment from the Commission to determine how to respond to the discovery and to protect both those and any further cultural deposits that are encountered. Development shall not recommence until an amendment is approved, and then only in compliance with the provisions of such amendment.

11. **Other Agency Approvals.** PRIOR TO COMMENCEMENT OF DEVELOPMENT ACTIVITIES, the permittee shall provide to the Executive Director copies of any/all permits issued by the Regional Water Quality Control Board, California Department of Fish and Wildlife, U.S. Fish and Wildlife Service, U.S. Army Corps of Engineers, and Environmental Protection Agency, or letter(s) of permission, or evidence that no permit or permission is required. The permittee shall inform the Executive Director of any changes to the project required by these resource agencies. Such changes shall not be incorporated into the project until the permittee obtains a Commission amendment to this coastal development permit, unless the Executive Director issues a written determination that no amendment is legally required.

IV. FINDINGS AND DECLARATIONS

PROJECT DESCRIPTION

Project Location

The San Joaquin Marsh Reserve (Marsh Reserve) is a managed, approximately 200-acre depressional wetland complex that lies 4.3 miles inland of Pacific Coast Highway in Irvine. The land is owned by the University of California and is managed by the University of California, Irvine (UCI) as part of the UC Natural Reserve System (UCNRS) **(Exhibit 1)**. The Project is located south of Interstate 405, west of University Drive, and south of Campus Drive. The Marsh Reserve area consists of seasonal shallow marsh, deeper semi-permanent marsh, shallow Project ponds, and adjacent upland buffers. Depending on water availability, the marsh generally supports approximately 30 acres of open water, 30 acres of shallow ponds, and 70 acres of shallow and deep semipermanent emergent marshlands.

Site History

The Marsh Reserve is a remnant of a larger freshwater and salt marsh system which was historically fed by a shallow water aquifer and a drainage from the San Joaquin Hills to the east, which periodically received tidal flows from Newport Bay creating brackish conditions at lower elevations. Although anthropogenic changes to the hydrology and vegetation over time (dam installation to protect salt desiccation ponds which were then farmed for feed and the creation of duck hunting ponds) have resulted in less open water to pool in the Marsh, remnant habitats of the original marsh remain which provide important habitat for several special status species and hundreds of other wildlife species. It is one of the few remaining wetland complexes along the southern California coast where freshwater from San Diego creek meets tidal flows coming up from Newport Back Bay forming connectivity corridors with a diversity of ecosystems in a mostly urbanized landscape. In the late 1990's a grant from the Coastal Conservancy provided the UCI Marsh with a direct pipe connection to San Diego Creek from which it could pump water from the reach of the creek it owned and redesigned and enhanced the former duck hunting ponds, subsequently calling them Experimental Ponds due to a series of control gates and replicate ponds.

Several coastal development permits have been issued for the Marsh Reserve over the past decades. In 1977, the Coastal Commission issued CDP P-2-1-77-59 which allowed for the construction of a 30 ft. wide bypass channel, vegetation clearance, installation of culverts, and removal of sediment to deepen existing ponds. In 1987, CDP 5-87-644 was issued to UCNRS which authorized the clearing of excessive vegetation overgrowth as a means of habitat restoration and maintenance, specifically for Pond No. 4. In 1990, CDP 5-90-1023 was issued to the Irvine Company for the restoration and enhancement of portions of the Marsh Reserve.

In 1993, CDP 5-93-253 was approved for the expansion of Hoag Memorial Hospital which involved the removal of 1.52 acres of wetlands for public service use. Mitigation for the removal included the restoration of 4.53 acres of freshwater marsh in the Marsh Reserve. The Hoag mitigation site consists of seasonal ponds and upland acreage. In 1999, CDP 5-99-088 was issued to UCI for Phase I of the San Joaquin restoration plan, for the grading and excavation of the existing seasonal wetland ponds, re-contouring the pond floors to provide for open water and freshwater marsh habitat, re-grading the

levees to contain water at various depths, improving hydrology by pumping water from San Diego Creek, and planting upland area with coastal sage scrub vegetation.

In 2004, CDP 5-04-356 was issued to UCI for Phase 2 of the San Joaquin restoration plan which included the removal of 4,000 lineal ft. (3.97 acres) of existing levees, excavation of 13.08 acres of marsh vegetation to restore lost open water/mudflat habitat, installation of a new pipeline along the east-west main levee to provide the flexibility to be able to pump water through the marsh system and between selected marsh units with a portable pump, installation or repair/replacement of culvert connections between marsh units, installation of 2.8 acres of riparian vegetation along existing levees and other newly created features to mitigate for 0.93 acre of riparian habitat lost during levee removal and construction of marsh connections, and improvement and repair of existing levee roads to facilitate better access to marsh units throughout the marsh. efforts for the improvement of water movement in the freshwater marsh in the Phase 2 region and to restore open water habitat in the marsh.

In 2008, CDP Amendment No. 5-04-356- A1 was approved, which allowed for the creation of an additional 1.2 acres of riparian scrub habitat including the removal of existing, non-native, invasive vegetation, the excavation of approximately 1,800 cu. yds. of material to a sufficient elevation for riparian plantings to have access to water, and planting with native riparian scrub species.

Project Purpose and Description

Available water resources have been declining within the Marsh Reserve due to continued groundwater pumping in neighboring areas and water diversions and conservation in the San Diego Creek watershed. Water conveyed from Irvine Ranch Water District, the University's agent conveying water from the San Diego Creek based on the University's riparian rights, is the primary source of water into the marsh and flows via a culvert under Campus Drive. Currently, aside from precipitation, flow is controlled by inlets, gates, and outlets that are manually opened or closed by University of California Natural Reserve System (UCNRS) staff. In the past decade, droughts have intensified, and it has become difficult to maintain water levels within the Marsh Reserve using the current antiquated infrastructure. Presently, the applicants are unable to maintain enough water in the reserve and among the various ponds and different elevations. New control gates are necessary in two locations: 1) where berms bordering certain marshes and ponds are too low to allow them to fill to capacity before spilling into the road, and water levels in the Upper and Middle Marsh need to be near capacity to allow for pumping into the pond system; and 2) due to sediment buildup and drier periods, more xeric vegetation encroached on former open water habitat and water is unable to drain out from the Lower Marsh. As a result, open water habitat has declined in the Upper, Middle, and Lower Marshes. Recently, San Diego Creek levels have been reduced, thereby limiting the amount of water available to be pumped from the creek.

As detailed below, the proposed project will increase the ability to retain and manage water within the Marsh Reserve and will improve the marsh habitat.. The UCNRS

proposes to establish infrastructure to address long-term water management and maintain hydrologic function and habitat value in the face of ongoing and unpredictable climate change impacts including drought, flooding, and sea level rise. The proposed project has three major components; 1) excavation of swales to enhance water distribution, circulation, and stability of wetland habitat; 2) raising berms and dirt roads to increase storage capacity, storage duration, and the efficiency of passive drainage; and 3) replacing open pipes with culvert outfitted with slide gates.

Prior to swale excavation during the dry season, to mitigate for impacts to mating or nesting species such as birds and western pond turtles, the applicant proposes to mow vegetation, primarily cattails and reeds, up to 3-ft. on either side of the swale footprint to no less than a 6-in. above the ground using a green climber or equivalent equipment. The applicant proposes the 6-in. ground clearance limit to mitigate for potential impacts to surface dwelling wildlife, nests, or burrows that may be used by species in the area. In addition, mowing for the Lower Marsh swale is anticipated to permanently impact 0.21 acres of mulefat (*Baccharis salicifolia*) in the area, which will be mitigated for on-site at a 1:1 ratio. All the mowed vegetation will be left in place to naturally decompose, reducing the need for additional heavy equipment or trucks to remove the biomass from the area. As the material decomposes, the applicant proposes to treat reemergent (sprouting) vegetation with an aquatic-safe herbicide targeted to treat vegetation that is between 3-5 in. in height. Prior to excavation, any remaining vegetation debris within the proposed swale footprint will be pushed outside of the area using a gannon gripper or equivalent equipment. The biomass will be positioned to avoid placement in sensitive vegetation areas to the maximum extent feasible. Trees and other vegetation outside of the excavation area will be protected in place.

The applicant is proposing to apply herbicide to the emergent vegetation root structures following mowing because the applicants' experience in managing the marsh has demonstrated that when cut, the vegetation grows back within one month without herbicide application, and cutting of the regrowth would not be efficient or effective as it does not kill the roots and the plants would keep resprouting. Herbicide would be applied during the dry season to any regrowth the following season once vegetation exceeds 3-5 inches in height, and the applicants do not anticipate utilizing herbicide more than twice during the duration of the project. To minimize the need for similar projects in the future, the applicant is proposing to use herbicides approved by the Environmental Protection Agency (EPA) and California Environmental Protection Agency (CalEPA) for aquatic use to prevent re-growth of the vegetation and have the lowest toxicity to invertebrates and fish of any of the herbicides approved for use in aquatic environments, as described in more detail in the Biological Resources Section. Berms will be sprayed once in early winter 2025 prior to water being in the ponds and again in Spring or Fall 2025 after the ponds dry out if needed. Swales would provide locations for water to pool by lowering the soil elevation, which would in turn allow wetland habitat to persist during dry years and allow for directed drainage during flooding events. Portions of the Lower Marsh was disked prior to the channelization of the adjacent San Diego Creek, resulting in loss of habitat. The swale is designed to restore emergent marsh habitat and provide a drainage path to San Diego Creek for elevations above 7 ft. above sea level.

