FINAL INTEGRATED GENERAL REEVALUATION REPORT AND ENVIRONMENTAL IMPACT STATEMENT

SAN FRANCISCO BAY TO STOCKTON, CALIFORNIA NAVIGATION STUDY

APPENDIX I - PERTINENT CORRESPONDENCE - PART 2 PUBLIC COMMENTS & RESPONSES

JANUARY 2020

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Commenter	Comment	Corps Response
San Francisco Baykeeper (Baykeeper)	These comments focus on the DEIS's faulty analysis of the impacts from the change in X2 and compliance with the conductivity water quality objective. In the DEIS, the Corps determined that an impact would be significant if it changed the X2 more than 1.0 km. As stated in the DEIS, X2 is defined as the location where the salinity at the estuary bottom is two parts per thousand. The State Board has adopted a water quality objective that requires that freshwater inflows to the Bay be sufficient to maintain X2 at specific locations for specific numbers of days each month during the spring (February through June). The DEIS states that this standard was used in the Los Vaqueros Expansion project environmental analysis. (DEIS at 4-23.) This standard of significance appears to be arbitrary and is not correlated to the actual impact on any particular species of fish or wildlife. For imperiled fish and wildlife species, of which there are several in the Project area, any change in X2 may be too much change. Moreover, if every agency approving a Project allows X2 to change up to 1.0 km, the cumulative change in X2 will quickly become very significant. The Corps must consider its significance standard in light of the cumulative impacts from other projects on X2.	The USACE does not believe that the X2 change of up to 1 km is an arbitrary standard of significance. This X2 criteria was first used by the USBRec and the CDWR in 2003 for the Environmental Water Account program and in 2010/2017 for the Los Vaqueros Reservoir EIS/EIR. So it has previously been generally accepted by the water user and environmental community as a reasonable test of project impact. It is commonly understood that estimation of X2 using salinity stations or autoregressive equations is imprecise and error can be on the order or significantly larger (Hericks, et, al 2017; MacWilliams et al. 2015) than the 1 km significance threshold that was applied for this and other projects. Though X2 is perhaps the best available metric for ensuring Delta operations are consistent with protection of trust species, a review of the 2014 Workshop on Delta Outflows and Related Stressors Panel Summary Report (Reed, Et Al, Delta Stewardship Council, 2014) indicates that X2 is weakly correlated to species' abundance. This citation does provide several graphs (Figures 3 and 4) for Delta Smelt / Long Fin Smelt and that appear to show that changes to X2 on the order of 1 km would not significantly affect species abundance. Similarly, the literature review and Figure 23 of Technical Report 90 prepared by the Interagency Ecological Program for the SF Bay/Delta Estuary (2015) provides a summary of the weak relationship between X2 and delta smelt population. In 2017, the Bureau of Reclamation requested re-initiation of consultation on the 2008 Biological Opinion for coordinated long-term operations (Sep 7, 2017 BurRec letter to Paul Souza) requesting in effect a relaxation of October X2 requirement to maintain 74 km and proposed a 81 km target. Based on the BurRec modeling, this proposal would effectively move the October X2 target more than 6 km upstream with no expected impact on delta smelt. Given the weak link between delta smelt numbers and X2, and the actions of other agencies that have either used the 1 km significance threshold or argued for even greater X2 displacement with no significant effect, the USACE believes that a 1km X2 displacement significance threshold is sufficiently protective and not an arbitrary standard. Further, the predicted project effects on X2 are much less than 1 km. It is possible, but unlikely, that future projects might apply a 1 km X2 change significance level primarily because the general lack of water availability for additional significant diversion from the bay delta. The most significant cumulative impact over the next 50 years is the potential change in X2 that results from relative sea level rise. This report predicts that without adjustment to net delta outflow, X2 will move approximately 4 km upstream over the next 50 years as sea level rises. This amounts to an average of approximately 0.1 km per year increase in X2 which is cumulatively much greater than the 0.27 km impact from this project that occurs in critical water years.
