Ms. Cashell Villa
U.S. Fish and Wildlife Service
Humboldt Bay National Wildlife Refuge
P.O. Box 576
Loleta, CA 95551
cashell_villa@fws.gov

October 6, 2023

RE: USFWS - Wadulh Lagoon Tidal Wetland Enhancement Project

Dear Ms. Villa,

On behalf of the of the owners, residents, and shellfish producers at Sea Horse Ranch LLC, located at 6210 Lanphere Road, Arcata, CA (APN 506-291-013), and the Ferreira & Son Dairy, we respectfully submit this letter to the U.S. Fish and Wildlife Service (USFWS) and the Humboldt Bay National Wildlife Refuge (HBNWR) with regard to the proposed Wadulh Lagoon Tidal Wetland Enhancement Project proposed for portions of APN 506-291-014 along Mad River Slough just south of the Lanphere Road bridge (see attached map).

We became aware of this project in September of 2023 and the USFWS and HBNWR hosted a meeting on the afternoon of October 2, 2023 at the residence of CJ and Carol Ralph. In attendance were USFWS representatives Conor Shea and Andrea Pickert, as well as, HBNWR Manager Cashell Villa. Neighborhood representatives present were: property owners CJ and Carol Ralph; property owners William, Kimberly and Edward Rich (also of Mad River Slough Shellfish Nursery), and property owner Darin Ferreira (also of Ferreira & Son Dairy). Shellfish producers at Sea Horse Ranch were also present and included Todd Van Herpe of Humboldt Bay Oyster Company and Scott and Grace Sterner of North Bay Shellfish. Several tenants of said properties were also present: Sue Hilton, Larry Levine, and David McVeigh.

The intent of this letter is to follow up and memorialize, in writing, the concerns and questions expressed at this first meeting. The adjacent property owners and shellfish business operators feel that we are considered stakeholders for the purposes of this project, as we have access concerns, property values to consider, and commercial operations occurring in locations that could be directly affected by the proposed undertaking. Ferreira Dairy also has the potential to be directly affected as the sole access road traverses immediately adjacent to the dairy facility. We expect that our comments, as stakeholders, will be differentiated from the general public and addressed directly, and not as thematic responses and potentially disregarded.

From information provided at the meeting, it is our understanding that this proposed project falls under the NOAA Programmatic Agreement for Coastal Restoration, and is being funded by the State Coastal Conservancy and the National Coastal Wetlands Conservation, with project implementation to begin late summer/early fall of 2024 tasked to the Humboldt County Resource Conservation District. The project is intended to produce intertidal wetland ecosystem values on the subject parcel by removing and changing portions of the historical tidal levy and allowing tide waters to reach far into the parcel where retaining ponds (lagoons) will be constructed. At

tides above six feet (or there about) the entire parcel may be flooded and at tides below that level, impounded water will remain within a series of constructed ponds. While we support the general project design and the project proponents intent to enhance wildlife and ecological values on this public parcel, we are concerned that the project could adversely affect nearby private lands and businesses. Our thoughts/concerns are briefly shared below with more detail in subsequent paragraphs.

- **Health and wellbeing of the Mad River Slough -** water quality, turbidity, temperature, salinity, shoaling, toxicity of newly suspended sediments, impact to the native oyster beds adjacent to the project area, impacts to down slough shellfish holding facilities of Humboldt Bay Oyster Company and North Bay Shellfish, impacts to intake and nursery facility of Mad River Slough Shellfish Nursery.
- **Environmental protection of the slough and surrounding area** – project equipment petroleum spills/leaks, fuel, import of invasive plants, introduction of deleterious bacteria and virus from terrestrial and aquatic replanting, or shellfish repopulation.
- **Lanphere Road and Bridge -** Traffic congestion and interim road usage to reach the project area, long term damage to the road surface between Siedel Road to the USFWS gate, long term damage to western abutment of Lanphere Road Bridge from wave action, construction of the new northern levy and its connection to the southwestern bridge abutment.
- **Creation of public access points -** Dumping, camping, unauthorized hunting, parking, vandalism, theft, trespass.

Specific concerns were voiced at the October 2, 2023 meeting and some responses were provided. While it seems that the project proponent is well versed and experienced in these sorts of restoration projects and is operating within the paradigm of the USFWS mission to consider ecologic benefit as its top priority, we want to provide the following concerns and questions at this time so that they can be considered and addressed.

We appreciate this opportunity to engage the agency at this level and hope that our concerns are met with a commensurate level of interest. The three shellfish operators above and below the project site are long standing and are at the forefront of ensuring the health and good water quality of Mad River Slough and the larger Humboldt Bay. There are perhaps no other individuals who depend more on the health of the bay, and have more personal interest at stake, when there are incidents or changes to land uses that could have adverse impacts. We hope that the following concerns and questions will be taken seriously and that follow up meetings can be scheduled before project implementation.

1. We are consistently concerned about the **health and water quality** of the Bay specifically in Mad River Slough. North Bay Shellfish and Humboldt Bay Oyster Company have shellfish processing and storage facilities in the lower end of the slough. These are locations that have long been designated as health testing sites where meat and water quality samples are taken, at great expense and time, to monitor and help coordinate closure times as well as regularly analyze shellfish health for bacterial and viral pathogens. Any changes to water chemistry, turbidity, pH, salinity, temperature, nutrients, algae, and trace elements could cause changes to the existing

conditions. How will the project proponents ensure that the proposed undertaking will not cause changes in these parameters, over the long and short terms, and if so, what are the project proponents intending to do about this?

Humboldt Bay has a disease-free status which allows shellfish producers such as Mad River Slough Shellfish Nursery to export shellfish seed to other parts of the country and internationally.

Mad River Slough Shellfish Nursery may coordinate with Oregon State University and others to install a more sophisticated water quality monitoring station in the vicinity of Lanphere Road Bridge. This device is capable of monitoring temperature, salinity, oxygen saturation, etc. with data integration at the national level. Perhaps the project proponent would be interested in helping with such water quality monitoring devises and keeping track of such data as part of any larger monitoring requirements for the proposed project?

Additionally, the navigability of Mad River Slough is a serious concern. Any shoaling or bar development at the point of breach, or anywhere along the parcel boundary of the affected area, would be an adverse impact to the three shellfish producers who regularly navigate the slough to reach grow-out locations in the North Bay or to their subtidal raft processing location, wet storage, and subtidal tray rafts. Navigability of the slough channel is integral to the mariculture activities permitted in these locations, and has been occurring since the early 1980s. The reach of slough along the project area is currently navigable even at a -1.5 tide. How will breaching the levy change this? Have the project proponents measured the bathometry of the slough channel to a stationary vertical datum? Is there any intent to monitor changes to this? What will happen in the event shoaling does occur, in the future, making the channel unnavigable for small boats? A plan of action, regarding this potential negative effect to our livelihoods, should be made prior to implementation of the project.

2. **Erosion and damage to Lanphere Road and bridge abutment** along the northern portion of the project area is of concern for the long term. Storms with winds, coupled with high tides, may only arise every few years and impacts may not be immediately realized. Our main concern is Lanphere Road between the bridge and the USFWS unlocked gate. This portion of the road is currently in very poor shape and project related traffic will certainly cause surface damage. The roadway is currently at an elevation that is vulnerable to flooding. The proposed levy to the south of the road is appreciated, but needs to be constructed in a way that is cognizant of our concerns about trespass, parking, hunting, etc. The levy could be detached from the road with a ditch or some sort of impassable obstacle to reach the top of the new levy. The public will use this a viewing platform otherwise. The levy should be planted with poison oak, blackberries or other vegetation that makes it undesirable for access. Willow or over story is not preferred as it may become hiding location of homeless and other opportunists. Any fencing should be of wire and able to be see-through. Please do not create new hiding locations. Any problems to Lanphere Road at this reach encourages trespass onto the driveways at the Sea Horse Ranch property, which has been a long-standing problem, despite our private property signage at this location. Production of an existing conditions report would be useful to document all these instances to develop a baseline in which to measure effects of the proposed project.

The strong south winds that accompany winter storms and often coincide with high tides will have the ability to erode the new levy. Levees, like roads, require regular maintenance. We suggest armoring the south side of the new levy with hard substrate to resist the effects of wind driven waves. We are especially concerned at the location where the new levy will interact with the southwest corner of the Lanphere Road bridge. How will the bridge abutment be protected from swirling scour? Any ditch between Lanphere Road and the new levy would necessarily need to drain from here. This is a specific location that should require coordination with Humboldt County Public Works and Sea Horse Ranch owners. What are the project proponents doing to ensure these concerns are met? Is there any County permitting needed for grading? Perhaps the County should be involved to ensure that the existing conditions of the roadway can support such project related traffic before the project and the condition of the road afterwards.

The remainder of Lanphere Road, easterly to Siedel Road suffers from poor surface conditions. This road, due to its relatively rural location, is probably low on the County's maintenance list. Periodic potholes are filled, but generally the road is in very poor condition. The Ferriera family has long wanted to gate Lanphere Road at Siedel Road, limiting the public for entry. Perhaps this is worthy of continued discussion with the County and could be renewed as part of the proposed project, considering ingress and egress routes are immediately adjacent to the Ferriera Dairy. Again, an existing conditions type report would benefit all of us here in order to better document the surface condition of the road, prior to and after the proposed project. In the event the road is further damaged, corrective actions could be taken without argument about when, where and who caused such damage.