Water enters the Marsh Reserve two ways: 1) via storm flows as passive intake and 2) a conveyance from the neighboring Irvine Ranch Water District (IRWD) based on the University's riparian water rights to San Diego Creek, located outside of the Coastal zone. This is necessary because the University is no longer able to pump sufficient amounts of water directly from San Diego Creek at the inlet along its reach of the creek due to persistent low water levels, with the exception of short-term flows during storm events. This change in the level of San Diego Creek was partly due to the disassembly of a dam by MacArthur bridge to allow for connectivity with Newport Back Bay and partly due to groundwater diversions to avoid selenium accumulation, and water conservation the past decade resulting from drought. Passive intake has become increasingly unpredictable as climate change impacts persist. As water becomes less available, portions of the Marsh Reserve (e.g. the Middle Marsh) are subject to drying out which could potentially impact wetland habitat and the numerous special species that rely on wetland habitat (**Exhibit 1**). To address this, the applicant proposes to excavate a swale in the Middle Marsh and a swale in Lower Marsh, which would be designed to improve habitat refugia during dry years by creating lower elevation areas within the Reserve. The lowered regions would retain water for longer periods of time by reducing the potential for evaporation. The Middle Marsh swale would additionally allow for water conveyance at lower surface elevations so water can be pumped from the Middle Marsh to ponds even when water levels are low. Ponds in the area are managed as semi-permanent marsh and perennial ponds and thus need to be supplied with water at various times throughout the year compared to the Middle and Lower Marsh areas. In total, approximately 2,470 cu yds of material will be excavated from the Lower Marsh and 2,040 cu yds of material will be excavated from the Middle Marsh to accomplish the goals of the project.

Material that is excavated will be reused on site to the maximum extent feasible for raising berms along roads and ponds at low elevations. Within the coastal zone this will account for approximately 3,600 cu yds. of fill. The remaining material will be used outside of the Coastal Zone but be prioritized for use on site. Raising the elevation of the existing berms and roads is designed to increase capacity of multiple regions of the marsh and is anticipated to extend the duration of wetland habitat longer into the growing season and allow for passive flow into adjacent areas, as needed.

The applicant additionally proposes to replace the existing open pipes with a culvert outfitted with a slide gate between the Middle and Lower Marshes to allow for maintenance of refugia habitat in the Middle marsh during dry or drought years. Installing a culvert and slide gate between Hoag Pond and Pond No.3 would increase the function of Hoag Pond as an optional water source.

STANDARD OF REVIEW

The project site is in the City of Irvine, which has a Local Coastal Program, certified in 1982. However, the site is also located on land owned by the University of California, Irvine and excluded from Irvine's certified Local Coastal Program. The University of California, Irvine does not have a Long-Range Development Plan (LRDP) certified by

the Commission. Therefore, the Commission is the permitting authority and the standard of review is the Chapter 3 policies of the Coastal Act.

BIOLOGICAL RESOURCES

Section 30231 of the Coastal Act 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 waterflow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.

Section 30233 of the Coastal Act states, in pertinent part:

> (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:
>
> ...
>
> (6) Restoration purposes.
>
> (7) Nature study, aquaculture, or similar resource dependent activities.
>
> (b) Dredging and spoils disposal shall be planned and carried out to avoid significant disruption to marine and wildlife habitats and water circulation. Dredge spoils suitable for beach replenishment should be transported for these purposes to appropriate beaches or into suitable longshore current systems.
>
> (c) In addition to the other provisions of this section, diking, filling, or dredging in existing estuaries and wetlands shall maintain or enhance the functional capacity of the wetland or estuary. Any alteration of coastal wetlands identified by the Department of Fish and Wildlife, including, but not limited to, the 19 coastal wetlands identified in its report entitled, "Acquisition Priorities for the Coastal Wetlands of California", shall be limited to very minor incidental public facilities, restorative measures, nature study, commercial fishing facilities in Bodega Bay, and development in already developed parts of south San Diego Bay, if otherwise in accordance with this division.

Wetland Delineation and Vegetation Communities

Biologists from Glenn Lukos Associates, Inc. performed a jurisdictional wetland delineation of the Marsh Reserve over 6 dates in October, November, and December of 2020. Prior to the delineation, the biologists analyzed multiple aerial photographs taken as a part of a previous wetland delineation in 2004. Suspected jurisdictional areas were then field verified based on the presence of channels or wetland vegetation, soils, and hydrology. Due to the size of the Marsh Reserve and the limited project impacts within the Reserve, the biologists determined that areas outside of proposed permanent and temporary impact areas were wetland based on both the presence of standing water in aerial photographs and evidence of emergent vegetation with wetland indicator statuses of either Facultative Wetland (FACW, or occurs in wetland habitats 67-99% of the time) or Obligate (OBL, or occurs in wetland habitats greater than 99% of the time). This delineation satisfies the definition of wetland per California Code of Regulations Section 13577(b). While more of the Marsh Reserve may qualify as wetland under section 13577(b), all but 0.015 acres of impacts that are not to already existing roads are occurring in wetlands as delineated by Glenn Lukos Associates, Inc. The acreage permanently impacted that is not considered wetland is mixed herbaceous upland. Therefore, the mapped jurisdictional areas by Glenn Lukos Associates, Inc. are classified as wetlands for the purposes of the use, impact, and mitigation analysis.

Approximately 110 acres of the Marsh Reserve lie in the Coastal Zone. The vegetation alliances in the Marsh Reserve's Coastal Zone are classified according to the Manual of California Vegetation, Vol. 2 and are mapped on **Exhibit 2**. A vast majority of this acreage consists of low-lying, native and non-native wetland communities. Native communities include large swaths of California bulrush marsh, salt marsh bulrush marsh, and mulefat thickets, which support some native vegetative diversity but in most locations are densely vegetated by monocultures of California bulrush (*Schoenoplectus californicus*), salt marsh bulrush (*Bolboschoenus maritimus*), and mulefat (*Baccharis salicifolia*) respectively. Monocultures of native vegetation are typical of many wetlands in Southern California, and together these vegetation communities create a patchwork of native wetlands across the Marsh Reserve. Similarly, monoculture communities of cattail marshes (*Typha* spp.) dominate much of the Middle Marsh. While cattail marsh is a native vegetation community that provides important wetland functions including removal of pollutants from water and shelter and food for wildlife, it can also quickly dominate other areas of native vegetation that may be more sensitive and provide for wetland wildlife that do not use dense cattail vegetation. Smaller acreages of native Goodding's willow riparian forest and woodland, Western sea-purslane mats, pickleweed mats, and open water including in the experimental ponds also occur in the Coastal Zone. The remainder of the wetland vegetation communities consists of swamp pricklegrass mats, an invasive wetland vegetation community. A large portion of wetland habitat consists of mixed herbaceous wetland, or wetland that meets criteria for classification as a wetland but is comprised of non-native or invasive species inconsistent with the membership rules for vegetation alliances. Slightly higher elevations border the reserve and support upland vegetation. Two native upland vegetation communities, California sagebrush scrub and a small patch of coast prickly pear scrub are in the Marsh Reserve's Coastal Zone but not within the project footprint.

Areas of mixed herbaceous upland are areas that do not meet the criteria for classification as a wetland or for a particular vegetation alliance, and primarily consist of non-native or invasive plant species. A small portion of the project will impact mixed herbaceous upland and currently disturbed berm areas, but the majority of the project occurs in wetland vegetation communities.

Special Status Plants and Wildlife

The expanse of wetland and upland vegetation alliances in the Marsh Reserve support a variety of resident and migratory wildlife that may breed, rest, or forage there. For example, over 200 species of birds have been identified on the Marsh Reserve through regular monthly surveys conducted over 15 years by Sea and Sage Audubon. Those observations are publicly viewable on eBird. While the Marsh Reserve remains a hotspot of avian diversity and contains special status vegetation alliances, it is not listed as critical habitat for any plant or wildlife species under the federal Endangered Species Act.