Baykeeper - 2	In addition to impacts to fish and wildlife from the change in X2, changes in the Bay-Delta's salinity field the ability of Delta communities to withdrawal water for municipal drinking water and agricultural use. During the last drought when Temporary Urgency Change orders were in effect, salinity conditions changed so much that the water at some intakes almost became unusable for drinking water uses. Moving X2 any distance to the east will make it much harder to maintain salinity standards for fish & wildlife, agricultural, or municipal use, in the future and will require greater net Delta outflow (or involve greater risk to human and other populations). The DEIS's arbitrary standard of significance does not adequately consider the harm that moving X2, even what may seem like a minor amount, will have.	The standard of significance for X2 movement is the same as used by the US Bureau of Reclamation, Contra Costa County Water District for the Los Vaqueros Reservoir (2010). The impact from the Los Vaqueros project was reviewed by the water supply and environmental communities and determined to be acceptable. The USACE believes that the small impact of this navigation project on water users and the environment are not significant based on past projects with similar impacts. Contrary to the commenter's statement that "Moving X2 any distance to the east will make it much harder to maintain salinity standards", the modeling performed by the Corps shows that small changes in X2 result in minor changes to salinity at the water intake structures. Under almost all modeled conditions, the change in chloride was

Commenter	Comment	Corps Response
		less than the significance thresholds (5% or 5 mg/L) used by this project and prior projects. Under the most extreme conditions (critical water year), there was an additional two days of non-compliance with conductivity standards at Emmaton from 64 to 66 days exceeding the standard. The impact of X2 displacement on Trust Species is being considered by both USFWS and NMFS.
Baykeeper - 3	Finally, the Draft EIS discloses that the Project will result in the Emmaton conductivity water quality objective being violated one additional day per year, on average. (DEIS at 4-21 – 4-22.) However, the DEIS fails to analyze the impact of this change because the State Water Board waived this standard in 2014, during an extreme drought. (*Id*.) With this conclusory statement, the Corps has wholly failed to meet its duty to analyze whether the change in the Emmaton objective would, in fact, harm agricultural users or cause any other impact, including fish and wildlife. The Corps merely adopts the State Board's waiver of this water quality objective, an action that taken with minimal administrative or public review in response to extreme drought, not because the standard was no longer necessary to protect beneficial uses. The Corps has an independent duty to analyze the impact of the Project and cannot shirk that responsibility merely by pointing to the State's emergency waiver of the Emmaton objective.	USACE has revised the Final report (Section 4.1.3) to acknowledge that Emmaton conductivity objective may be exceeded for an additional day or two during years with conditions similar to 2014. The final report (Section 4.1.3) also provides an assessment of the impact of this additional time on affected water users. Given that the additional period of exceedance occurs only during critical year periods (<20 percent of all years), the overall impact is less than a single additional day of exceedance per year on average.
Department of Water Resources (DWR)	As currently described and as discussed further below, the Project may have significant adverse effects on water quality, fish and wildlife, and State Water Project (SWP) operations in the Sacramento-San Joaquin Delta (Delta). With the above in mind, DWR offers the following specific comments regarding Project impacts:	Please see responses to comments below.
DWR – 2	**Dredged Material Quality** First, DWR believes utilizing updated scientific information is necessary in order for USACE to analyze potential impacts related to dredged material quality and mitigation activities utilizing such material. The majority of sediment contamination studies cited in the DEIS were completed in the late 1980s and early 1990s. USACE should include updated information from existing programs, such as the Bay Regional Monitoring Program, and other newer research studies in the DEIS analysis. Due to the use of outdated scientific information, the potential impacts of the Project, specifically sediment contamination, remain unknown. Additionally, the DEIS analysis claims that sand deposits may be exposed to anthropogenic sources of pollutants but typically do not accumulate significant pollutant concentrations. The DEIS does not provide any supporting citations, or other analytical justification, for that claim, and most available scientific information contradicts that claim. For example, hydrophobic chemicals, like pyrethroid pesticides, readily bind and accumulate in sediment. These pesticides are known to have adverse effects on the estuarine foodweb. For this reason, further analysis of the impact of accumulated anthropogenic sources of pollutants is warranted. Related, the DEIS indicates that there are high levels of chromium at a depth of -47 Feet mean lower low water (MLLW), but it does not describe whether the dredged materials will contain high levels of chromium. Additionally, repeated wetting and drying of materials containing mercury, which may occur in restored wetlands, is known to increase the concentration of methylmercury. Since the Project is proposing to use dredged materials for wetland creation and restoration, its analysis should discuss the existing restrictions and testing procedures for using dredged materials to restore wetlands. Additionally, DWR recommends that the Project DEIS include updated dredge material contamination test results in the final EIS.	For the final report, the USACE has added updated information from San Francisco Estuary Institute (2019) as well as USGS studies (2018) and Corps studies (2015) that discuss bay/delta sediment quality, and the fate/transport of methylmercury in the bay/delta in different settings. These edits are in Section 2.2.3.4 and 2.2.3.5, Statements regarding anthropogenic contamination of dredge sediments are based upon the USACE's extensive experience testing and assessing the contamination of dredge sediments nationwide. Based on the historical, and more recent data presented in the draft report, the Corps does not believe there is high risk in sediment contamination to -38 feet MLLW. In the event that some material is found to have high levels of chromium above the levels acceptable for beneficial reuse, this material will be disposed of at alternative locations. The beneficial reuse sites have their own monitoring plans and sediment quality requirements. The reuse site operators have extensive monitoring and data already available as the sites are in use currently, and are using dredged material from the Bay-Delta. Once the acceptable quality sediment is offloaded to the beneficial reuse sites, they are responsible for any related effects. Testing dredge sediments is typically done no more than 3 to 5 years prior to dredging. The USACE performs such testing as part of the engineering phase of the project which is after the Final EIS is available. The USACE uses national and local sediment quality standards to evaluate the suitability of dredge materials for safe placement at upland and aquatic sites.