3. Increasing public access at unauthorized locations along Lanphere Road is a concern. Will waterfowl hunting of the new wetlands areas be allowed? The parcel is currently subject to walk in hunting and we are experiencing unauthorized parking all along Lanphere Road as a result. Furthermore, there are several residences within a couple hundred feet of the newly proposed ponds in two locations. We do not want project elements to increase parking on Lanphere Road or trespass onto Sea Horse Ranch property or other owners by hunters trying to access the new ponds for hunting opportunities. We suggest that this area be closed to all hunting. Alternatively, hunting could be boat-in only with no pedestrian allowances. Hunting could also be limited to a draw, where the USFWS manages who enters and the permit would then come with instructions of where to park and where to not shoot. We furthermore do not want hiking or water trails to emanate from Lanphere Road at the bridge. This access should all be provided from the existing parking areas at Ma-le'l Dunes and controlled by permit as the dunes are.

These are some of the concerns voiced at the October 2, 2023 meeting. Because there were no notes being taken or a recording of the meeting, it seems appropriate that they be given in writing here. These may not be the only concerns that arise. We are hopeful that the USFWS can initiate a second meeting to discuss these and be ready for solution driven coordination.

Again, we remain optimistically cautious about the proposed project. We support our federal neighbor in their mission to manage wildlife and natural habitat in a way that is positive and productive. These sorts of projects appear to have been successful around Humboldt Bay and we hope that this design here in Mad River Slough will be sound and result in increased bio

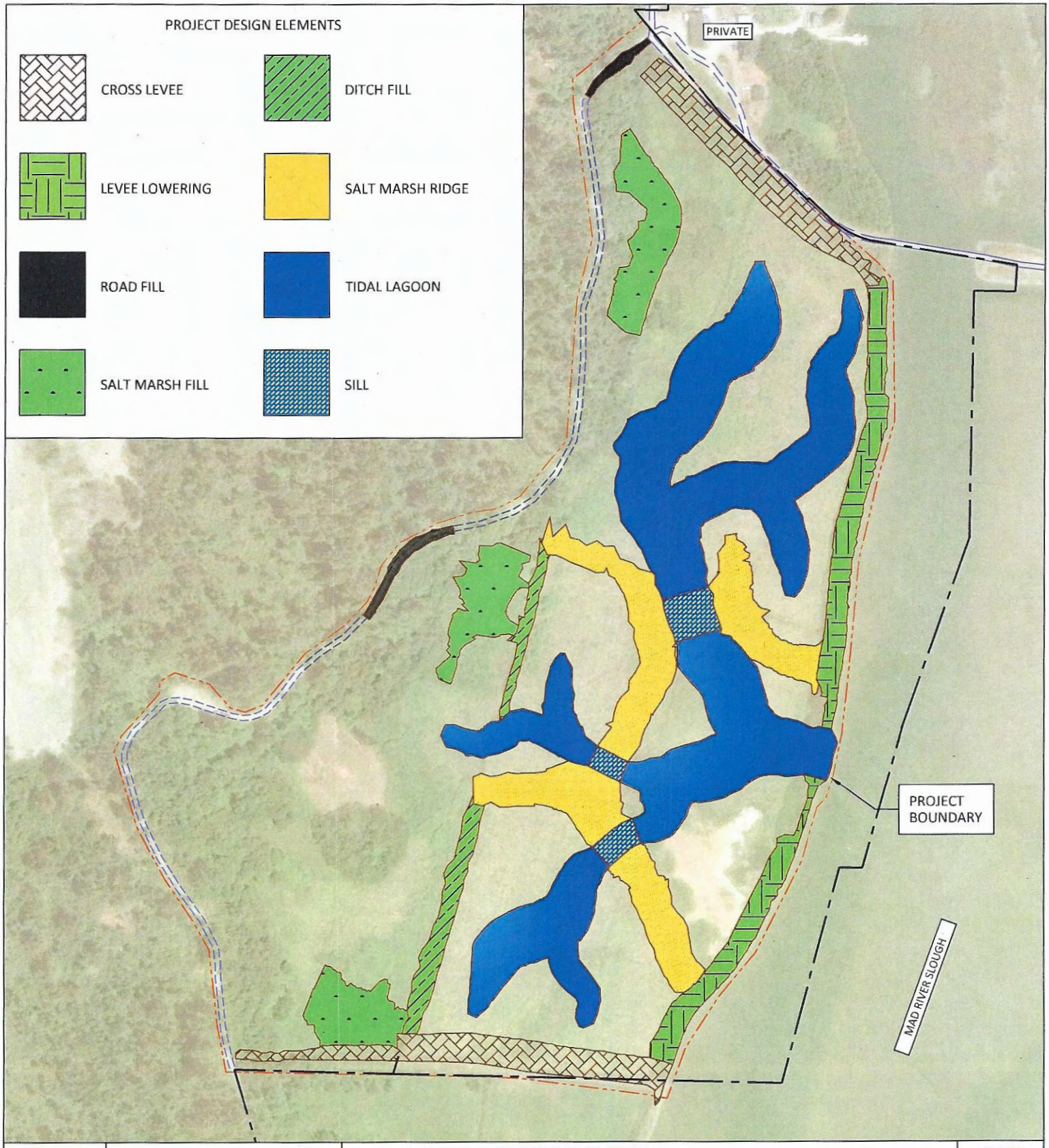
productivity and health of the slough. The Sea Horse Ranch may be an asset to such a project. We can offer expertise in existing conditions, native shellfish repopulation, environmental monitoring, as well as staging/storage and access areas.

We thank you for the opportunity to submit this letter and hope to participate in further discussions about these matters.

Sincerely,

William and Kimberly Rich
Sea Horse Ranch LLC
Mad River Slough Shellfish Nursery

cc: Conor Shea, Civil Engineer USFWS
Andrea Pickart, Ecologist, USFWS
Darin Ferreira, Ferreira and Son Dairy
Todd Van Herpe, Humboldt Bay Oyster Company
Scott Sterner, North Bay Shellfish
CJ and Carol Ralph
Mike Wilson, Humboldt County Supervisor, District 3
John Ford, Humboldt County Director of Planning and Building
Tom Mattson, Humboldt County Director of Public Works
Steve Finch, Humboldt County Roads Division Manager
Andrew Bundschuh, Environmental Permitting and Compliance Manager, Humboldt County



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WADULH LAGOON TIDAL WETLAND ENHANCEMENT PROJECT BRIEFING

PROJECT DESIGN ELEMENTS

IMAGE SOURCE: DIGITAL GLOBE, 2022

FIGURE

4

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Humboldt Bay National Wildlife Refuge Complex
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Phone (707) 733-5406 / Fax (707) 733-1946
www.fws.gov/refuge/humboldt-bay

October 26, 2023

Dear Lanphere Stakeholders,

We enjoyed meeting with you to discuss the plans for the restoration of the old Caltrans Parcel. We appreciate you taking the time out of your busy schedules to find out more about the project and express your concerns. We aim to keep an open line of communication with you as we go through this process.

An estimated timeline of the project is as follows. In our current phase, we are gathering information from those that live/work around the site with a hope of adequately addressing concerns. The next phase in the plan will be opening this up to public comment in early to mid- Nov. The rest of the compliance requirements will be finished up this winter into early spring which will be followed by obtaining required permits. Restoration activities are planned to start mid-Aug. and completed mid-Oct. of 2024.

To reiterate, the U.S. Fish and Wildlife Service (USFWS), National Wildlife Refuge System's mission is to "Conserve, protect, and enhance fish, wildlife, plants and their habitat." In addition, USFWS promotes the development of resilient, nature-based solutions that restore habitats and reduce future maintenance needs. This restoration project aims to do just that by restoring a diked agricultural pasture to a combination of estuarine and palustrine wetland habitats, including salt marsh, brackish marsh, mudflat, and subtidal/intertidal eelgrass habitat, while enhancing and protecting existing forested wetlands with a natural shoreline. This mosaic of wetlands will improve habitat for aquatic species, provide improved habitat to resident and migratory neotropical birds and shorebirds, encourage conditions to support eelgrass, protect again the loss of forested wetlands from saltwater, and promote long-term sustainability of fringing salt marsh.

During the course of the meeting on Oct. 2 at CJ and Carol Ralph's home, we heard the concerns listed below followed by our responses in bullets.

1. Impacts to oyster production due to water quality (turbidity) or navigability of Mad River Slough channel:
    - We are investigating your concerns further by developing a hydro-dynamic model which will provide information about flow velocities out of the restoration site, water levels and sediment transport. We will consult with you about the outcomes of this model to identify if further steps need to be taken to remove potential impacts.
2. Impacts to Lanphere Rd through an increase in truck traffic:
    - We checked our estimates on amount of gravel needed to top dress the portions of driveway that will need to be elevated. The estimate for gravel is 5-10 loads (<100 CY) of gravel and mobilization/demobilization of heavy equipment. We estimate 15 truckloads will be hauled on the Lanphere Rd. to support this project.
    - Except for the gravel, there will be no import or export of fill to/from the site.
    - We do not expect damage from this low level of traffic. Any damage will be fixed to return road to condition prior to project.