The sections below describe the occurrences and suitable habitat of special status plants and wildlife in the Marsh Reserve's Coastal Zone, highlighting occurrences in and surrounding the project impact footprint as highlighted in **Exhibit 3.** The information regarding special status plants and wildlife in the Reserve originates from the applicant's biological report prepared in March 2021 and the California Natural Diversity Database (CNDDB). Plants and animals were considered special status based on meeting any of the following criteria: listed or proposed as endangered or threatened under the Federal or State Endangered Species Act; designated as a California Fully Protected species; a rank of 2B.1 or more rare on the California Rare Plant Ranking (CRPR) hosted by the California Native Plant Society; or where the best available science determines species are in decline throughout the Commission's jurisdiction.

Special Status Plants

Southern tarplant (*Centromadia parryi australis*; CRPR 1B.1 or rare, threatened, or endangered in California and elsewhere) is the sole special status plant with occurrences recorded in the last 5 years within the Marsh Reserve's Coastal Zone. Southern tarplant is an annual flowering species often found on the edges of marshes that is threatened by habitat fragmentation and development, like most marshes in Southern California. It is mapped in the Marsh Reserve's biological report along the bluff road in upland habitat that borders the Middle Marsh to the west and north. The road lies greater than 100 feet from any area of permanent impacts or temporary accessways or staging areas. Thus, no impacts to this species are anticipated from project activities.

The biological report and CNDDB report occurrences of California boxthorn (*Lycium californicum*; CRPR 4.2) and vernal barley (*Hordeum intercedens*; CRPR 3.2) in or bordering the Marsh Reserve. However, these species do not meet criteria for classification as a special status plant. Two other species – many-stemmed dudleya

(*Dudleya multicaulis*; CRPR 1B.2) and estuary seablite (*Suaeda esteroa*; CRPR 1B.2) -- have recorded occurrences at the Marsh Reserve but, due to their absence in recent surveys performed for the biological report as well as observations by the Reserve Manager, are assumed extirpated. Many-stemmed dudleya were previously planted in upland sagebrush vegetation along the northern edge of the Middle Marsh, which is outside of the project impact footprint. Estuary seablite previously occurred in the managed ponds. Neither area is within the area of permanent impacts or temporary accessways or staging areas for this project.

Western Pond Turtle

The Western pond turtle (*Emys marmorata*) is proposed as a threatened species under the Federal Endangered Species Act by the United States Fish and Wildlife Service (USFWS). Western pond turtles are residents in the Marsh Reserve where they forage in aquatic habitats, lay eggs in terrestrial habitats, and aestivate, or become dormant, during the winter months. The primary threat to turtles is habitat destruction resulting from changes in water flow and consistency as well as disease and invasive species, including red-eared sliders and bullfrogs, which compete for similar resources as the turtle.

Biologist Barry Nerhus Jr. tracked turtle movements and activity in the Marsh Reserve from 2008-2012 using radio telemetry and mark-recapture methods. The study found turtles use the Middle Marsh, ponds, and the northern area of the Lower Marsh. Turtle nests were mapped in uplands bordering each of these areas. At that time, the population of turtles in the Marsh Reserve was between 274 and 355 individual turtles, making it the largest known population of this species in Orange County and the 6th largest in Southern California. Although this species is not yet federally listed, its status may change during the course of the project. More importantly, given their resident status throughout the project impact footprint and the importance of this population locally, avoidance and minimization measures drafted in consultation with the USFWS are required for this species while this project is underway.

Light-footed Ridgway's rail

Light-footed Ridgway's rail (*Rallus obsoletus levipes)* is a reclusive marsh-dwelling bird that is state- and federally-endangered and a California Fully Protected Species. Their rarity is primarily due to the extensive degradation and loss of the salt marsh and freshwater marsh habitats they depend on for the entirety of their life history. Light-footed Ridgway's rails use dense marsh vegetation for roosting and nesting and move to mud flats and shallow water to forage on a variety of insects, crustaceans, and small fish. Additional impediments to recovery include predation by raptors and mammals, particularly when forced out of marsh habitat by floods, in addition to low genetic diversity which makes this subspecies particularly susceptible to localized environmental changes and extirpation. Multiple observations of light-footed Ridgway's rail are reported since 2012 by Sea and Sage Audubon and biologist Barry Nerhus Jr.. Observations include nesting pairs, males advertising for a mate, and nests. Suitable

habitat exists in the wetlands in the Middle Marsh, Lower Marsh, and ponds. The general avian surveys conducted as a part of the applicant's biological report were not protocol-level for rail, so it is unsurprising that this cryptic bird was not detected at that time. As rails may occur throughout the project impact footprint, avoidance and minimization measures are required for this species for the duration of project activities.

Least Bell's Vireo

Least Bell's vireo (*Vireo bellii pusillus)* is a state- and federally-endangered songbird. Their rarity is primarily caused by the extensive degradation and loss of riparian areas where vireos breed and forage and has reduced the current range of this subspecies to Southern California. Least Bell's vireo was historically abundant across much of the state, including the Central Valley, Sierra and Coast foothills, and Mojave Desert. Brood parasitism by the brown-headed cowbird (*Molothrus ater*) is another primary impediment to the recovery of least Bell's vireo, and this species has also been sighted in the Reserve.

Vireos are typically present in the Reserve during the general avian breeding season (February 15 – September 15) and consistently nests in the woody wetland habitat there according to records from Sea and Sage Audubon. Suitable habitats for vireo in the Reserve's Coastal Zone include mulefat thickets and Goodding's willow riparian forest and woodland. While the project impacts in the Coastal Zone avoids Goodding's willow riparian forest and woodland, the swale proposed for the Lower Marsh will convert 0.21 acres of mulefat thickets to shallow open water. Mitigation is proposed for this conversion as it will impact nesting and foraging habitat available to this listed species. The mitigation will also support other migratory, woody riparian-dependent species sighted in the reserve that are also declining, such as yellow-breasted chat (*Icteria virens*).

Coastal California gnatcatcher

Coastal California gnatcatcher (*Polioptila californica californica*) is a federally-threatened resident songbird that depends on coastal sage habitat throughout its life cycle. Their rarity is primarily due to the loss of sage scrub habitat to development. In the Reserve, coastal California gnatcatchers are found in the California sagebrush scrub vegetation community that lines the outer boundaries of the ponds and marshes within the Coastal Zone. The survey completed for the biological report noted a single gnatcatcher singing in mulefat thickets in the Lower Marsh in October 2020 – an atypical location for this species, but not unusual dispersal behavior after the breeding season. The Commission's ecologist concurs with the applicant's biological report that impacts to mulefat thickets from swale creation in the Lower Marsh will not impact coastal California gnatcatchers. However, swale creation in the Lower Marsh may encroach on California Sagebrush scrub near San Diego Creek. Avoidance and minimization measures for gnatcatchers are included below and will be conducted during project activities.

Burrowing owl

Burrowing owl (*Athene cunicularia*) are considered special status animals due to their rapid population decline throughout California and within the Coastal Zone. Burrowing owls are the only owl species that nests and roosts underground and is reliant on other animals, like California ground squirrels, to create and vacate burrows for them. Burrowing owls may live in a range of open habitat types, such as grasslands, prairies, agricultural lands, or other artificial landscapes depending on burrow and foraging availability. Sea and Sage Audubon report observing burrowing owls in the Reserve in 2011 and 2015, while the biological report includes observations of a single burrowing owl using burrows on berms lining the ponds in October 2020. The observation date is in the owl's non-breeding season, and so the observed owl is likely a migrant. As the berms will be repaired and elevated as a part of this project, avoidance and minimization measures for overwintering burrowing owls are required.

White-tailed kite and other raptors

White-tailed kite (*Elanus leucurus*) is a California Fully Protected species with declining population counts in Orange County. Kites nest in the upper canopy of trees and forage in a variety of open habitats, including the wetlands found in the Reserve. The primary threat to kites is habitat loss of nesting trees and open areas to development. As smaller raptors, they may be depredated by large hawks and owls. Kites are a regular occurrence in the Reserve since Sea and Sage Audubon started monitoring birds in the Reserve in 2011. UCI is currently developing a Campus Management Plan for the species. Biologists affiliated with this project have also monitored white-tailed kite habitat use in the Reserve since 2019 (Julie Coffey, pers. comms. 27 May 2024). Their study concurs with the biological report that kites have not been observed using the Reserve for nesting. The biologists state this is because riparian willows on site do not provide enough cover at the beginning of the breeding season compared to eucalyptus trees elsewhere on campus.

The Commission typically affords nesting raptors protection during construction activities consistent with policies in the federal Migratory Bird Treaty Act. The Middle and Lower Marsh areas provide considerable open habitat for hunting raptors. Raptors observed on site by Sea and Sage Audubon include peregrine falcon (*Falco peregrinus anatum*), bald eagle (*Haliaeetus leucocephalus*), Northern harrier (*Circus hudsonius*), sharp-shinned hawk (*Accipter striatus*), Cooper's hawk (*Accipter cooperii*), red-shouldered hawk (*Buteo lineatus*), red-tailed hawk (*Buteo jamaicensis*), American kestrel (*Falco sparverius*), merlin (*Falco columbarius*), and osprey (*Pandion haliaetus*). These records do not describe whether raptors are nesting in the Reserve or using the marshes for foraging. While many raptor species build nests in trees or other elevated manmade structures, others nest on the ground, including Northern harriers. As a result, project activities that occur within 500 feet of nesting raptors must apply appropriate avoidance and minimization measures described below.