DWR 3A	**Fish Habitat and Entrainment**	In addition to the D-1641 water quality objectives for Municipal & Industrial Beneficial Uses, D-1641 includes water quality objectives for Fish &Wildlife, including requirements in Suisun

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	The Project also has the potential to significantly impact the SWP's ability to manage water quality for fish and wildlife regulatory requirements. However, the DEIS only analyzes increases in salinity at State Water Resources Control Board Water Rights Decision 1641 (D-1641) compliance stations for municipal and industrial (M&I) uses, which may seem small from a modeling perspective. But, the Project might increase salinity upstream of Pittsburg and impact the effectiveness of the Suisun Marsh Salinity Control Gates operation, which could result in violations of D-1641 Delta salinity standards and/or reductions in SWP exports at the Banks Pumping Plant to avoid such violations. Additionally, these changes are indicative of potentially larger changes to downstream areas such as Grizzly Bay which is an important fish habitat for the Delta Smelt Resiliency Strategy (Hobbs, et al, 2017). For these reasons, water operations and water modeling analysis should be expanded to include potential impacts on fish and wildlife salinity objectives.	Marsh. The water quality effects analysis looked at water quality conditions at the D-1641 WQ stations located at Emmaton and Jersey Point which are both upstream of Pittsburg. There were no impacts at Jersey Point and two additional days of exceedance of the WQ objectives at Emmaton during the 2014 critical year simulation. Salinity impacts to Suisan Bay and Suisun Marsh were evaluated through an extensive analysis of the Low Salinity Zone (LSZ) included in Section 7 of the Hydrodynamic and Salinity Intrusion Modeling report.
DWR – 3B	**Fish Habitat and Entrainment** Furthermore, the Project work windows may impact adult Winter-run Chinook Salmon. Studies performed by the United State Fish and Wildlife Services (USFWS) and California Department of Fish and Wildlife (CDFW) show that for the years 2003-2014, only 6 percent of adult Winter-run Chinook had spawned and only 14 percent of the total Redds had been created by June 7. The studies also show that approximately 45 percent of the federally listed endangered adult winterrun Chinook Salmon adults have spawned and approximately 70 percent of the Redds have been created by the end of the first week of July. To avoid impacts, DWR recommends the Project work window to begin no earlier than July 1 and extend no later than the end of November. If this recommendation is not accepted, the environmental analysis should be revised to include potential impacts on Winter-run Chinook due to the Project activities performed within the work window. Finally, the DEIS states that standard practices would reduce the potential of entrainment during dredging for Dungeness crabs, pacific herring, steelhead, salmon, and Sacramento Splittail. It also states that mechanical dredging will greatly reduce the likelihood of entrainment of Delta smelt. The DEIS needs to analyze and support the conclusion that "standard practices" will reduce incidental take and use of mechanical dredging will reduce entrainment.	As stated on page 8 of the draft biological assessment (BA)/Essential Fish Habitat (EFH) assessment for the proposed project (Appendix G of the Draft EIS), the environmental work window is from August 1 through November 30 for Bulls Head Reach, and from June 1 through November 30 for Pinole Shoal channel. A discussion winter-run Chinook salmon life history and status is included in section 7.1.1 of the BA, and potential project effects on this species are discussed in section 7.2. As all winter-run Chinook salmon spawning occurs far upstream in the Sacramento River (i.e., below Keswick Dam), no winter-run spawners will be affected by project construction activities. Only late-migrating adults and juveniles may be affected during project construction, and USACE has determined that winter-run Chinook salmon are not likely to be adversely affected as described in section 7.2. We agree that the term "standard practices" is not well-defined in the draft report and also is confusing as it is used in separate instances in reference to reducing overall incidental take, turbidity effects, and entrainment. Therefore, we eliminated the use of this term entirely from the report and provided additional explanation as requested in section 4 of the report.