    - The team has contacted Mike Wilson and Hank Seeman to share concerns about the road and requests made for improvements including speed humps.
3. Removal of water from low spot between Ralph's/Refuge gate and mailboxes in front of Rich Property:
    - The plan is developed to deal with this by installing drainage from the low spot in road to wetland through a flapper gate.
4. Increase in public traffic to watch wildlife or restoration activities:
    - We do not foresee a significant increase in traffic due to this project. For example, there will be no viewing points along the road developed for the public to view the site and we are not providing any expanded or new public access to this area.
    - This area will remain closed to waterfowl hunting including from the slough side.
5. Lack of NEPA:
    - The US Fish and Wildlife Service adopted National Ocean and Atmospheric Restoration Center's Programmatic Environmental Impact Statement (PEIS) for Coastal Habitat Restoration In August 2019. This is a legal process that reviews the project and its impacts through an Inclusion Analysis Process. The Refuge will utilize the process to meet NEPA compliance.
    - This PEIS was developed to analyze a suite of restoration activities that have been shown to effectively conserve and restore coastal and marine habitats and ecosystems. This can include hydrological and tidal reconnection, freshwater wetland restoration, shellfish restoration, saltmarsh recovery, coastal erosion prevention and invasive species removal.
    - Utilizing the PEIS does not preclude the Refuge from meeting NEPA or other compliance requirements. The requirements include the following items:
        - A 30-day public comment period
        - Compliance with the National Historic Preservation Act that includes:
            - Coordination with tribes on project (In process).
            - Conducting a Cultural Resources Survey (Completed May 2023).
            - Completing a 106 Compliance Memo to SHPO and Tribes (In process)
        - Obtaining permits from: CDFW, North Coast Regional Water Quality Control Board – Sect. 401 Permit, HB Harbor, Recreation, and Conservation District, US Army Corps of Engineers – Sect. 404 Permit, Coastal Commission – Consistency Determination
        - Endangered Species Act Section 7 Consultations with US Fish and Wildlife Service and National Marine Fisheries Service
    - Project will go through an Inclusion Analysis Process with National Oceanic and Atmospheric Administration staff to ensure that the project and any foreseeable impacts are within the scope of the PEIS. In addition, the process will ensure that mitigation measures are utilized to avoid adverse impacts greater than is described in the PEIS.
6. Lack of Alternatives Analysis:
    - Because the Refuge is utilizing the PEIS, an informal alternatives analysis was developed to guide the planning of management and restoration actions for the parcel. We evaluated five action alternatives including the following:
        - Alternative 1 - No Action
            - Not chosen because of potential impacts to adjacent properties and Ralph/Refuge driveway in event levee fails, which is considered likely.
            - Pasture has little habitat value to wildlife in current condition.
        - Alternative 2 – Maintain Status Quo

        - Requires a major investment to bring in 11,000 CY of fill and 2,500 CY riprap to repair and stabilize levee.
        - Importing fill would have impacts on Lanphere Rd.
        - Not selected because pasture has little habitat value to wildlife in current condition, high implementation costs, and potential impacts to Lanphere Road.
    - Alternative 3 – Muted Tidal
        - Requires rebuilding and stabilizing levee, so similar issues as Alternative 2.
        - Some small gains in habitat for birds and fish within the converted pasture area.
        - Not selected because of limited improvement in habitat value, high implementation costs, potential impacts to Lanphere Road, and failure to address long-term impacts of sea level rise.
    - Alternative 4 – Full Tidal with Setback Levee
        - Construct setback levee to create a limited adaption space for Sea Level Rise (SLR),
        - Creates barrier between Mad River Slough and Lanphere Dunes.
        - Setback levee would require at least 65,000 CY of fill to build.
        - From previous experience, finding and importing clean fill is difficult and cost prohibitive.
        - Importing this much fill would have major impacts to Lanphere Rd.
        - Provides for a mosaic of habitats for the benefit of a wide variety of fish, wildlife and plants.
        - Not selected because high implementation costs, potential impacts to Lanphere Road, and limiting accommodation space for sea level rise.
    - Alternative 5 – Full Tidal with Natural Shoreline – Chosen Alternative
        - Costs less to implement than alternatives 2 through 4, no import of fill needed to restoration site.
        - Restores full tidal access to historical tidelands and restores a natural shoreline on Mad River Slough.
        - Protects neighboring properties and access to Ralph/Refuge from flooding.
        - Provides for a mosaic of habitats for the benefit of a wide variety of fish, wildlife and plants.
        - Plan allows for all materials needed for protection levees, saltmarsh plain, and road fill to be gathered onsite without the need for fill to be imported.
        - Selected Alternative because it provides best improvement in habitat quality, meets Refuge's management goals, is a Nature Based Solution and is less expensive than other alternatives.

Thank you for your letter dated Oct. 17, 2023. Many of the concerns brought up during our meeting are addressed above, but we noted a few in your letter that still need to be addressed or require further research. In the interested of time and to get our initial responses to you, our team will work together to

get the information needed to respond to those concerns and may present them either during our meeting to go over the hydro-dynamic model or in a separate letter, whichever is earlier.

Again, we want to keep an open line of communication as we go through this process. We look forward to meeting with you all again to go over the hydro-dynamic model, answer any additional questions or concerns you may have, and talk more about the project. We, too, would be interested in exploring the possibility of providing habitat for the repopulation of native shellfish to the restoration site. This would provide another level of biological diversity to the site and continue to improve water quality within the Slough. Please feel free to reach out to any of our team members. Looking forward to talking more about the project.

Much Thanks,

Cashell Villa
Project Leader, Humboldt Bay National Wildlife Refuge
707-382-8890

cc:
Conor Shea, Civil Engineer
USFWS Andrea Pickart, Ecologist, USFWS
Darin Ferreira, Ferreira and Son Dairy
Todd Van Herpe, Humboldt Bay Oyster Company
Scott Sterner, North Bay Shellfish
CJ and Carol Ralph
William and Kimberly Rich, Sea Horse Ranch LLC

Via Email
fw8plancomments@fws.gov

January 26, 2024

United States Department of the Interior
U.S. Fish and Wildlife Service
Humboldt Bay National Wildlife Refuge
1020 Ranch Road
Loleta, CA 95551-9633

Re: Mad River Slough Restoration Project and CCP Revision

Dear Assistant Regional Director, Refuges:

The California Farm Bureau appreciates the opportunity to provide the U.S. Fish & Wildlife Service ("USFWS") with these preliminary comments on the Mad River Slough Restoration Project ("Project") on behalf of our membership.

Farm Bureau is a non-governmental, non-profit, voluntary membership California corporation whose purpose is to protect and promote agricultural interests throughout the State of California and to find solutions to the problems of the farm, the farm home, and the rural community. Farm Bureau is California's largest farm organization representing approximately 29,000 members in 54 counties, including the approximately 282 members of the Humboldt County Farm Bureau. Farm Bureau strives to protect and improve the ability of farmers and ranchers engaged in production agriculture to provide a reliable supply of food and fiber through responsible stewardship of California's resources. Farm Bureau also aims to improve the ability of individuals engaged in production agriculture to utilize California's resources to produce food and fiber in the most profitable, efficient, and responsible manner possible guaranteeing our nation a domestic food supply.

Farm Bureau has member farmers and ranchers who appear to be directly impacted by the Project. We have reviewed the project materials available to us online, posted for a very short 30-day comment period which commenced over the holidays, and provide you with the following comments and concerns on behalf of our membership:

1. Environmental Review Appears to Be Lacking.

We are unclear as to what public review is sought by the date of January 26. Project materials posted online appear to rely upon a 2015 programmatic EIS the covers coastal restoration activities for the entire United States, and also include an internal USFWS memorandum which appears to call for the use of a NEPA categorical exclusion at the project level because approval of the Project would constitute only a "minor" revision to

an existing Comprehensive Conservation Plan ("CCP") for the Humboldt Bay NWR Complex. This CCP was not linked to the Project materials posted online and we have not had the opportunity to review it under this timeline; we question whether the proposed Project activities, which involve physical restoration activities to restore some 48.6 acres of agricultural wetland "through placement of fill, excavation, and removal or lowering of exterior levees on Mad River Slough", have been reviewed in any document at a level of granularity appropriate to informing the public of the proposed Project's impacts and allowing for informed decision-making about the Project's impacts, feasible mitigation measures, and reasonable alternatives.

Reinforcing this point, it bears note that USFWS' Project-related documents appear to contemplate follow-on permitting by a large number of state and federal agencies, including the California Department of Fish and Wildlife, the North Coast Regional Water Quality Control Board, the California Coastal Commission, the U.S. Army Corps of Engineers, and the National Marine Fisheries Service. Specifically mentioned are the need for a Section 401 permit under the Clean Water Act, a consistency determination under the Coastal Act, a Section 404 permit under the Clean Water Act, and Section 7 consultation under the Endangered Species Act, in addition to local permitting. All of this begs the question of whether USFWS should proceed with this Project on the basis of a nationwide PEIS completed in 2015, absent project-level review.