Willow flycatcher

Southwestern willow flycatcher (*Empidonax traillii extimus*; "SWFL") is a federally and state-listed endangered subspecies of willow flycatcher (*Empidonax traillii*), which is a state-listed species. SWFL are migratory insectivorous songbirds that require dense riparian habitat near saturated soil or slow-moving, open water for breeding. The decline in riparian habitat throughout their range is responsible for their rarity. Subspecies of willow flycatcher are notoriously difficult to distinguish in the field. Protocol-level surveys are generally required to confirm identification to subspecies.

According to protocol-level surveys for this subspecies, single occurrences of willow flycatcher early in the breeding season are not sufficient to consider that observation an occurrence of SWFL. One willow flycatcher was observed by Sea and Sage Audubon in June 2017 and five willow flycatchers were detected in June 2020. As additional willow flycatchers were not observed in either year, they are considered migrant subspecies. The biological report indicates suitable habitat for SWFL on site includes Goodding's riparian willow forest and woodland. Although mulefat thickets are generally considered dense riparian habitat and may be used occasionally by SWFL, SWFL were not detected in habitats dominated by mulefat, such as mulefat thickets, based on a recent study of the subspecies in San Diego County (Howell and Kus 2022, https://doi.org/10.3133/dr1158). No occurrences of this subspecies are available on BIOS within the Reserve. Although this species was not detected and its suitable habitat will not be impacted by project activities, avoidance and minimization measures that apply to other listed avian species will also apply for willow flycatcher.

Project Benefits

The applicants plan to manage water storage and flow capabilities in the Marsh Reserve through the proposed swales, gates, culverts, and improved berms of this project. The proposed final vegetation conditions after project activities are complete are shown in **Exhibit 4**. The biological outcomes of this restoration will considerably improve the vegetation communities and therefore enhance the habitats for wildlife that reside there.

The ability to control water levels throughout the Marsh Reserve will help maintain the wetland vegetation communities that are already present in the Marsh Reserve. For example, the swales provide a manageable and consistent place to store low levels (~6 inches or so) of water throughout the Middle and Lower Marshes. The placement of open water swales along marsh habitat is expected to provide more reliable foraging areas for aquatic-foraging species, like western pond turtles and dabbling ducks. Rails also use the edges of open water for foraging and take cover and nest in neighboring bulrush vegetation. The swales and ponds intentionally have a low volume to edge ratio, which provides greater access to water resources for a variety of wildlife. Further, the concentration of water in the swales reduces evaporation of that water compared to current conditions, where water may be spread thinly across large marsh areas.

Swale construction results in water remaining in the marsh for longer periods of time. This creates refugia for western pond turtles and avian species, potentially including

Southwestern willow flycatcher, that may depend on more consistent water and saturation in the marshes. With the ability to drain marshes and ponds with the swales, gates, and culverts, some areas of the marsh will have reduced capacity for flooding. This will improve habitat for small mammals that use the marsh as well as the numerous raptors that hunt them. Additionally, improved water management is expected to prevent non-native upland encroachment into and across the experimental ponds, which is currently facilitated by low water levels. Some of the pond edges and berms share similar elevations, which limits the ability to fill some ponds to capacity without also flooding the berm. The berm improvements will allow for greater water storage, maintenance of access throughout the experimental pond system, and, in conjunction with the system of swales and culverts which bring water to ponds in dry years, reduce the probability of invasion by non-native plant species like tamarisk (*Tamarix* spp.) during droughts. Providing more consistent shallow open water habitat in the ponds will also provide a range of foraging habitats for the shorebirds and waterfowl that depend on these areas during migration. Additional information on the ecological goals and benefits of this restoration are provided in the applicant's Restoration Plan.

Development within a Wetland

Section 30233 governs projects that result in dredging and filling of wetlands, and provides that these activities in wetlands may occur if a three-part test is satisfied: 1) the dredging and fill is for a use designated in the statute to be an allowable use, 2) there are no feasible less environmentally damaging alternatives, and 3) feasible mitigation measures have been provided to minimize adverse environmental effects.

The vegetation mapping information submitted by the applicant indicates that there are 94.79 acres of jurisdictional wetlands in the Marsh Reserve's Coastal Zone. As discussed above, approximately 4,470 cy of soil will be excavated to create a 0.52 acre swale in the Middle Marsh, and a 0.59 acre swale in the Lower Marsh. The swales will allow for water to flow with gravity at a 5:1 slope between the upper and lower end points of the swale. All excavated material from swales will be transported for use as fill on pond roads. Berm fill will occur after the swales are excavated, using the material removed from the swales to fill low points within and increase the height of existing berms in an amount not to exceed 8 inches. Thus, the project will result in dredging and filling of wetlands and must comply with Section 30233.

As detailed below, the project does meet the list of limited approvable projects for fill of wetlands under section 30233(a)(6) and has been designed to be the least environmentally damaging alternative and includes measures to minimize adverse environmental effects.

1. Allowable Use

Section 30233(a)(6) of the Coastal Act provides that the filling of wetlands is permitted for restoration purposes. The project is a restoration project in that it will ensure continued viability of wetland communities under extreme drought and flood scenarios and maintain a diversity of wetland habitat types. Wetland habitat that has diminished

over time with drying conditions include open water aquatic habitat, saltmarsh bulrush marsh and California bulrush marsh. By connecting lower elevation areas with pools and a pump site, the applicants are able to deliver water to pond habitats later in the season when water levels are typically low, or in drought winters when overall water levels are lower. Additionally, the swales will maintain open water aquatic habitat and improve access for wildlife to all areas of the Middle Marsh by breaking up dense cattails that have encroached on open water habitat over time. The proposed project includes some fill to achieve habitat restoration, which is allowable pursuant to Section 30233(a)(6). Therefore, the proposed development is consistent with Section 30233 of the Coastal Act with regard to uses which include dredging and fill within wetlands.

2. Alternatives Analysis

For projects involving diking, dredging, and filling, the Commission must ensure that the proposed project has no feasible less environmentally damaging alternative consistent with Section 30233 of the Coastal Act. The applicant considered the following alternatives and concluded there was no feasible less environmentally damaging alternative to the proposed project.

Alternative 1: No Project.

The applicant could opt to leave the Marsh Reserve as is and not install infrastructure for improved management. This would result in the area being subject to drying out due to a lack of water management and availability. The applicant decided against this alternative as it would result in an “unacceptable level of risk to threatened species like Ridgway's rail (endangered) and western pond turtle (candidate for listing), both of which rely heavily on the Marsh Reserve as their core population in the county.” Further, water availability has steadily declined over time due to prolonged dry/drought seasons as a result of climate change and increased demands for water from San Diego Creek watershed being diverted for used for neighboring areas. The applicant also stated that “it has become difficult to maintain water levels within the Marsh Reserve using the current antiquated infrastructure.” The “no project” alternative would leave the Marsh Reserve vulnerable to drying out resulting in decreased habitat quality. Further, not addressing water management would impact the plethora of species that rely on the area for habitat. Accordingly, the applicant concluded that this would not be a less environmentally damaging alternative to the proposed project.

Alternative 2: Reduced Swale Size and Less Impactful Locations.
During the project design phase, the applicant considered alternative depths and locations for the proposed swales. Under this alternative, the current swales would be designed to be narrower and shallower than previous project iterations with the proposed depth and location being the least impactful. Additionally, the swales would be proposed at strategic locations throughout the marsh to minimize disturbance to sensitive habitats to the maximum extent feasible while still providing water management. Limiting swale excavation to just the Middle Marsh was also considered. However, this alternative would limit the ability to drain the Middle Marsh in the event of

an extreme wet year and could potentially lead to greater habitat impacts such as over inundation and drowning of mulefat in the Lower Marsh.

Alternative 3: No Swale Excavation.
The applicant considered an alternative with no swales to avoid impacts from excavation and having to remove native vegetation, but determined that this alternative would not allow for the provision of appropriate habitat in dry years and would limit the ability to retain water that can be conveyed to nearby ponds without significantly greater impact than the proposed swales. Accordingly, the applicant concluded that this would not be a less environmentally damaging alternative to the proposed project.

Alternative 4: No Herbicide Use.
The applicant considered an alternative which would not use herbicide to treat the vegetation in the excavated swales and the raised berms. Without herbicide use, the applicant could opt to only use manual and mechanical means of removal. This would not address resprouting cattails and reeds and could potentially lead to cattails and reeds reestablishing in the area which would require additional mowing to remove vegetation prior to swale excavation. Mowing alone would not be sufficient to address vegetation removal required for the subsequent project components. Accordingly, the applicant concluded that this would not be a less environmentally damaging alternative to the proposed project.