DWR – 4A	**X2 and Water Quality** The Project may cause the SWP to incur water costs to maintain the location of X2 in the Delta and meet Delta salinity objectives. The DEIS evaluation of Project impacts on X2 indicated that Tentatively Selected Plan (TSP) could cause an average annual increase in X2 between 0.17 kilometer (km) and 0.21 km during critical water years, based on an analysis of 2014 data. The simulation for the critical water year 2014 led to an X2 greater than 80 km (upstream of Collinsville) for more than 85 percent of the year. This also corresponds to Suisun Marsh, an important environmental restoration area, having a salinity higher than 2 ppt more than 85 percent of the year. DWR's analysis using historical data for the years 1996-2009 shows that a shift of X2 location by 0.1 km would require an average daily flow of 144 cubic feet per second, which is equivalent to an annual total of 26,000 acre-feet of water.	The USACE acknowledges that some additional water may be released to adjust X2 back to a pre-navigation project position after implementation of this project during specific times of some water years. However; this adjustment would not be continuous as may be suggested by the DWR estimation of an annual average quantity of 26,000 ac-ft/year. Operational flow adjustments due to this navigation project are expected to be infrequent because of the limited time that the spring and fall X2 criteria will be triggered due to this projects impact. For instance, the spring X2 requirement at Port Chicago is typically only in play during above normal and wet years when at the start of the month the preceding 14 day average X2 is less than 64 km. If the Port Chicago criteria is triggered, then the operators can either meet the requirement by making a prescribed discharge that would not be different with or without this project's expected displacement of X2 or they can chose to maintain X2 below 64 km by adjusting inflows or outflows. It is true that the frequency of triggering the Port Chicago X2 criteria would be slightly reduced by this project due to the small predicted increase in X2. The fall X2 requirement only applies for three months in the fall following wet or above average water years which occur less than 30 percent of the time. We acknowledge that there may be a small water cost associated with the project effect on X2 during those periods.

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		During other times of the year, the operators of the system would periodically have opportunities to "recover" the water not delivered due to project related X2 displacement by utilizing Article 21 and other operational flexibility to augment water deliveries.
DWR-4B	**X2 and Water Quality** The DEIS also evaluated potential changes in salinity at Emmaton and Jersey Point under 2014 conditions, which showed that the 14-day running average salinity at Emmaton caused two more days of D-1641 salinity standards exceedances. Offsetting these impacts would impose potentially significant water costs on the SWP.	The additional 2-days of exceedances at Emmaton increases the simulated 2014 duration of non-compliance from 64 days to 66 days. Because 2014 was a special case due to the waiving of the water quality objectives during 2014, this effect may not be representative of all critical water years. The project was not predicted to result in any change in compliance with the specific conductivity standard at Emmaton during either the below normal or wet water year evaluated.
DWR-4C	**X2 and Water Quality** For the above reasons, an estimate of water cost for maintaining salinity levels not to exceed the without-project conditions should be included in the environmental analysis. Similarly, we recommend that the EIS provide higher resolution of salinity effect (change of mean daily high tide salinity) in the following Baseline and compliance monitoring Stations: Sunrise (S21), Volanti (S42), Beldon (S49), National Steel (S64), Collinsville (C2B), and Goodyear Station (S35). Finally, to better assist in evaluating potential Project impacts, DWR also recommends that the EIS provide a map utilizing color gradient to show the expected salinity increases in both the Delta and Suisun Marsh.	As discussed in responses above, the USACE believes that the impact of this project on water supply operations are not significant and do not warrant mitigation given the relatively small change in flows caused by this project in relation to total SWP/CVP flows and the ability of the project operators to minimize the impacts of this project using existing operational flexibility.