Therefore, as a matter of sound policy as well as the requirements of NEPA, we request additional environmental review of the proposed Project by USFWS, in a manner and on a timeline designed for appropriate consideration of the Project's potential impacts.

2. Farm Bureau Members Have Articulated Environmental Concerns.

It is our understanding that the USFWS has informally met with several Farm Bureau members involved as "Lanphere Stakeholders", who have articulated specific environmental concerns in writing. Those stakeholders have set forth particularized concerns about health and water quality impacts – not unimportant questions for shellfish operators – as well as changes to the navigability of Mad River Slough. Additional concerns put before USFWS have included road and traffic impacts, and the potential for erosion and/or damage to a bridge abutment. Finally, questions have been raised about the USFWS' intent with respect to public access in the area.

USFWS appears to have provisionally answered some of these concerns in an October 26 letter, which we see as setting forth bulletized answers that should manifestly be a matter of a formalized NEPA document. Those bullets include mention of a "hydro-dynamic model" to address water quality impacts; a description of 5-10 truckloads of fill gravel to stabilize road use as a result of truck traffic; and "an informal alternatives analysis" developed to guide the planning of management and restoration actions for the parcel.

While USFWS' diligence in meeting with some of these stakeholders and addressing their concerns in writing is admirable, discussion of these potential impacts should be a matter of a formalized NEPA compliance document that allows for review by *all* members of the public.

We appreciate your consideration of the foregoing, which has been prepared without the opportunity for a more considered timeline in review all documents in relation to the proposed Project. We have endeavored to respond to the call for a "30-day public comment period" without completely understanding precisely which environmental review documents underpin this Project at this time; we look forward to working constructively with USFWS as this process goes forward.

Very truly yours,

Christian C. Scheuring
Senior Counsel
California Farm Bureau

CCS/jt

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January 26, 2024

RE: USFWS - Mad River Slough Restoration -Wadulh Lagoon – Comment Letter #2

Dear Ms. Villa,

I would like to thank you for the time spent with us at the second meeting last month on December 14, 2023 at the nearby agency office. I know our group was pleased to see the level of analysis and details provided regarding some of the expected changes that may occur to this former agricultural field as the agency implements restoration activities to return the land to intertidal wetlands.

As you know, the northern end of this project area abuts the southern line of our private parcel for a distance of about 760 feet. Our parcel is a principally zoned agricultural exclusive with combining zones of natural resources. Initially a dairy ranch, on mostly reclaimed lands, our property contains an occupied residence which lies less than 100 feet from the proposed project boundary. This building once served as a barracks for the U.S. Coast Guard 12th Regiment of Company C who conducted mounted nighttime patrols along the beach from 1942 to 1944 during the period of the war after the 1941 attack on Pearl Harbor when our country was worried about another Japanese infiltration. A later property owner, Darrell "Chris" Christensen was a foundation Appaloosa breeder with notable success from his horse "Eagle Dollar F1536". The field in which the proposed project is located is where Christensen kept and grazed these animals in the once belly deep pastures created when these lands were diked. In 1975 Christensen joined his widowed neighbor Hortense Lanphere and donated lands to form the Lanphere/Christensen Preserve now part of the refuge lands. Christensen held the project area until his sale to the neighboring DeMello family who continued grazing livestock until being offered a high purchase price by a governmental agency for restoration purposes. Costly permitting and repair of the dike near a county road may have also persuaded the sale from private to federal ownership.

Mariculture operations started on our property in about 1978, being used to raise nursery seedstock of oyster and clam and as a port of landing for grow-out lease areas in Mad River Slough and Arcata North Bay. Commercial shellfish operations continued, and under new permitting and ownership; the current operator, the Mad River Slough Shellfish Nursery, will restart in the spring of 2024 season. Intake pumps will draw water at a point about 700 feet north of the project and about 2,000 feet north of the proposed low elevation breach. The Mad River Slough is a highly productive saltwater estuary where seasonal algal production provides unique opportunities to successfully culture shellfish larvae and seed. Seed sales will continue to support the market growers along the US West Coast and beyond. Mad River Slough Shellfish Nursery is one of very few farms permitted to import shellfish stock into Washington state.

Kim and I are hopeful that your proposed project achieves the goals you intend. We trust that you will continue to keep our concerns in mind as you design and finally complete this project. Our concerns continue to remain the same, but here are a few related thoughts to these general topics.

Health and well-being of the Mad River Slough– Successfully rearing of larval shellfish species requires water quality control. Although our intake is screened, we especially hope you can develop a plan to manage any turbidity increases. Bacteria attach to suspended sediment and are a concern. We wonder if other water quality measures could be affected, such as PH, salinity, temperature, and flow rates. Shoaling of the heavy fraction of substrate that will become mobile from the newly graded and filled surfaces within the intertidal prism is a concern not only immediately after the breach but more long term and as the levy top deflates and erodes into the slough channel. Maybe the portion of the levy that will remain can be engineered to erode towards the west and not onto the lower tidal muds. We hope that the project will not impact the naturally broad diversity of algae in this unique waterbody. We trust that you and your supporting agencies have the same concerns.

We hope that projects like this will ensure the health and resiliency of Humboldt Bay and its environments, but also recognize that it would be naïve of us to think everything we try will work correctly. While Kim and I are not experts in wetlands bioengineering, water chemistry, tidal physics, we do hope our comments raise increase your awareness of the possibility of unintended consequences. We feel that these must be identified and managed.

This may be a rather unique project site in terms of others that have been completed around the bay. This project is adjacent to several mariculture businesses, with several full time residences living within 100 feet of the project boundary. Should we have a discussion about adverse conditions from construction traffic, timing, and noises to this residence? What about the possibility of creating an attractive nuisance by this project. We hope that the ponding locations are not near the northern boundary. While we have great respect for the waterfowl and their habitat, we'd rather not have the ponds right up against the area of Lanphere Road. This will encourage trespass, illegal hunting, and dangerous discharge of firearms. Any new levy to be constructed along Lanphere Road should not increase unauthorized access to these public lands. Maybe consider placing any of the really attractive project elements, like the ponds, away from Lanphere Road as much as possible.

Environmental protection of the slough and surrounding area – How do you keep the turbidity from increasing during and shortly after construction? What are the baseline turbidity levels anyway? How far will the volume of slough water being discharged, from newly graded erosional surfaces of the project area, go up and down the slough? How much mixing will occur? Obviously, we are concerned about turbidity plumes reaching our shellfish nursery intake point. I suppose this is inevitable given the scope of the project. Maybe alternatives could be looked at? Does the remainder of the levy need to come down to 7 feet?

Lanphere Road and Bridge - Issues related to the surface of Lanphere Road, Lanphere bridge abutment and the proposed tidal levy on the west side of the road seem unanswered. We want the project design to not cause impacts to the southwestern corner of the Lanphere Road bridge.

How will the levy be configured at this location to not cause erosion around this side of the bridge?

The surface of Lanphere Road, especially west of the bridge is in poor condition. This serves some positive outcome though as it slows and discourages traffic by our property. I would rather the elevation of the road in this are not be raised. Currently trucks and cars are below the grade of our farm and drivers are not able to look directly over to our work areas. I would not want to feel compelled to erect a privacy fence in the event the road was raised. Doesn't seem in keeping with the rural refuge scenic qualities. We are fine if you leave the Lanphere Road surface, west of the bridge, at the same location and in the same condition it is currently in; however, an assessment needs to be made regarding the potential for future flood events, along this western portion of Lanphere Road, due to the USFWS project.

Creation of public access points – Importantly we do not want the refuge, as our neighbor, to encourage, either directly or indirectly the public from loitering around or on Lanphere Road at the bridge or your gate areas. I am regularly removing fresh trash from these locations and having to discourage people from parking and wanting to stay. We have experienced theft at this location. Consider removing the USFWS/Refuge gate to the Dunes parking areas, please. This would limit the use of our private parking area and private road, as a turn around and thorough-fare for USFWS visitors and other public users. The gate to the refuge property is never locked and it is curious what service is provided by having it at the current location?

Again, we appreciate this opportunity to comment on the proposed project. We hope that the following concerns and questions are taken into account via a legitimate and transparent regulatory process, not unlike the one we are bound to adhere to, in the restart of the shellfish nursery. We still remain optimistically cautious about the project. We support our federal neighbor and hope that they support their private neighbors also.

Sincerely,

William and Kimberly Rich
Sea Horse Ranch LLC
Mad River Slough Shellfish Nursery
6210 Lanphere Road
Arcata, CA 95521

Enclosure (1): Comment Letter #1 to USFWS, dated October 6, 2023

Todd Van Herpe
Humboldt Bay Oyster Company
P.O. Box 241
Cutten, CA 95503

January 26, 2024

Cashell Villa
Project Manager
Wadulh Lagoon
Humboldt Bay National Wildlife Refuge
1020 Ranch Road
Loleta, CA 95551

Re: Wadulh Lagoon Construction Project

Dear Mrs. Villa,

As a stakeholder and neighbor of this project, I am grateful for the opportunity to comment on the Wadulh Lagoon Project in Mad River Slough (Project). The Project is directly adjacent to an oyster farming operation to the north that has existed for more than 45 years. I have personally traversed Mad River Slough for more than 30 years as an oyster farmer and am keenly interested the environmental health and integrity of the bay and support this Project's vision.