Alternative 5: Proposed Project

The proposed project includes the excavation of two narrow, relatively shallow swales at strategic locations within the Middle Marsh and Lower Marsh to minimize disturbance to sensitive habitats while still providing the improvements to water conveyance that align with the overall goal of the climate adaptation project. The other alternatives do not provide refugia habitat in dry years and get water to the pump in order to fill the ponds without significantly greater impact than the proposed swales. Alternative 5 includes narrowed and repositioned road fill, swales, and access routes to reduce the project footprint as much as possible. Almost all other alternatives to improve drainage and circulation of the marsh would result in greater impacts to sensitive habitats if the swales were moved or were deeper or wider than needed.

For the foregoing reasons, Alternative 5, the proposed project, is the least environmentally damaging feasible alternative for the restoration, because it improves the quantity, quality, and complexity of aquatic and riparian habitats and improves connectivity among the ponds to various degrees, and is the most parsimonious design for achieving the applicants climate adaptation goals while minimizing near-term impacts to sensitive habitats.

Project Impacts

The proposed project includes water conveyance and habitat improvements which requires the conversion of some wetland vegetation alliances to other vegetation alliances. These are defined as permanent impacts in Table 1 below and mapped in

Exhibit 3. In total, the project is converting a total of 1.11 acres across 6 wetland vegetation alliances to open water swales. This conversion represents just over 1% of the total wetland acreage in the Reserve's Coastal Zone. No compensatory mitigation is required for the majority of permanent impacts as the project's primary aims are habitat restoration under Section 30233 of the Coastal Act. Additionally, this conversion helps protect over 14 acres of currently existing wetland habitat by improving water conveyance to the pond areas (**Exhibit 4**). The project includes the active restoration of 1.11 acres of shallow open water attributed to swale creation and 0.21 acres of mitigation for impacts to mulefat thickets. Active restoration includes a reduction in the amount of mixed herbaceous wetland at the site as it is being converted to mulefat thickets through required mitigation. This conversion is considered beneficial for the Marsh Reserve as mixed herbaceous wetland primarily consists of non-native, weedy species. The table also provides a comparison of current wetland acreage to anticipated wetland acreage after the project is complete, therefore meeting the no net loss criteria for wetland impacts. A slight increase in the amount of wetland habitat is expected due to the remainder of the mulefat mitigation as conversion from currently disturbed habitat. Temporary impacts are expected for access roads for the tractor and excavation equipment and staging areas. Vegetation in these areas is expected to return within one year of impact. The applicant is required to report on the success of the restoration and the required mitigation in annual reports as a part of **Special Condition 9**.

Table 1. Acreages of project impacts, restoration, and maintenance in the wetland and riparian vegetation communities within the Reserve's Coastal Zone.

Wetland or riparian vegetation community	Current Acreage in Coastal Zone	Temporary impacts (ac)[1]	Permanent impacts (ac)[2]	Active restoration (ac)[3]	Final acreage in Coastal Zone[4]	Acreage maintained in Coastal Zone via project goals[5]
California Bulrush Marsh	23.70	0.20	0.37	--	23.33	8.50
Salt Marsh Bulrush Marsh	11.14	0.14	0.13	--	11.01	5.44
Cattail Marsh	20.10	0.04	0.26	--	19.84	0.32
Mulefat Thicket	10.50	0.06	0.21	0.21	10.50	--
Pickleweed Mat	0.47	0.02	--	--	0.47	--
Western Sea-purslane Marsh	3.60	0.04	--	--	3.60	--

Mixed Herbaceous Wetland	7.88	0.06	0.03	(0.21)	7.64	--
Swamp Pricklegrass Mats	1.90	0.10	0.11	--	1.79	--
Goodding's Willow Riparian Forest	6.70	--	--	--	6.70	--
Open Water (shallow wetland)	8.80	--	--	1.11	9.91	--
Acreage sums	94.79[6]	0.66	1.18	1.18	94.79[6]	14.26

1. Activities causing temporary impacts include mowing, temporary access routes, and entering habitat to repair and elevate berms. These areas are expected to revegetate within a year of impact. Temporary staging is occurring in non-sensitive upland habitat and is not included in this table.
2. Activities causing permanent impacts include the cutting of swales and culvert improvements for habitat diversification and water conveyance.
3. Active restoration includes the converted wetland habitat to open water as a project goal and the conversion of 0.21 acres of mixed herbaceous wetland to Mulefat thickets as mitigation for swale creation in the Lower Marsh.
4. Final habitat acreages is after restoration is complete and areas of temporary impacts have regrown. This is calculated as the sum of current acreage and active restoration minus permanent impacts within each row.
5. A primary goal of the project is to create interannual consistency in water availability to maintain the Reserve's wetland habitats as variation in precipitation increases during climate change. By doing so, the project maintains the current wetlands, specifically shallow and deep-water pond habitats, and open water adjacent bulrush marsh in place for future years. While in the Reserve and in the Coastal Zone, the habitat areas in this column are not within the proposed project footprint but will be directly positively impacted by project activities in the delivery of water to the wetlands.
6. These figures indicate no net loss of wetlands due to project activities.

3. Mitigation for Impacts to Mulefat Thickets

In addition to requiring that diking, dredging, and filling in coastal wetlands and waters only be permitted if found to be an allowable use and the least environmentally damaging feasible alternative, Section 30233 further requires that feasible mitigation measures be provided to minimize adverse environmental effects. The following findings will describe the anticipated project impacts, the applicant's proposed measures to mitigate for the impacts and provide protections to special status species, and discuss Commission-imposed conditions to ensure that adverse environmental impacts to wetlands and special species are minimized to the maximum extent feasible.

Dredging for 1.11 acres of swale excavation (dredging) will take place within the 94.79 acres of wetland habitats in the Marsh Reserve's Coastal Zone (Table 1). The excavated material will be used to raise the elevations of berms and dirt roads and will

occur entirely in already existing berms, which are disturbed habitat (Table 1). While the project has been designed and conditioned to avoid permanent impacts to jurisdictional wetlands to the greatest extent possible, the project proposes to address ongoing concerns related to adaptively managing water availability for the Marsh Reserve. Specifically, the increase in open water habitat and greater control of water management will help sustain the wetland communities on site and is therefore a net benefit for the Marsh Reserve's habitats.

The removal of 0.21 acres mulefat thickets during the excavation of the swale in the Lower Marsh will be maintained every 1-3 years to prevent overgrowth into the swale and allow the Lower Marsh to drain to San Diego Creek. The conversion of mulefat to shallow open water and its maintenance results in loss of nesting habitat for the state and federally-endangered least Bell's vireo. Vireos require thick woody vegetation like mature mulefat thickets for nesting. Vireos feed on insects that live on trees and bushes and occasionally while hovering in the air. While restoration of open water in the Lower Marsh will likely support aquatic insects that will potentially benefit least Bell's vireo foraging habitat, their status as a listed species requires consideration of their breeding and preferred foraging habitat in vegetation as well. Therefore, staff recommends the impacted mulefat thickets be mitigated at a 1:1 ratio elsewhere in the Marsh Reserve.

To this end, the applicant has submitted a Restoration Plan, which includes the following goals to retain and improve the ecological integrity of the Marsh Reserve through project activities:

1. Ensure continued viability of wetland communities under extreme drought and flood scenarios.
2. Maintain habitat heterogeneity among wetland communities by increasing relative cover of open water aquatic habitat, semi-permanent marsh, and permanent ponds to serve as refugia for wildlife species threatened by the impacts of climate change.
3. Avoid type conversion and invasion by non-native species in ponds by maintaining water levels during periods of low to moderate capacity in larger marsh areas.
4. Mitigate displacement of 0.21 acres of mulefat thickets in swales at a 1:1 ratio in appropriate habitats within the marsh reserve.
5. Maintain opportunities for education, ecological research, community wellness and engagement in line with the mission of the University of California Natural Reserve System (UCNRS) and University of California, Irvine Nature (UCI Nature).

These restoration goals are consistent with the restoration purposes and resource-dependent nature study uses in wetlands per Section 30233(a) of the Coastal Act. Dredging and soil disposals are timed to prevent repeated incursion in the marsh areas of the Reserve and include the reuse of excavated soils to repair and elevate berms, consistent with Section 30233(b). The project also maintains and restores the biological

productivity and functional capacity of wetlands through the water conveyance project activities, consistent with Sections 30231 and 30233(c). **Special Condition 7** requires the applicant to provide annual reports on progress towards project goals after the project activities and mitigation are complete over 5 years.