DWR – 5	**Sediment and Turbidity** The Project impacts have the potential to significantly impact the Delta smelt, through changes in sediment and turbidity. The Delta smelt was listed as threatened under the Federal Endangered Species Act (ESA) and the California Endangered Species Act (CESA) in 1993. In 2009, its CESA status was changed to endangered. However, the negative impact of this Project on sedimentation and turbidity threatens to undermine both the remaining Delta Smelt population and ongoing habitat restoration efforts, such as EcoRestore. For example, sediment and turbidity play key roles in protecting Delta smelt (Feyrer et al 2007). Additionally, the Delta is a sediment supply-limited system, and dredging a sediment trap at Bulls Head will further reduce the supply of sand to marshes and beaches that are already eroding under current conditions (Barnard et al 2013) and result in reduced turbidity in the system. For these reasons, several State and Federal agencies are exploring sediment management strategies to improve fish habitat conditions, including the role and feasibility of sediment augmentation actions. Dredging a sediment trap is in direct conflict with these efforts. In light of the above considerations, DWR requests USACE to further analyze these impacts and, if mitigation is possible, set forth appropriate mitigation.	The project causes minimal changes to dredge volumes so it is expected to have minimal impact on sedimentation and turbidity in the study area. The Biological Opinion (BO) was provided by USFWS on October 3, 2019 and can be found in Appendix G. Environmental commitments related to threatened and endangered species are discussed in the BO. The BO contains one non-discretionary term and condition which is to implement the conservation measures listed on pages 2 and 3 of the BO. These conservation measures are already incorporated into the project description and will be followed. The proposed sediment trap is located at the western end of Suisan Bay which is downstream of prime Delta Smelt habitat. The sediment trap covers less than 5 percent of the width of Suisan Bay and less than 0.1 percent of the total surface area of Suisan Bay. Given the location and relative size of the sediment trap in comparison to the flow cross-section and total area of Suisan Bay, the sediment trap is not likely to drastically affect sediment transport and turbidity in the bay and thus would have limited to no impact on Delta Smelt.
DWR – 6	In conclusion, in order to fully evaluation the potential project environmental impacts and their significance, DWR reiterates the need for additional analysis and potential mitigation of the project impacts identified and detailed above. DWR requests copies of any subsequent environmental documentation related to the project, including any NEPA or CEQ documents prepared by USACE or any of its project partners and all legal notices related thereto.	All subsequent documents will be released via mailing and press release as with the draft EIS. The Corps believes the extensive salinity modeling completed indicates that there are less than significant impacts to delta smelt, and this is being coordinated with USFWS and NMFS. Impacts to water supply operations and water quality are also demonstrated to be minimal. The Corps is using the dredged material to contribute to habitat creation at the beneficial reuse sites, and therefore does not believe the compensatory mitigation is necessary for this project.
Department of Transportation (Caltrans)	***Bridges, Trestles, Culverts and Other Structures in Riparian Environments*** Some project level activities may affect riparian flow patterns upstream of bridges,	The proposed project does not include any increase or change to the channel's width or alignment. The deepening work follows the existing channel alignment and width. Effort will

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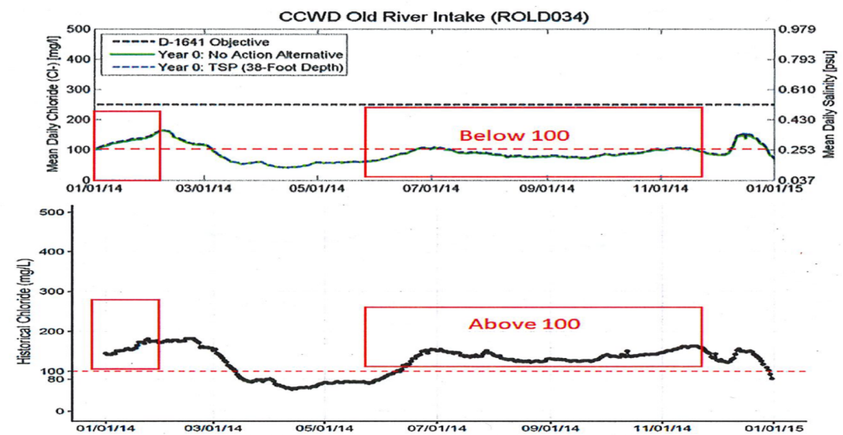
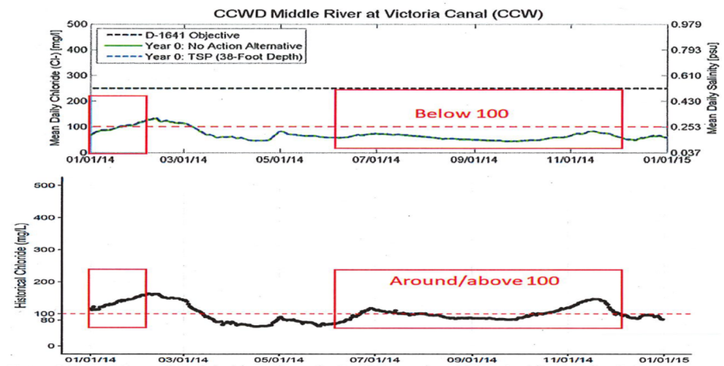
	trestles, culverts or other structures for which Caltrans holds responsibility. Please ensure your project level environmental documents include hydrological studies to determine whether such impacts will occur, and to identify appropriate mitigation measures.	be made to communicate with the Caltrans District 4 Structure Maintenance office when the project is in pre-construction engineering and design (PED) phase.