I share the goal of restoring the naturally functioning system to your newly acquired property and have concerns of its potential short-term, and perhaps longer-term, impacts to the slough during and after the construction phase:

1.) During excavation of the deep intertidal channels suspension of sediments will occur and enter the waterway. The increase in suspended sediments into the slough will impact water quality and potentially be problematic for the oyster seed operation directly north of the Project. This degradation of water quality could greatly impede the operation's successful larval stages. Increased suspended sediments will also affect sunlight penetration and negatively impact submerged aquatic vegetation such as eelgrass. Sediment settlement on existing eelgrass beds, if heavy, could smother eelgrass meadows in the immediate area. I request a monitoring program be initiated before construction of the Project to establish baseline data on suspended sediments and adjacent eelgrass and continue that monitoring for at least three months after Project completion.

2.) The sediment load will also likely impact water quality of the oyster Growing Area south of the Project in Mad River Slough. This Growing Area is classified by the California Department of Public Health, Environmental Management Branch based on many years of sampling and existing and predictable water quality conditions. Newly introduced variables present unknowns to the area and will pose unpredictable changes to the classification and may put this classification/certification in jeopardy. The Shellfish Protection Act (1993) of the California Water Code protects California's shellfish growing areas from degradation from point and non-point sources. I am hopeful these impacts will be temporary and therefore would not necessitate the formation a Shellfish Technical Advisory Committee to investigate and correct these impacts. However, to assure these impacts are temporary or nonexistent, I request a water quality monitoring program be conducted prior to construction and for six months post-construction of the Project.

3.) I anticipate that breaching the levee and lowering its height will lead to gradual erosion of the soft fill soils and over time it should be expected that the gap in the levee will grow wider and its elevation further reduced due to the natural weathering via wind and tide. These gradual impacts should be anticipated and modeled by the Project planners yet are not stated in the Project Summary nor mitigated for.

4.) In addition to sedimentation, Project construction will also release new nutrient loading from the project site and the associated biological oxygen demand produced when these soils are disturbed. This area is seasonally flooded and fed with a spring that attracts waterfowl and the area has historically been utilized to graze cattle and produce hay feed. These activities have created very rich, fertile soils that once disturbed by construction activities will inevitably release these nutrients into the waters of Mad River Slough resulting in perhaps longer-term eutrophication and increased oxygen demand stresses on the waterway. I request adding oxygen and nutrient monitoring to the Project.

5.) While modeling can be very helpful in predicting whether the planned modification of the slough will have impacts to the navigable channel of Mad River Slough and make it impassable due to shoaling, scouring or sediment deposition, there is no guarantee that this Project will not impede boat traffic by changing the course and depth of the channel. This channel is the only means of access to my farm in Humboldt Bay from the Lanphere Road boat dock and shoreside processing/shipping. If the Project were to make the navigable waters of the state impassable and eliminate access to my farm leases it would strangle my operation. Therefore, I request additional monitoring of the slough channel that establishes the current conditions as a baseline and watches for changing conditions due to the Project that could restrict boat traffic and that would establish corrective actions requiring the USFWS to reestablish the navigable channel in the event the channel is made impassable.

6.) Construction equipment and activities will put additional pressure on Lanphere Road further degrading its quality and safety. Lanphere Road is not only unpleasant and damaging to vehicles and drivers, but it is unsafe due to its narrowness and steep shoulders. This road has already been heavily impacted by large trucks when a levee

was constructed to protect a private parcel immediately south of the Project. This "cross dike" was built using heavy equipment and many dump truck loads of large rubble over many weeks to establish a protective wall against slough intrusion onto the private property in anticipation of the Wadulh Lagoon construction project. These heavy loads further damaged the road. This Project will put additional stress and damage on Lanphere and, therefore, should be repaved after construction as a show of good faith to the neighbors and stakeholders impacted by these two associated activities.

7.) The Project will build a levee on the north end of the project site that will protect the public roadway and adjacent private property from tidewater flooding. It has been verbally agreed that it is the responsibility of USFWS to construct and maintain adequate drainage/flood control of this section of roadway along the new levee during and after construction. I request that this agreement be confirmed in a written enforceable agreement.

8.) There are three areas along the Project's existing levee that have historical piles of automobile parts (axles, wheels, etc.) visible from the slough that were likely used to repair or "firm up" weak or failing areas of your property. I believe it is the perfect time to remove those piles of debris while the Project is in its construction phase and the equipment is on location. Please add removal of those debris piles to the Project to further enhance the project's goals of environmental enhancement.

9.) There is great opportunity for this project to integrate a native oyster restoration component to the design. The local native Olympia Oyster population and their associated ecosystem services in Humboldt Bay is limited by adequate substrate for the larval stages to settle upon. Adding hard substrate such as rock, concrete, or oyster shell to the deeper channels of the Project (-2' to +1' tidal elevation) is an easy, cost-effective way to add scarce native oyster habitat and enhance its natural local population and related water quality improvement. Natural background larval production is adequate to seed these added substrates with a "natural set" of native oysters that would build into larger oyster reefs over time.

Thank you for the opportunity to make comment on this project. I generally support the habitat and environmental quality enhancement intentions of this project and look forward to your responses to my concerns.

Sincerely,

Todd Van Herpe
Humboldt Bay Oyster Co.

Gmail

Kim Rich <krich1072@gmail.com>

Comments and Responses to Humboldt Bay National Wildlife Refuge - Draft Project Summary for Mad River Slough Restoration and CCP Minor Revision for Review

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Villa, Cashell CV <cashell_villa@fws.gov> Thu, Jun 27, 2024 at 3:38 PM

Good Afternoon,

Thank you for submitting comments to the Draft Project Summary for Mad River Slough Restoration and CCP Minor Revision. Please find attached all of the comments we received and our responses to them. We have taken into account the issues and concerns that were raised by modifying aspects of the project to ensure that we minimize impacts to businesses, adjacent landowners, and the environment. We look forward to working further with our stakeholders regarding this project.

Thank you,

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Cashell Villa
Project Leader
Humboldt Bay National Wildlife Refuge Complex
DOI Region 10 - California Great Basin
1020 Ranch Rd., Loleta, CA 95551
Office: 707-733-5406 ext. 3
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From: Villa, Cashell CV <cashell_villa@fws.gov>
Sent: Wednesday, December 27, 2023 3:33 PM
Subject: Humboldt Bay National Wildlife Refuge - Draft Project Summary for Mad River Slough Restoration and CCP Minor Revision for Review

The U.S. Fish and Wildlife Service invites public comment on a project proposal requesting National Environmental Policy Act (NEPA) compliance under National Oceanic and Atmospheric Administration's (NOAA) *Programmatic Environmental Impact Statement for Habitat Restoration Activities Implemented Throughout the Coastal United States* (Available online at https://www.fisheries.noaa.gov/resource/document/restoration-center-programmatic-environmental-impact-statement) and a draft Comprehensive Conservation Plan (CCP) minor revision. This project will restore historical wetland types, increase adaptation to sea level rise, and provide protection as part of the Humboldt Bay National Wildlife Refuge in perpetuity. The project will also assist the recovery of four federally listed endangered fish species, as well as special status bird and plant species. The draft project summary and CCP minor revision are available for public review and comment until January 26, 2024. The draft documents are available online at: https://www.fws.gov/story/2023-12/draft-project-summary-mad-river-slough-restoration-and-ccp-minor-revision-review

Draft Project Summary for Mad River Slough Restoration and CCP Minor Revision for Review | U.S. Fish & Wildlife Service

The U.S.

www.fws.gov

Restoration Center Programmatic Environmental Impact Statement

The Restoration Center Programmatic Environmental Impact Statement assesses the impacts of habitat restoration activities, reduces administrative costs, and maximizes program efficiency.

www.fisheries.noaa.gov

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Cashell Villa
Project Leader
Humboldt Bay National Wildlife Refuge Complex
DOI Region 10 - California Great Basin
1020 Ranch Rd., Loleta, CA 95551
Office: 707-733-5406
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Response to Public Comments - Mad River Slough Restoration FINAL.pdf
287K

Responses to Comments: Mad River Slough Restoration Project

<u>California Farm Bureau (CFB) Comment Letter</u>

CFB Comment #1a

We are unclear as to what public review is sought by the date of January 26. Project materials posted online appear to rely upon a 2015 programmatic EIS the covers coastal restoration activities for the entire United States, and also include an internal USFWS memorandum which appears to call for the use of a NEPA categorical exclusion at the project level because approval of the Project would constitute only a "minor" revision to an existing Comprehensive Conservation Plan ("CCP") for the Humboldt Bay NWR Complex. This CCP was not linked to the Project materials posted online and we have not had the opportunity to review it under this timeline; we question whether the proposed Project activities, which involve physical restoration activities to restore some 48.6 acres of agricultural wetland "through placement of fill, excavation, and removal or lowering of exterior levees on Mad River Slough", have been reviewed in any document at a level of granularity appropriate to informing the public of the proposed Project's impacts and allowing for informed decision-making about the Project's impacts, feasible mitigation measures, and reasonable alternatives.