The applicant's submitted Restoration Plan includes the proposed mitigation site incorporating the entire 0.21 acres of mulefat thickets in the Reserve's Coastal Zone in two locations: the northwest corner of Pond 6 (approximately 0.12 ac, "Pond 6 site") and lining the western side of the berm between the Lower Marsh and Pond 6 (0.09 ac; "berm-adjacent site"). The mitigation sites are also mapped in **Exhibits 3 & 4**. The mitigation sites were selected on the basis of where mulefat may thrive in the Marsh Reserve, where native vegetation is not already dominant, and where mulefat may not be replaced by bulrush vegetation. The vegetation community being replaced by mulefat mitigation northwest of Pond 6 is entirely mixed herbaceous wetland (approximately 0.12 acres). **Exhibit 2** indicates the Pond 6 site has salt marsh bulrush marsh, a G4S3 vegetation community, instead of mixed herbaceous wetland. However, this area was last mapped in 2020 and has since converted to mixed herbaceous wetland with a variety of non-native species on site. This is one of the habitat conversions that increased water management and that the proposed project is designed to avoid, but this conversion is already occurring in the ponds in the Reserve.

A photo of the current vegetation in the northwest corner of Pond 6 is provided in **Exhibit 5**. To confirm the current vegetation at the proposed mitigation site, the Commission's ecologist and district supervisor performed a site visit at the Reserve on May 29, 2024. There, the ecologist found the vegetation at the proposed Pond 6 site consisted primarily of bristly ox-tongue (*Picris echioides*), non-native grasses, including bromes (*Bromus* spp.) and rabbitfoot grass (*Polypogon monspeliensis*), and curly dock (*Rumex crispus),* with a significant portion of saturated bare ground. A few salt marsh bulrush individuals were interspersed among the non-native vegetation. The vegetation alliance membership rules for salt marsh bulrush marsh state that the salt marsh bulrush (*Bolboschoenus maritimus*) must have greater than 50% relative cover in the herbaceous layer, or both salt marsh bulrush and sturdy bulrush (*Bolboschoenus robustus*) have greater than 50% cover in the herbaceous layer, or both salt marsh bulrush and sturdy bulrush have greater than 30% relative cover with pickleweed (*Sarcocornia pacifica*). The vegetation at the Pond 6 site no longer meets any of these criteria. The applicant will be required to report on the status of the mulefat mitigation to the Commission annually for five years as described in the Restoration Plan and pursuant to **Special Condition 7**.

Minimization Strategies for Special Status Species

As the Marsh Reserve hosts several resident and migratory special status species, there is no time period over the annual cycle that entirely excludes the potential presence of special status species. The timing of project activities is provided in Table 2

of the Restoration Plan. To summarize, earth-moving activities, including mowing, culvert installation, swale excavation, and berm fill are timed in the fall to avoid impacts to wildlife during the breeding season. The targeted use of aquatic-safe herbicides is proposed in the spring and summer for emergent vegetation in the swale after mowing but prior to excavation as well as the disturbed berm areas prior to repair and elevation. Proposed herbicide use is described in the Restoration Plan and will be permitted pursuant to **Special Condition 5** which requires the submission and approval of an Integrated Pest Management plan. A Biological Monitor who must be approved by the US Fish and Wildlife Service (USFWS) Carlsbad Office will be on site during all vegetation clearing and construction activities to observe construction activities and any potential impacts to special status species and report these observations to the USFWS Carlsbad Office. Several conservation measures to reduce potential impacts to special status species are proposed by the applicant in the Restoration Plan. These measures, as well as conditions required by the Commission's ecologist, are detailed below.

a. Western pond turtle

Western pond turtles are present year-round in the Marsh Reserve. Vegetation clearing and construction activities shall occur in areas that have dried down during the typical management cycles of inundation and dry down periods employed at the Reserve. The seasonally dry period in the Marsh Reserve is also outside the peak period of western pond turtle activity (April to August), with the exception of areas drying down earlier by late June or early July. Otherwise, measures for monitoring and avoidance of impacts will be followed in construction areas as they relate to the upland life cycle phase of the western pond turtle.

To minimize the potential for western pond turtles to be harmed during construction, a biologist familiar with the ecology, behavior, and movement patterns of the pond turtle within the Reserve shall prepare and implement a Western Pond Turtle Construction Monitoring Plan (WPTCMP). If work during periods of inundation cannot be avoided, aquatic methods to monitor, trap and relocate turtles will be employed as summarized in the WPTCMP. **Special Condition 6** requires receipt of the draft and approved WPTCMP 30 days prior to the start of construction to allow sufficient time for pre-construction surveys and associated mapping needed to protect western pond turtle. It also requires the WPTCMP substantially conform with the proposed pond turtle-specific mitigation and monitoring measure, such as components of the WPTCMP and best practices to avoid impacts to western pond turtle, as outlined in the applicant's Restoration Plan.

b. State and federally-listed avian species

Two special species of songbirds and one species of rail are likely to use areas within the project impact footprint. The applicant provided Conservation Measure 3 in their Restoration Plan to avoid and mitigate potential impacts to these species – light-footed Ridgway's rail, least Bell's vireo, and coastal California gnatcatcher. **Special Condition 3** requires avoidance and minimization measures to reduce impacts to these species as well as any other state or federally-listed avian species nesting or present within 500

feet of vegetation clearing or construction activities. **Special Condition 3** will substantially conform to Conservation Measure 3 provided in the applicant's Restoration Plan, as provided below:

A Carlsbad Fish and Wildlife Service (CFWO)-approved biologist (Biological Monitor) will be on site: 1) during vegetation clearing/grubbing, and 2) weekly during construction within 500 feet of habitat for the rail, gnatcatcher, and vireo to ensure overall compliance with all conservation measures. The applicant will submit the biologist's name, address, telephone number, and work schedule on the project to the CFWO and Corps at least 7 working days prior to initiating project impacts. The contract of the Biological Monitor will allow direct communication with the CFWO and Corps at any time regarding the proposed project. The Biological Monitor will be provided with a copy of this consultation. The Biological Monitor will be available during pre-construction and construction phases to review grading plans, address protection of sensitive biological resources, monitor ongoing work, and maintain communications with the lead contractor/project manager on site to ensure that issues relating to biological resources are appropriately and lawfully managed. The Biological Monitor will perform the following duties:

a. Train all contractors and construction personnel on the biological resources associated with the project and ensure that training is implemented by construction personnel. At a minimum, training will include: 1) the purpose for resource protection; 2) a description of the vireo, rail, and gnatcatcher and their habitats within the San Joaquin Marsh; 3) the construction limits; 4) the CMs that should be implemented during project construction; and 5) the general provisions of the Act, the need to adhere to the provisions of the Act, and the penalties associated with non-compliance with the Act.

b. Perform a minimum of three focused surveys, on separate days, to determine the presence of vireo, rail, and gnatcatcher nest building activities, egg incubation activities, or brood rearing activities within 500 feet of project activities proposed during the nesting season. The surveys will begin a maximum of 7 days prior to the initiation of project activities and one survey will be conducted the day immediately prior to the initiation of work. Additional surveys will be done once a week during project activities in the nesting season. These additional surveys may be suspended as approved by the CFWO. The Corps/applicant will notify the CFWO at least 7 days prior to the initiation of surveys and within 24 hours of locating any vireos, rails, or gnatcatchers.

c. If an active vireo, rail, or gnatcatcher nest is found within 500 feet of project activities, contact the CFWO to discuss: 1) the best approach to avoid/minimize impacts to nesting birds (e.g., sound walls, noise monitoring), and 2) a nest monitoring program acceptable to the CFWO. Nest monitoring will occur according to a schedule approved by the CFWO. The Biological Monitor will determine whether bird activity is being disrupted. If the Biological Monitor determines that bird activity is being disrupted, the Corps/applicant will coordinate with the CFWO to review the avoidance/minimization approach. Nest monitoring will continue until fledglings have dispersed, as approved by the CFWO. If nest monitoring determines that nesting birds are still being disrupted, the Corps will reinitiate consultation with the CFWO. Nest monitoring will continue until

fledglings have dispersed, or the nest has been determined to have failed, as approved by the CFWO.

d. For vegetation clearing/grubbing outside the rail and gnatcatcher breeding season (September 16 through February 14), perform a minimum of three focused preconstruction surveys, on separate days to determine the presence of rails and gnatcatchers in the project impact footprint. Surveys will begin a maximum of 30 days prior to performing vegetation clearing/grubbing, and one survey will be conducted the day immediately prior to the initiation of vegetation clearing. If any rails or gnatcatchers are found in the project impact footprint, the Biological Monitor will direct construction personnel to begin vegetation clearing/grubbing in an area away from the rails/gnatcatchers. It will be the responsibility of the Biological Monitor to ensure that rails/gnatcatchers will not be injured or killed by vegetation clearing/grubbing. The Biological Monitor will also record the number and locations of rails/gnatcatchers displaced by vegetation clearing/grubbing. The Corps/applicant will notify the CFWO at least 7 days prior to project activities to allow the CFWO to coordinate with the Biological Monitor on potential bird flushing activities.