Caltrans – 2	***Structural and Engineering*** Operation within State bridge easement should be coordinated and supervised by Structure maintenance Office located in Caltrans District 4. Please contact at least two weeks before start of operation by calling Mr. Ken Brown, Supervising Bridge Engineer at (510) 286-0932 or by email kenneth.brown@dot.ca.gov. No equipment storage or material loading can be within 50 feet of state and/or local bridges. Structure Maintenance would like to receive any soil analysis or material testing done in proximate of bridges, please send a copy by mail and email to: Kenneth R. Brown 1801 30th Street Sacramento, CA 95816 Office: 510-286-0932 Cell: 510-520-8843 Fax: 916-227-8357 Email: kenneth.brown@dot.ca.gov	Coordination with Mr. Brown will be conducted as requested during PED.
Caltrans – 3	***Habitat Restoration and Management*** Project level activities related to habitat restoration and management should be done in coordination with local and regional Habitat Conservation Plans, and with Caltrans where our programs share stewardship responsibilities for habitats, species and/or migration routes.	The dredged material will be placed on already permitted restoration sites that have their own monitoring plans and completed environmental documentation.
Caltrans – 4	***Environmental*** Please provide feedback to the following questions: • What are the anticipated impacts to the Cullinan Ranch and Montezuma Wetlands? • How will the substrate of the channel be modified? • Will there be any equipment used to lessen the impacts from turbidity such as turbidity curtain? Lastly, this project may require formal consultation from National Marine Fisheries Service (NMFS), United States Fish Wildlife Services (USFWS), and California Department Fish and Wildlife (CDFW) and if there are listed or/dual listed species to be affected.	The dredged material will be placed on already permitted restoration sites that have their own monitoring plans and completed environmental documentation. The material will be the responsibility of the reuse sites once it is offloaded. They will place the material where it is needed in their phasing and continue to monitor through their programs and permits. The Corps is in consultation with USFWS and NMFS, the Biological Assessments were provided to them when the draft EIS was released on May 10, 2019. Additional detail regarding substrate and turbidity will be worked on during PED.
Caltrans – 5	***Encroachment Permit*** Please be advised that any work or traffic control that encroaches onto the State Right of Way (ROW) requires an encroachment permit that is issued by Caltrans. To obtain an encroachment permit, a completed encroachment permit application, environmental documentation, and six (6) sets of plans clearly indicating the State ROW, and six (6) copies of signed and stamped traffic control plans must be submitted to: Office of Encroachment Permits, California DOT, District 4,	This project is not expected to encroach onto the State Right of Way. The construction contractor will obtain any necessary permits if needed during PED. The proposed project doesn't extend beyond the current alignment and there is not anticipated encroachment to the State ROW. Information will be shared with the State during the pre-construction engineering design (PED) if there is any change at that time.

Commenter	Comment	Corps Response
	P.O. Box 23660, Oakland, CA 94623-0660. To download the permit application and obtain more information, visit http://www.dot.ca.gov/hq/traffops/develops erv/permits/ .	
Caltrans – 6	***Lead Agency*** As the Lead Agency, the U.S. Army Corps of Engineers is responsible for all project mitigation, including any needed improvements to the STN. The project's fair share contribution, financing, scheduling, implementation responsibilities and lead agency monitoring should be fully discussed for all proposed mitigation measures. Mitigation measures that include requirements of other agencies such as Caltrans are fully enforceable through permit conditions, agreements, or other legally-binding instruments under the control of the U.S. Army Corp of Engineers.	Mitigation is not proposed for this project. The Corps has implemented minimization measures within the proposed projects in order to offset the already less than significant effects. These measures include using a clamshell dredge, using the dredged material for beneficial reuse, and working within the USFWS-approved environmental work windows.