Response

In 2019, in compliance with NEPA, the U.S. Fish and Wildlife Service (Service) adopted the Programmatic Environmental Impact Statement (PEIS) for coastal habitat restoration activities developed by the National Oceanic and Atmospheric Administration Restoration Center (NOAA RC), which is the PEIS that was referenced in the public posting for Humboldt Bay National Wildlife Refuge's Mad River Slough Restoration Project. NOAA RC developed the PEIS in 2015 to evaluate coastal habitat restoration activities funded or implemented through its existing programs. The on-the-ground restoration activities evaluated in the PEIS are similar to, and often allied with, those implemented by the Service through its analogous programs. The Service institutes a consistent screening process for use of the PEIS. Project managers complete a "USFWS/NOAA RC PEIS Inclusion Analysis Form" to concisely determine and document if the proposed project activities and site-specific environmental consequences are within ranges analyzed in the PEIS, and that extraordinary, site-specific circumstances will not elevate negative project or activity impacts to a level of significance. This form is submitted for review to a Service team familiar with coastal restoration concepts and outcomes and committed to diligent application of the NEPA process. As part of the inclusion process, public outreach is required and is the basis for the Service posting the Mad River Slough Restoration Project information online for public comment.

Using the analyses provided in the NOAA RC PEIS and additional information as necessary the review team assesses and confirms that the proposed habitat restoration actions, including those funded through financial assistance actions, are within the range of alternatives and potential environmental consequences analyzed in the PEIS and will not have significant adverse impacts on the natural or human environments. Upon review team recommendation, the NEPA signatory authority for the requesting Service unit will sign and date the inclusion analysis form and notify the requesting program or project manager in writing of NEPA coverage for the proposed action(s). This analysis and authorization will be documented in project files maintained by program staff at the Service's Regional and Field Offices. Documentation of the Service's use of the PEIS for analysis and NEPA compliance for projects will be made available to the public.

In 2009, the Service prepared a Comprehensive Conservation Plan (CCP) and Environmental Assessment (EA) to guide management of fish, wildlife, plants, other natural resources, and visitor uses on the Humboldt Bay National Wildlife Refuge Complex (Refuge). The CCP's management strategies apply to all

lands owned and managed by the Refuge at the time of the CCP's release. All newly acquired lands must go through a minor revision of the CCP as required by the National Wildlife Refuge System Improvement Act of 1997 and Service policy to integrate CCP approved strategies into the management of these lands. Since the subject Caltrans property acquired by the Service was not included in the 2009 Humboldt Bay National Wildlife Refuge Complex CCP, a minor revision is required to formally revise the CCP. The minor CCP revision provides for the basic management of the newly acquired lands but does not cover the larger Mad River Slough Restoration Project. This project would then be covered by the PEIS and not the revision to the CCP. The CCP can be found online at: (link to CCP).

The federal action of the Service completing a minor CCP revision triggers NEPA analysis and is covered under the Service's Categorical Exclusion DM Part 516, 8.5 B (9), which is "Minor changes in existing master plans, comprehensive conservation plans, or operations, when no or minor effects are anticipated. Examples could include minor changes in the type and location of compatible public use activities and land management practices."

CFB Comment #1b

Reinforcing this point, it bears note that USFWS' Project-related documents appear to contemplate follow-on permitting by a large number of state and federal agencies, including the California Department of Fish and Wildlife, the North Coast Regional Water Quality Control Board, the California Coastal Commission, the U.S. Army Corps of Engineers, and the National Marine Fisheries Service. Specifically mentioned are the need for a Section 401 permit under the Clean Water Act, a consistency determination under the Coastal Act, a Section 404 permit under the Clean Water Act, and Section 7 consultation under the Endangered Species Act, in addition to local permitting. All of this begs the question of whether USFWS should proceed with this Project on the basis of a nationwide PEIS completed in 2015, absent project-level review.

Response

Gaining NEPA coverage for the Mad River Slough Restoration Project under NOAA RC's PEIS would only satisfy the Service's federal requirement of NEPA compliance. This PEIS does not meet the additional federal and state compliance requirements under the Clean Water Act (Sections 401 and 404), Endangered Species Act, National Historic Preservation Act, or any state or local requirements. The information included in the Project Summary of potential permits required for this restoration project was extensive and not all potential permits may be required, depending on the final engineering plans. However, we wanted to include all possible permits that may be required to allow for public transparency. The Service has initiated Endangered Species Act Section 7 compliance requirements for this project and will complete the process prior to construction initiation. Other permits will require completion of this NEPA process prior to accepting applications.

CFB Comment #2

It is our understanding that the USFWS has informally met with several Farm Bureau members involved as "Lanphere Stakeholders", who have articulated specific environmental concerns in writing. Those stakeholders have set forth particularized concerns about health and water quality impacts – not unimportant questions for shellfish operators – as well as changes to the navigability of Mad River Slough. Additional concerns put before USFWS have included road and traffic impacts, and the potential for erosion and/or damage to a bridge abutment. Finally, questions have been raised about the USFWS' intent with respect to public access in the area. USFWS appears to have provisionally answered some of these concerns in an October 26 letter, which we see as setting forth bulletized answers that should manifestly be a matter of a formalized NEPA document. Those bullets include mention of a "hydro-dynamic model" to address water quality impacts; a description of 5-10 truckloads of fill gravel to

stabilize road use as a result of truck traffic; and "an informal alternatives analysis" developed to guide the planning of management and restoration actions for the parcel.

Response

Lanphere Road from Janes Road to the Refuge access gate is a public road maintained by the Humboldt County Department of Public Works. The Service is entitled to fair use of the public roadway. Traffic during construction will be minimal and temporary. The estimate for gravel transport to the project site is 100 CY of gravel and mobilization/demobilization of heavy equipment. The Service estimates about 15 truckloads of material will be hauled on Lanphere Road to support the project. The Service does not anticipate damage from this low level of traffic. Additionally, the anticipated amount of construction traffic is minor compared to the amount of daily local traffic.

Lanphere Road west of the Mad River Slough is a public road that has not received regular maintenance as needed. The stretch between the neighborhood mailboxes west to the Refuge access gate is in very poor condition. This section of road lays adjacent to the northern protection levee of the project and lends itself to flooding due to it being low laying and without proper drainage. As part of the project, the Service will regrade and gravel this section of road, maintaining the existing road surface elevation, and restore proper drainage away from the roadbed.

The Service does not anticipate an increase in public traffic due to this project. For example, there will be no viewing points along the road developed for the public to view the site and the Service is not providing any expanded or new public access to this area. Four tours of the newly restored area will be given annually, but these are not additive. Rather they will be included in tours that are already given at Lanphere Dunes during the year. This area will also remain closed to waterfowl hunting, including from the slough side.

In response to concerns about the bridge abutment raised by adjacent landowners, the Service modified the proposed grading plan to exclude levee lowering for a distance of 200 feet south of the existing bridge abutment and the abandoned abutment for the previous bridge. The new protection levee will tie-into existing ground and not require any excavation near the existing bridge abutment. Hydrodynamic modeling indicates that the proposed project will not alter flow velocities or scour potential at the bridge abutments.

Regarding potential for impacts to water quality or navigability, see response Humboldt Bay Oyster Company comments #1 and #5 respectively.

Please see response to Comment #1a regarding the Service's level of NEPA analysis.

<u>Humboldt Bay Oyster Company (HBOC) Comment Letter</u>

HBOC Comment #1

I share the goal of restoring the naturally functioning system to your newly acquired property and have concerns of its potential short-term, and perhaps longer-term, impacts to the slough during and after the construction phase:

During excavation of the deep intertidal channels suspension of sediments will occur and enter the waterway. The increase in suspended sediments into the slough will impact water quality and potentially be problematic for the oyster seed operation directly north of the Project. This degradation of water quality could greatly impede the operation's successful larval stages. Increased suspended sediments will also affect sunlight penetration and negatively impact submerged aquatic vegetation such as eelgrass. Sediment settlement on existing eelgrass beds, if heavy, could smother eelgrass meadows in the

immediate area. I request a monitoring program be initiated before construction of the Project to establish baseline data on suspended sediments and adjacent eelgrass and continue that monitoring for at least three months after Project completion.

Response

To minimize construction-related impacts on water quality, the Service will implement mitigation measures in Appendix D of the PEIS (online link to PEIS). Specifically, the measures listed under "Activities that minimize impacts from construction" and "Activities that reduce disturbance to vegetation and soils" will be implemented to reduce any temporary water quality impacts. No sediment will be discharged from the site during construction.

The Service's hydraulic modeling indicates that, after breaching the levee, water velocities associated with normal tides will be too low within the Project Area to erode sediment. A series of sills within the project area retain permanently flooded shallow pools that will retain sediment.

Baseline suspended sediment levels in Mad River Slough are high. The USGS conducted long-term monitoring of suspended sediment in Mad River Slough from 2016-2019. Average suspended sediment concentrations were 17 mg/l and exceeded 50 mg/l on multiple occasions. Salt marsh restoration projects such as the proposed project create sediment sinks that trap and reduce fine sediment supply (Curtis and Thorne, 2019)[1]. Thus, the project is expected to reduce suspended sediment concentrations.