e. Before each workday begins, check to see if rails have entered the project site. The Corps/applicant will notify the CFWO within 24 hours of detecting any rails in the project site. These surveys may be conducted by the lead project manager on site as approved by the CFWO.

f. If any rails are found within the project site, direct construction personnel to begin in an area away from the rails. It will be the responsibility of the Biological Monitor to ensure that rails will not be injured or killed by project construction and to record the number and location of rails disturbed by project construction.

g. Request that project activities are halted, if necessary, and confer with the CFWO to ensure the proper implementation of species and habitat protection measures. The Biological Monitor will report any non-compliance issue to the CDFW and Corps within 24 hours of its occurrence.

h. Oversee installation of and inspect erosion control measures a minimum of once per week to ensure that any breaks in erosion control measures are repaired immediately.

i. Monitor the project site immediately prior to and during construction to identify the presence of invasive weeds and recommend measures to avoid their inadvertent spread in association with the project. Such measures may include inspection and cleaning of construction equipment and use of eradication strategies. All heavy equipment will be washed and cleaned of debris prior to entering sensitive habitat areas to minimize the spread of invasive weeds.

j. Submit a final report to the CFWO, via the Corps/applicant, within 60 days of project construction that includes: photographs and other relevant information documenting that authorized impacts were not exceeded and that general compliance

with all conservation measures was achieved. The report will also specify the numbers and locations of vireos, rails, and gnatcatchers; their behaviors (especially in relation to construction activities); measures employed to avoid and minimize impacts to these species; and the suspected outcome of all nests within 500 feet of construction.

c. Burrowing owl

Burrowing owls have been sighted as overwintering migrants that use existing burrows in the disturbed berms. Overwintering burrowing owls may be present during the period of berm construction, September 15-December 31. The Commission imposes **Special Condition 7,** which requires overwintering surveys of burrowing owl prior to any construction activities on the berms and consultation with CDFW if overwintering burrowing owls are detected.

d. White-tailed kite and other raptors

White-tailed kites and other raptors visit the Reserve to forage, and while suitable breeding habitat exists in the Reserve, no nesting activity has been recorded in the Reserve. To protect raptors that may breed in the Reserve, the Commission imposes **Special Condition 8** which requires a pre-construction survey of raptor nests within 500 feet of project activities during the breeding season (January 1 – June 30) and the cessation of vegetation clearing or construction activities when white-tailed kites and other raptors are sighted within 500 feet of project activities at any point throughout the year.

e. Conclusion

Despite the alteration from its original state, the Marsh Reserve consists of a wide range of wetland and upland habitat types. Given its status as a reserve with multiple sensitive communities, many special status wildlife species reside or visit the Marsh Reserve. These species require protection measures prior to and during project activities. Project activities are expected to convert just over 1% of currently existing wetland habitat to shallow open water, another ecologically valuable wetland habitat type in the Reserve. All project components are related to the management of water conveyance for long-term wetland habitat viability, including the protection of over 14 acres of wetland in the manmade ponds. The project results in no net loss of wetland habitat in the Reserve. Permanent impacts to 0.21 acres of mulefat thickets that serves as habitat for least Bell's vireo, a federally and state-listed endangered species, will be mitigated on-site in areas of non-native wetland habitat and regularly maintained so as to not encroach on the open water areas. This requirement concurs with required mitigation described during CEQA analysis for a prior version of the project.

Herbicide Use

The applicant's Restoration Plan details the reasoning supporting the use of herbicides to achieve project goals. To summarize, herbicides will be used in the swales as well as the berm areas. Use in the swales will occur after mowing to prevent regrowth in the

swales prior to excavation. This reduces the frequency of human disturbance, such as mowing, in the marsh and the necessary amount of herbicide to be effective. Manual removal of the regrowth in either swale is not feasible as over 1 acre of wetland vegetation will need to be removed. Additionally, mowing and excavating in the same year to avoid the use of herbicides is not feasible. This would require the applicant to find somewhere to either haul or place and store the woody and cattail vegetation at high cost. This also would not allow for recycling of the nutrients from mowed vegetation back into the marsh system in the year between mowing and excavation. The berm areas require vegetation removal in order to adequately repair and elevate them (**Exhibit 5**). Like the swales, manual removal of weeds along the berm areas is not feasible given the total length of berms that require weed removal prior to construction.

The applicant provided the following list of herbicides it may use afterCommission staff's consultation with Dr. Krista Hoffman, Pesticide Management Coordinator with the CDFW Lands program (pers. comm. 23 May 2024): Polaris AC (United States Environmental Protection Agency registration #228-534); Habitat (#241-426); Clearcast (#241-437); Vastlan (#62719-687); and Roundup Custom (#524-343) or their non-commercial equivalents. Polaris AC, Habitat, and Clearcast may be applied in the swale while Vastlan and Roundup Custom are requested for the berm area. All of these herbicides are certified as aquatic-safe. While Roundup Custom contains glyphosate, the aquatic-safe formulation is considered safe and effective for use in terrestrial and aquatic applications when used with appropriate adjuvants like modified seed oils. A final list of herbicides will be prepared as a part of an Integrated Pest Management plan, described in **Special Condition 5** All herbicides will be aquatic-safe and used with appropriate adjuvants by trained and supervised individuals as specified in the Special Condition. The IPM must be approved by the Executive Director prior to the issuance of the permit.

Conclusion

The final policy "test" required under Sections 30231 and 30233 of the Coastal Act for projects involving diking, dredging, and/or filling of coastal wetlands is that any proposed dredging or filling in coastal wetlands must maintain, enhance and where feasible restore the biological productivity and functional capacity of the habitat. Section 30233(c) states that the diking, filling, or dredging of wetlands shall maintain or enhance the functional capacity of the wetland. Section 30231 states that the biological productivity of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of species of marine organisms and protect human health shall be maintained and, where feasible, restored. As proposed by the applicant and conditioned by the Commission, the project will not have significant adverse impacts on the water quality of any of the coastal waters around the project area and will ensure that the project construction will not adversely affect the biological productivity and functional capacity of coastal waters or wetlands. Furthermore, the project's stated purpose is to restore and enhance the biological productivity of coastal wetlands, and conditions of the permit will ensure that the site is monitored for achievement of these goals. Therefore, the Commission finds that the proposed

development, as conditioned, will maintain and enhance the functional capacity of the habitat, maintain and restore optimum populations of marine organisms, and protect human health consistent with the requirements of Sections 30231 and 30233.

WATER QUALITY

Section 30230 of the Coastal Act 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.

Section 30231 of the Coastal Act 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.

The Coastal Act requires that marine resources and biological productivity of wetlands be maintained and enhanced. The main goal of the proposed project is improving water management in the Marsh Reserve to adaptively manage water resources for long-term maintenance of wetland habitat. Water management is especially critical for maintaining the marsh during dry seasons and as climate change continues to impact weather patterns leading to prolonged drought and unpredictable wet seasons. Although the area is owned and managed by the UCNRS it serves as critical riparian habitat for a variety of species and is an import research area.

The applicant proposes to use an aquatic safe herbicide to treat resprouting vegetation prior to the excavation of the swale in the area. The herbicide will be used to target vegetation that is between 3-5 in. in height and is proposed for use a maximum of two times for the duration of the project. To preserve water quality and minimize the potential of herbicides to enter portions of the surrounding wetland habitat, **Special Condition 5** requires the applicant to submit an Integrated Pest Management Plan consistent with the staff recommendation. Therefore, the Commission finds that the proposed development, as conditioned, conforms to the Coastal Act Chapter 3 policies regarding water quality.

ARCHAEOLOGICAL, PALEONTOLOGICAL, AND TRIBAL CULTURAL RESOURCES

Section 30244 of the Coastal Act states:

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

The Commission recognizes that the entirety of the State's coastal zone was originally indigenous territory that continues to have cultural significance to Native American tribes. The Commission's Tribal Consultation Policy (adopted on August 8, 2018)[1] recognizes the importance of State efforts to protect Tribal Cultural Resources and improve communication and coordination with Tribes, and it sets out a tribal consultation process that is fully consistent with, and complementary to the nature of, the Commission's goals, policies (including Section 30244), and mission statement. Tribal Cultural Resources can be sites, features, cultural landscapes, sacred places, and objects with cultural value and can also qualify as archeological, paleontological, visual, biological, or other resources that the Commission is tasked with protecting pursuant to the Coastal Act.

Archaeological and Tribal Cultural Resources in Project Area

The California coastal zone has been home to native populations since time immemorial. The project site is located within the ancestral settlements of the Gabrielino (Tongva) peoples, and within an important tribal landscape, which are considered sacred to numerous tribes with territorial, ancestral, and/or cultural ties to the area. Ceremonial and cultural activities continue near this site to the present day.