Contra Costa Water District (CCWD)	In the 2010 Final Environmental Impact Statement/Environmental Impact Report for the Los Vaqueros Expansion Project, CCWD used salinity significance thresholds as increases in monthly average chloride concentration of either 5 mg/L or 5%. The three-dimensional model used to simulate the hydrodynamic conditions with and without the Project showed that, although the Project would cause salinity increases at CCWD's intakes, these increases would be less than significant based on CCWD's salinity significance thresholds. However, in reviewing the predicted salinity plots we have noticed that the modeled without-Project salinity at CCWD's intakes was significantly fresher than historical values, as shown in the attachment to this letter. This unrealistic freshness could lead to erroneous conclusions about the impact of the Project on CCWD's water quality and the frequency of water quality standard violations. We would be happy to work with you to explore ways to evaluate the potential for water quality impacts and, if necessary, options for impact mitigation.	The Corps believes that the hydrodynamic model does a very good job of predicting the change in chloride due to implementing the proposed navigation project. The UnTRIMmodel like most hydrodynamic models predicts salinity. To estimate chloride, one must convert the salinity predictions to electrical conductivity and then to chloride. The two conversion equations introduce some uncertainty into the chloride predictions. A comparison between of the CCWD provided Old River salinity data with the UnTRIM simulated salinity for the 2014 Critical Water Year shows similar timing of peaks and valleys between the actual and simulated data though the simulated data is lower than the actual data for June through December. The model results show that the change in chloride at all of the CCWD stations is proportional to the chloride concentration. For the Old River station, periods with chloride around 150 mg/L correspond with a change in chloride of about 3.2 mg/L. From Table 5-3 of the Hydrodynamic Model Report, it appears that the UnTRIM model predicts chloride between 80 and 100 mg/L at Old River for most of June-December 2014 which results in a change in chloride of between 1.5 to 2.1 mg/L. If the baseline chloride concentration at Old River was in the 150 to 170 mg/L range for the June through November months instead of below 100 mg/L, then based on the 2014 January, February, and December predictions of chloride and change in chloride, the change in chloride for June through November would likely be between 3.5 and 4.5 mg/L instead of 1.5 to 2.1 mg/L. Given this, the Corps continues to believe that even if the chloride predictions were higher as suggested by CCWD, the change in chloride due to the project would be less than the 5 percent and 5 mg/L thresholds and thus not significant.

Commenter	Comment	Corps Response
	Attachment Comparison of modeled salinity and historical salinity at CCWD's intakes As shown in Figure 1 and 2, the modeled salinity at CCWD's intakes is fresher than the historical values in a critically dry year, when the water quality concerns are high. During the period of July 1, 2014 to November 1, 2014, the modeled salinity at both CCWD's Old River and Middle River Intakes is mostly below 100 Cl (top panels of Figure 1 and 2), while the historical values are mostly above 100 Cl (bottom panels of Figure 1 and 2).  Figure 1 Comparison of Modeled (top, from the Draft Report) and historical (bottom) salinity at CCWD's Old River Intake	

Commenter	Comment	Corps Response
	 Figure 2 Comparison of Modeled (top, from the Draft Report) and historical (bottom) salinity at CCWD's Middle River Intake	
California Department of Fish and Game (CDFG)	The Department is also submitting comments as a Responsible Agency under CEQA (Pub. Resources Code, §21069; CEQA Guidelines, §15381) and may need to exercise regulatory authority as provided by the Fish and Game Code. As proposed, the Project may result in "take" as defined by State law of any species protected under the California Endangered Species Act (CESA) (Fish & G. Code, Section2050 et seq.), related authorization as provided by the Fish and Game Code will be required.	Responses to comments below.
CDFG – 2	**Biological Significance** The San Francisco Bay-Delta is the second largest estuary in the United States and supports numerous aquatic habitats and biological communities. It encompasses 479 square miles, including shallow mudflats. This ecologically significant ecosystem supports several state and federally threatened and endangered species and sustains important commercial and recreational fisheries. Protected marine species under the State and Federal Endangered Species Acts that could potentially be impacted by Project activities include: • Chinook Salmon (*Oncorhynchus tshawytscha*), state and federally threatened (Spring-run), state and federally endangered (Winter-run); • Steelhead (*Oncorhynchus mykiss*), federally-threatened (Central California Coast and Central Valley ESUs); • Green Sturgeon (*Acipenser medirostris*), federally-threatened (southern DPS); • Longfin Smelt (*Spirinchus thaleichthys*), state-threatened; and	The species listed in your comment are discussed in the Final EIS in Section 4.1.6 and the Biological Assessment/Biological Opinion in Appendix G.