In response to landowner concerns, the Service will install and maintain two recording turbidity sensors prior to and after construction. Sensors will be located in Mad River Slough upstream and downstream of the project area.

HBOC Comment #2

The sediment load will also likely impact water quality of the oyster Growing Area south of the Project in Mad River Slough. This Growing Area is classified by the California Department of Public Health, Environmental Management Branch based on many years of sampling and existing and predictable water quality conditions. Newly introduced variables present unknowns to the area and will pose unpredictable changes to the classification and may put this classification/certification in jeopardy. The Shellfish Protection Act (1993) of the California Water Code protects California's shellfish growing areas from degradation from point and non-point sources. I am hopeful these impacts will be temporary and therefore would not necessitate the formation a Shellfish Technical Advisory Committee to investigate and correct these impacts. However, to assure these impacts are temporary or nonexistent, I request a water quality monitoring program be conducted prior to construction and for six months post-construction of the Project.

Response

Please see response to Comment #1

HBOC Comment #3

I anticipate that breaching the levee and lowering its height will lead to gradual erosion of the soft fill soils and over time it should be expected that the gap in the levee will grow wider and its elevation further reduced due to the natural weathering via wind and tide. These gradual impacts should be

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[1] Curtis, J.A., Freeman, C., and Thorne, K., 2019, Early results—Salt marsh response to changing fine-sediment supply conditions, Humboldt Bay, CA: Reno, Nev., Federal Interagency Sedimentation and Hydrologic Modeling Conference (SEDHYD 2019), June 24–28, 2019, 15 p.

anticipated and modeled by the Project planners yet are not stated in the Project Summary nor mitigated for.

Response

Salt marsh restoration projects such as the proposed project create sediment sinks that reduce fine sediment supply (Curtis and Thorne, 2019)[1]. Thus, the project is expected to reduce suspended sediment concentrations.

The Service conducted similar levee lowering at White Slough in southern Humboldt Bay. Marsh vegetation rapidly colonized the lowered levee. No significant erosion of the lowered levee surface has occurred despite exposure to frequent wave attack by north-wind generated waves along a long fetch length.

HBOC Comment #4

In addition to sedimentation, Project construction will also release new nutrient loading from the project site and the associated biological oxygen demand produced when these soils are disturbed. This area is seasonally flooded and fed with a spring that attracts waterfowl and the area has historically been utilized to graze cattle and produce hay feed. These activities have created very rich, fertile soils that once disturbed by construction activities will inevitably release these nutrients into the waters of Mad River Slough resulting in perhaps longer-term eutrophication and increased oxygen demand stresses on the waterway. I request adding oxygen and nutrient monitoring to the Project.

Response

Salt marshes are widely recognized as carbon sinks that trap and sequester decaying vegetation. Additionally, salt marshes are effective at removing nitrogen from the water column. Decay processes in salt marshes occur anaerobically, which does not create a biochemical oxygen demand.

HBOC Comment #5

While modeling can be very helpful in predicting whether the planned modification of the slough will have impacts to the navigable channel of Mad River Slough and make it impassable due to shoaling, scouring or sediment deposition, there is no guarantee that this Project will not impede boat traffic by changing the course and depth of the channel. This channel is the only means of access to my farm in Humboldt Bay from the Lanphere Road boat dock and shoreside processing/shipping. If the Project were to make the navigable waters of the state impassable and eliminate access to my farm leases it would strangle my operation. Therefore, I request additional monitoring of the slough channel that establishes the current conditions as a baseline and watches for changing conditions due to the Project that could restrict boat traffic and that would establish corrective actions requiring the USFWS to reestablish the navigable channel in the event the channel is made impassable.

Response

Our modeling currently indicates that no impacts will occur to navigation from sedimentation. Flow velocities are highest in the navigation channels at lower tides when flow is concentrated in the channels. The high velocities are able to mobilize any sediment and keep the channels open. To further characterize the channel morphology and associated flow, we plan to conduct a sonar survey of the thalweg of the main channel between the oyster docks north of Lanphere Road south to the abandoned railroad crossing and share the results with landowners.

HBOC Comment #6

Construction equipment and activities will put additional pressure on Lanphere Road further degrading its quality and safety. Lanphere Road is not only unpleasant and damaging to vehicles and drivers but it is unsafe due to its narrowness and steep shoulders. This road has already been heavily impacted by large trucks when a levee was constructed to protect a private parcel immediately south of the Project. This "cross dike" was built using heavy equipment and many dump truck loads of large rubble over many weeks to establish a protective wall against slough intrusion onto the private property in anticipation of the Wadulh Lagoon construction project. These heavy loads further damaged the road. This Project will put additional stress and damage on Lanphere and, therefore, should be repaved after construction as a show of good faith to the neighbors and stakeholders impacted by these two associated activities.

Response

Please see response to **CFB Comment #2.**

HBOC Comment #7

The Project will build a levee on the north end of the project site that will protect the public roadway and adjacent private property from tidewater flooding. It has been verbally agreed that it is the responsibility of USFWS to construct and maintain adequate drainage/flood control of this section of roadway along the new levee during and after construction. I request that this agreement be confirmed in a written enforceable agreement.

Response

The protection levee has been relocated to a position about 25 feet south of Lanphere Road. An existing ditch system will be mucked out. A culvert with a flap-gate will be installed in the protection levee which drain the low-lying area to the marsh. The ditch is currently permanently flooded by groundwater and will remain so after construction.

The Antideficiency Act prohibits federal employees from making or authorizing an expenditure, or creating or authorizing an obligation under, any appropriation or fund in excess of the amount available. This would include an agreement that would formally commit the government to long term maintenance. That being said, the Service intends to provide long-term maintenance for the levee and the associated drainage ditch next to the levee, subject to annual appropriations.

HBOC Comment #8

There are three areas along the Project's existing levee that have historical piles of automobile parts (axles, wheels, etc.) visible from the slough that were likely used to repair or "firm up" weak or failing areas of your property. I believe it is the perfect time to remove those piles of debris while the Project is in its construction phase and the equipment is on location. Please add removal of those debris piles to the Project to further enhance the project's goals of environmental enhancement.

Response

If the Service encounters debris during the lowering of the levee, it will be removed and disposed of offsite according to current laws. The Service will work with the commenter to identify where these debris piles are located so that removal can be incorporated into final construction plans.

HBOC Comment #9

There is great opportunity for this project to integrate a native oyster restoration component to the design. The local native Olympia Oyster population and their associated ecosystem services in Humboldt Bay is limited by adequate substrate for the larval stages to settle upon. Adding hard substrate such as rock, concrete, or oyster shell to the deeper channels of the Project (-2' to +1' tidal elevation) is an easy,

cost-effective way to add scarce native oyster habitat and enhance its natural local population and related water quality improvement. Natural background larval production is adequate to seed these added substrates with a "natural set" of native oysters that would build into larger oyster reefs over time.

Response

The Service is interested in exploring this option during restoration efforts. The Service will consult and coordinate with local oyster farmers to determine the specifics needed to support local oyster populations within the project area. The Service's preference would be to use natural oyster shell if available. Another alternative is to employ constructed reef balls, which have been used elsewhere to re-establish oyster beds. This effort may require permitting which is not included in this project.

<u>Scott Sterner Comment Letter</u>

Sterner Comment #1

Access- the road leading to the project is in poor shape with numerous large potholes/craters....it is our only access to our job site. With increase of traffic due to construction and then the proposed public tours and public interest in viewing the site, will but an even heavier use to this road since there are relatively no turn-around points past Siedel Rd.

Response

Please see response to **CFB Comment #2.**

Sterner Comment #2

Are the new tidal channels and ponds based upon what occurred there naturally/historically and what or how will you stabilize the edge of the marsh along the channel to minimize tidal and wave erosion?

Response

Prior to reclamation, much of the project area consisted of salt marsh, tidal channels, and areas of open water. Tidal channels drained through a network of channels that flowed into Mad River Slough through the property south of the Project Area. Due to ground subsidence, the need to protect adjacent properties from flooding, and logistical difficulties of removing slough-front levees, it is not possible to recreate original conditions. The design plans are intended to create the form of a natural salt marsh edge on Mad River Slough while maintaining flood protection and minimizing disturbance.

Based on experience with similar projects around Humboldt Bay, the marshes will be rapidly colonized by native salt marsh vegetation. The roots of salt marsh vegetation will provide resistance against erosion.

Most of the existing levees on Mad River Slough will be left intact, which will prevent wind-generated waves from entering the project area from Mad River Slough. A series of tidal ridges within the project area will limit wind fetch length, which limits the strength of waves that can be generated within the Project Area. In addition, the new protection levees incorporate shallowly sloped benches that extend into the Project Area from an elevation above Mean Higher High Water down to Mean Low Water. Similar benches will be constructed inboard of the existing Mad River Sough levee. The shallow benches are designed to cause waves to break and deposit sediment on the benches, which protect the levees from erosion.

Sterner Comment #3

How and where will the source of marsh plants originate and will there be some sort of cover crop to stabilize the area before it is opened to tides?