As a part of this application (CDP No. 5-23-0532), the applicant provided a report: *UC NRS San Joaquin Marsh Reserve Water Conveyance and Drainage Improvement Project Cultural Resources Assessment* dated March, 2021 prepared for Moffatt & Nichol by Cogstone. Cogstone requested a California Historical Resource Inventory System (CHRIS) from the South Central Coastal Information Center (SCCIC) located on the campus of California State University, Fullerton. The results of the record search indicated that 15 cultural resources studies have been completed previously within the Area of Potential Effects (APE) and 141 additional cultural resource investigations have been completed previously within a one-mile radius of the APE. The records search determined previously recorded resources are located within the APE boundaries, including Native American burials. In addition, 40 other cultural resources are located within a one-mile radius of the APE. These include 28 prehistoric archaeological sites,

[1] https://documents.coastal.ca.gov/assets/env-justice/tribal-consultation/Adopted-Tribal-ConsultationPolicy.pdf

five multicomponent sites (both prehistoric and historic), five historic isolates, and five historic architectural resources.

Tribal Consultation

In accordance with the Commission's Tribal Consultation procedures, on May 2, 2024, via email, Commission staff initiated consultation with all representatives with known ties to this location listed on the California Native American Heritage Commission contact list. A representative of the Gabrielino Tongva Indians of California Tribal Council responded that they have no comment; no other responses were received.

Conclusion

Archaeological and cultural resources monitoring of ground disturbance by interested parties would mitigate the risk of potential impacts to cultural or archeological resources. Given the sensitivity of the general area, **Special Condition 10** requires the applicant to submit a Tribal Cultural Resource Treatment and Monitoring Plan prepared in consultation with appropriate Tribe(s) at least three months prior to commencement of any ground-disturbing activities and outlines monitoring requirements and the procedures the applicant must adhere to in the event archaeological resources or human remains are discovered on-site during the course of the project.

The site is believed to contain archeological resources because many tribal resources have been recorded in the larger vicinity, although no specific known resources are present in the project site. The proposed project involves ground disturbing activities by digging two 20 ft.-wide swales, approximately 1,100 ft. in length ranging from 6"-12". Thus, **Special Condition 10** is imposed to require the applicant to undertake development with mitigation measures to protect archaeological, including tribal, cultural resources.

PUBLIC ACCESS

Section 30210 of the Coastal Act states:

> In carrying out the requirement of Section 4 of Article X of the California Constitution, maximum access, which shall be conspicuously posted, and recreational opportunities shall be provided for all the people consistent with public safety needs and the need to protect public rights, rights of private property owners, and natural resource areas from overuse.
> (Amended by Ch. 1075, Stats. 1978.)

The Marsh Reserve is owned and managed by UCNRS. The area is not generally accessible to the public and is primarily accessed for research purposes. UCNRS has a permit system for individuals to apply to reserve access to the area for research, education, and teaching purposes. The area will not be accessible for research during the course of the proposed project. Additionally, the proposed project is not anticipated to impact surrounding publicly accessible areas. Given that the Marsh Reserve is not open to the public, access and recreational opportunities are not anticipated to be

impacted. Thus, the project is consistent with the public access and recreation policies of Chapter 3 of the Coastal Act.

LOCAL COASTAL PROGRAM

Section 30604 of the Coastal Act provides for the issuance of coastal development permits directly by the Commission in regions where the local government having jurisdiction does not have a certified local coastal program. The permit may only be issued if the Commission finds that the proposed development will not prejudice the ability of the local government to prepare a Local Coastal Program, which conforms with the Chapter 3 policies of the Coastal Act.

The project site is in the City of Irvine, which does have a certified Local Coastal Program, certified in 1982. However, the site is also located on land owned by the University of California, Irvine and excluded from Irvine's certified Local Coastal Program. The University of California, Irvine does not have a Long-Range Development Plan (LRDP) certified by the Commission. Therefore, the Commission is the permitting authority and the standard of review is the Chapter 3 policies of the Coastal Act.

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

Section 13096 Title 14 of the California Code of Regulations requires Commission approval of a coastal development permit application to be supported by a finding showing the application, as conditioned 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 a proposed development from being approved if there are feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse effect which the activity may have on the environment.

The University of California (UC), the lead CEQA agency, performed an Initial Study in May 2021, pursuant to CEQA. The UC concluded that a mitigated negative declaration was appropriate for the proposed project. The Initial Study and mitigated negative declaration indicate that the project could impact nesting birds, vegetation communities such as riparian and wetland habitat and could temporarily disrupt wildlife movement. The UC adopted mitigation measures to reduce the effects of the project below any level of significance. Conditions of approval of this permit also address the impacts to habitat and wildlife resources and, as conditioned, the project is consistent with the Coastal Act. As a responsible agency under CEQA, the Commission has determined that the proposed project, as conditioned, is consistent with the water quality policies, the public access and recreational opportunities policies, and the protection of the biological resources policies of the Coastal Act. As conditioned, there are no feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse impact which the activity may have on the environment. Therefore, the Commission finds that the proposed project can be found consistent with the requirements of the Coastal Act to conform to CEQA.

APPENDIX B – CULTURAL RESOURCES SIGNIFICANCE TESTING PLAN PROCEDURES

A. An applicant seeking to recommence construction following discovery of the cultural deposits shall submit a Significance Testing Plan for the review and approval of the Executive Director. The Significance Testing Plan shall identify the testing measures that will be undertaken to determine whether the cultural deposits are significant. The Significance Testing Plan shall be prepared by the project archaeologist(s), in consultation with the Native American monitor(s), and the Most Likely Descendent (MLD) when State Law mandates identification of a MLD. The Executive Director shall make a determination regarding the adequacy of the Significance Testing Plan within 10 working days of receipt. If the Executive Director does not make such a determination within the prescribed time, the plan shall be deemed approved and implementation may proceed.

   1. If the Executive Director approves the Significance Testing Plan and determines that the Significance Testing Plan's recommended testing measures are de minimis in nature and scope, the significance testing may commence after the Executive Director informs the permittee of that determination.

   2. If the Executive Director approves the Significance Testing Plan but determines that the changes therein are not de minimis, significance testing may not recommence until after an amendment to this permit is approved by the Commission.

   3. Once the measures identified in the significance testing plan are undertaken, the permittee shall submit the results of the testing to the Executive Director for review and approval. The results shall be accompanied by the project archeologist's recommendation as to whether the findings are significant. The project archeologist's recommendation shall be made in consultation with the Native American monitors and the MLD when State Law mandates identification of a MLD. The Executive Director shall make the determination as to whether the deposits are significant based on the information available to the Executive Director. If the deposits are found to be significant, the permittee shall prepare and submit to the Executive Director a supplementary Archeological Plan in accordance with subsection B of this appendix and all other relevant subsections. If the deposits are found to be not significant, then the permittee may recommence grading in accordance with any measures outlined in the significance testing program.

B. An applicant seeking to recommence construction following a determination by the Executive Director that the cultural deposits discovered are significant shall submit a supplementary Archaeological Plan for the review and approval of the Executive Director. The supplementary Archeological Plan shall be prepared by the project archaeologist(s), in consultation with the Native American monitor(s), the Most Likely Descendent (MLD) when State Law mandates identification of a MLD, as well as others identified in the special condition. The supplementary Archeological Plan shall identify proposed investigation and mitigation measures.

The range of investigation and mitigation measures considered shall not be constrained by the approved development plan. Mitigation measures considered may range from in-situ preservation to recovery and/or relocation. A good faith effort shall be made to avoid impacts to cultural resources through methods such as, but not limited to, project redesign, capping, and placing cultural resource areas in open space. In order to protect cultural resources, any further development may only be undertaken consistent with the provisions of the Supplementary Archaeological Plan.

1. If the Executive Director approves the Supplementary Archaeological Plan and determines that the Supplementary Archaeological Plan's recommended changes to the proposed development or mitigation measures are de minimis in nature and scope, construction may recommence after the Executive Director informs the permittee of that determination.
2. If the Executive Director approves the Supplementary Archaeological Plan but determines that the changes therein are not de minimis, construction may not recommence until after an amendment to this permit is approved by the Commission.

C. Prior to submittal to the Executive Director, all plans required to be submitted pursuant to this special condition, except the Significance Testing Plan, shall have received review and written comment by a peer review committee convened in accordance with current professional practice that shall include qualified archeologists and representatives of Native American groups with documented ancestral ties to the area. Names and qualifications of selected peer reviewers shall be submitted for review and approval by the Executive Director. The plans submitted to the Executive Director shall incorporate the recommendations of the peer review committee. Furthermore, upon completion of the peer review process, all plans shall be submitted to the California Office of Historic Preservation (OHP) and the NAHC for their review and an opportunity to comment. The plans submitted to the Executive Director shall incorporate the recommendations of the OHP and NAHC. If the OHP and/or NAHC do not respond within 30 days of their receipt of the plan, the requirement under this permit for that entities' review and comment shall expire, unless the Executive Director extends said deadline for good cause. All plans shall be submitted for the review and approval of the Executive Director.