Response

Previous studies of saltmarsh restoration in the area indicate that native saltmarsh plants start to passively colonize areas with surface elevations between 6.0 and 8.0 feet NAVD within the first year and have complete coverage within 3 to 5 years. Areas above 7.5 feet NAVD will be seeded with a native pasture mix.

Sterner Comment #4

What sort of impact on water quality will this have initially with increased organics from the disturbance of the restoration process?

Response

The Service does not expect that vegetation disturbed during construction will create water quality impacts. Organic material removed during construction will be placed as shallow fill in low areas (below MHHW) located at the western end of the project area and covered with soil fill. The vegetation will be sequestered in the newly established marsh.

Please see response to Comment #1 of the Humboldt Bay Oyster Company's letter for more water quality information.

<u>William and Kimberly Rich Comment Letter</u>

Rich Comment #1

Successfully rearing of larval shellfish species requires water quality control. Although our intake is screened, we especially hope you can develop a plan to manage any turbidity increases. Bacteria attach to suspended sediment and are a concern. We wonder if other water quality measures could be affected, such as PH, salinity, temperature, and flow rates. Shoaling of the heavy fraction of substrate that will become mobile from the newly graded and filled surfaces within the intertidal prism is a concern not only immediately after the breach but more long term and as the levy top deflates and erodes into the slough channel. Maybe the portion of the levy that will remain can be engineered to erode towards the west and not onto the lower tidal muds. We hope that the project will not impact the naturally broad diversity of algae in this unique waterbody. We trust that you and your supporting agencies have the same concerns.

Response

Please see response to Comment #1 of the Humboldt Bay Oyster Company's letter for water quality information and response to Comment #3 for information addressing erosion concerns.

The hydraulic design achieves the intent of allowing flow to overtop the slough—front levees from the east side during tides above 7.0 feet. Flow will enter the lagoons and then travel through the levee breach as tides lower. Flow velocities within the project area are expected to be sufficiently low to allow any entrained sediment to settle and be captured in the lagoons or by marsh vegetation.

Rich Comment #2

This may be a rather unique project site in terms of others that have been completed around the bay. This project is adjacent to several mariculture businesses, with several full time residences living within 100 feet of the project boundary. Should we have a discussion about adverse conditions from construction traffic, timing, and noises to this residence? What about the possibility of creating an

attractive nuisance by this project. We hope that the ponding locations are not near the northern boundary. While we have great respect for the waterfowl and their habitat, we'd rather not have the ponds right up against the area of Lanphere Road. This will encourage trespass, illegal hunting, and dangerous discharge of firearms. Any new levy to be constructed along Lanphere Road should not increase unauthorized access to these public lands. Maybe consider placing any of the really attractive project elements, like the ponds, away from Lanphere Road as much as possible.

Response

Construction typically takes place Monday through Friday, 7:30am to 5:00pm. Further discussions with those potentially impacted may be needed to refine timing.

There will be a permanently flooded drainage ditch between Lanphere Road and the new protection levee.

Please see response to Comment #6 of the Humboldt Bay Oyster Company's letter for information addressing further road maintenance and public access.

Rich Comment #3

How do you keep the turbidity from increasing during and shortly after construction? What are the baseline turbidity levels anyway? How far will the volume of slough water being discharged, from newly graded erosional surfaces of the project area, go up and down the slough? How much mixing will occur? Obviously, we are concerned about turbidity plumes reaching our shellfish nursery intake point. I suppose this is inevitable given the scope of the project. Maybe alternatives could be looked at? Does the remainder of the levy need to come down to 7 feet?

Response

The Service's preliminary hydraulic modeling indicates that, after construction, water flowing out of the project area will move to the south as the tide drops. A series of sills within the project area retain permanently flooded shallow pools that will capture sediment. Because the pools will not drain out, sediment will be retained within the project area. Also, tidal marshes are characterized as sediment sinks. Flow velocities within the project area will be sufficiently low to allow suspended sediment to deposit from the water column resulting in improved water quality with Mad River Slough. Please see responses to Comment # 1 of the Humboldt Bay Oyster Company and Comment #3 from Scott Sterner for additional information addressing soil erosion.

Because the Service is utilizing NOAA's PEIS, an informal alternatives analysis was developed to guide the planning of management and restoration actions for the project parcel. The Service evaluated five alternatives including the following:

Alternative 1 - No Action

- Not chosen because of potential impacts to adjacent properties and private landowner/Refuge driveway in event levee fails, which is considered likely.
- Pasture has little habitat value to wildlife in current condition.

Alternative 2 – Maintain Status Quo

- Requires a major investment to bring in 11,000 CY of fill and 2,500 CY riprap to repair and stabilize levee.
- Importing fill would have impacts on Lanphere Rd.

- Not selected because pasture has little habitat value to wildlife in current condition, high implementation costs, and potential impacts to Lanphere Road.

Alternative 3 – Muted Tidal

- Requires rebuilding and stabilizing levee, so similar issues as Alternative 2.
- Some small gains in habitat for birds and fish within the converted pasture area.
- Not selected because of limited improvement in habitat value, high implementation costs, potential impacts to Lanphere Road, and failure to address long-term impacts of sea level rise.

Alternative 4 – Full Tidal with Setback Levee

- Construct setback levee to create a limited adaption space for Sea Level Rise (SLR),
- Creates barrier between Mad River Slough and Lanphere Dunes.
- Setback levee would require at least 65,000 CY of fill to build.
- From previous experience, finding and importing clean fill is difficult and cost prohibitive.
- Importing this much fill would have major impacts to Lanphere Rd.
- Provides for a mosaic of habitats for the benefit of a wide variety of fish, wildlife and plants.
- Not selected because high implementation costs, potential impacts to Lanphere Road, and limiting accommodation space for sea level rise.

Alternative 5 – Full Tidal with Natural Shoreline – Chosen Alternative

- Costs less to implement than alternatives 2 through 4, no import of fill needed to restoration site.
- Restores full tidal access to historical tidelands and restores a natural shoreline on Mad River Slough.
- Protects neighboring properties and access to private landowner/Refuge from flooding.
- Provides for a mosaic of habitats for the benefit of a wide variety of fish, wildlife and plants.
- Plan allows for all materials needed for protection levees, saltmarsh plain, and road fill to be gathered onsite without the need for fill to be imported.
- Selected Alternative because it provides best improvement in habitat quality, meets the Service's management goals, is a Nature Based Solution and is less expensive than other alternatives.

Rich Comment #4

Issues related to the surface of Lanphere Road, Lanphere bridge abutment and the proposed tidal levy on the west side of the road seem unanswered. We want the project design to not cause impacts to the southwestern corner of the Lanphere Road Bridge.

How will the levy be configured at this location to not cause erosion around this side of the bridge?

The surface of Lanphere Road, especially west of the bridge is in poor condition. This serves some positive outcome though as it slows and discourages traffic by our property. I would rather the elevation of the road in this are not be raised. Currently trucks and cars are below the grade of our farm and drivers are not able to look directly over to our work areas. I would not want to feel compelled to erect a privacy fence in the event the road was raised. Doesn't seem in keeping with the rural refuge scenic qualities. We are fine if you leave the Lanphere Road surface, west of the bridge, at the same location and in the same condition it is currently in; however, an assessment needs to be made regarding the potential for future flood events, along this western portion of Lanphere Road, due to the USFWS project.

Response

In response to concerns about the bridge abutment raised by adjacent landowners, the Service modified the proposed grading plan to exclude levee lowering for a distance of 200 feet south of the existing bridge abutment and the abandoned abutment for the previous bridge. The new protection levee will tie-into existing ground and not require any excavation near the existing bridge abutment.

The protection levee has been relocated to a position about 25 feet south of Lanphere Road. An existing ditch system will be mucked out. A culvert with a flap-gate will be installed in the protection levee which drain the low-lying area to the marsh. The ditch is currently permanently flooded by groundwater and will remain so after construction. The Service intends to provide long-term maintenance for the levee and the associated drainage ditch next to the levee, subject to annual appropriations.

As part of the project, the Service will regrade and gravel the portion of Lanphere road between the mailboxes and the Refuge gate, maintaining the existing road surface elevation, and restore proper drainage away from the roadbed.

Please see responses to Comment #6 and # 7 of the Humboldt Bay Oyster Company's letter for information addressing further road maintenance and drainage information.

Rich Comment #5

Importantly we do not want the refuge, as our neighbor, to encourage, either directly or indirectly the public from loitering around or on Lanphere Road at the bridge or your gate areas. I am regularly removing fresh trash from these locations and having to discourage people from parking and wanting to stay. We have experienced theft at this location. Consider removing the USFWS/Refuge gate to the Dunes parking areas, please. This would limit the use of our private parking area and private road, as a turn around and thorough-fare for USFWS visitors and other public users. The gate to the refuge property is never locked and it is curious what service is provided by having it at the current location?

Response

The gate is intended to provide security and regulate access to not only Service lands, but to private homes beyond these lands. Lanphere Dunes is accessible by permit only and the gate provides a means of regulating that access. With no gate, it may encourage more traffic down Lanphere Road because it would provide open access to an unstaffed parking area.