Commenter	Comment	Corps Response
	• Delta Smelt (*Hypomesus transpacificus),* federally-threatened and state-endangered • Humpback Whale (*Megaptera novaeangliae*), federally-endangered Several species with important commercial/recreational fisheries value and habitat value for spawning and rearing could potentially be impacted by Project activities include: Dungeness Crab (*Cancer magister*); Pacific Herring (*Clupea pallasii*); Rockfish (*Sebastes* spp.); California Halibut (*Paralichthys californicus*); Crangon Shrimp (*Crangon* spp.) Surfperches (*Embiotocidae*); Eelgrass (*Zostera marina*); Baitfish (variety of species)	
CDFG – 3	The TSP, as it is currently described within the Draft GRR and EIS, is not inconsistent with Department requirements and recommendations for mechanical dredging projects and hydroacoustic impacts within San Francisco Bay.	Please see Appendix G for the Biological Assessment that further describes the effects of acoustics and mechanical dredging.
CDFG – 4	**Future Maintenance Dredging** The Department has concerns regarding the increased amount of material to be dredged due to the TSP. Since Pinole Shoals is dredged every other year with a hopper dredge, the increase to the estimated amount of dredged material during routine maintenance dredging operations further exposes and increases the risk of entrainment of state listed species, specifically the Longfin Smelt, and Delta Smelt. The draft GRR and EIS does not detail any potential measures that may be incorporated into future maintenance dredging that could reduce the risk of entrainment or offset the impacts of entrainment.	The future maintenance dredging requirements and measures would be followed as written under the Final Environmental Assessment for Maintenance Dredging of the Federal Navigation Channels in San Francisco Bay Fiscal Years 2015 – 2024.
CDFG – 5	**Marine Mammals** Navigational channel deepening will reduce current depth restrictions on large vessel traffic within the Pinole Shoal Channel and Bulls Head Reach, potentially leading to an increase in the number of large vessels transiting the Bay. Additional vessel traffic has the potential to increase interactions between large vessels and whales (Humpback and Gray) within San Francisco Bay and around the Golden Gate. Due to the increased numbers of large marine mammals within San Francisco Bay over the last several years, the Department has concerns regarding potential ship strikes on whales. The Department recommends that future projections of vessel traffic, specifically increased tanker trips, be analyzed and evaluated for potential impacts on whales. If the analysis identifies impacts to whales or other marine mammals, mitigation for impacts will need to be identified	Traffic is expected to increase with or without a project due to the need to satisfy the commodity forecast. However, the proposed channel improvements would allow for vessels to load more efficiently, thereby reducing the number of vessels required to meet the anticipated demand during the period of analysis. Appendix D, Economics, analyzes the ship traffic in detail.
CDFG – 6	**Mitigation Recommendations** If reasonably foreseeable impacts (e.g., ships moving faster through the navigation routes) will result in increased take of marine mammals then minimization and compensatory mitigation should be identified in the EIS. The compensatory mitigation measures should be written to be enforceable and include location(s), implementation schedules and identify funding sources. Full mitigation of project impacts should be achieved. If extension(s) for dredging are requested, thereby extending the dredge work window, there is the potential need for mitigation to be increased to offset additional impacts to special status fish species. The EIS should incorporate a description of the additional impacts of the project to fish spawning in the winter months and identify additional compensatory mitigation for dredging outside of the minimization work window.	No impacts to whales or marine mammals is expected under this project. Please see Appendix G for the Biological Assessment and Section 4.1.6 in the draft EIS.
CDFG – 7	**Additional Recommendations** For the public and the Department to properly review the EIS, the following information should be included in the EIS: 1. Identify how many dredgers with tugs and scows are operating simultaneously at each section of the project (i.e., Pinole Shoal and Bull's Head Reach).	**1.** Please see section 5.4 for the construction assumptions regarding dredgers and tows. **2.** The effect of noise from multiple sources is discussed in section 5.4 (third paragraph) of the BA/EFH assessment (Appendix G of the Report). The sound analysis was completed using the construction assumptions and latest NMFS guidance for marine mammals.

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	2. Explain if the analysis of sound impacts considers that multiple dredgers/tugboats/scows will be operating simultaneously in relation to harassment of marine mammals. 3. Describe a work schedule for the operation of the dredgers and associated work equipment (e.g., dredging will occur 24 hours a day, 7 days a week). 4. Describe the hours of operation in order to determine availability of fish passage past dredging operations. 5. Rock outcropping – the Department recommends that the rock outcropping should be analyzed as a unique feature that potentially provides habitat use for aquatic species. If the analysis identifies the outcropping as a habitat feature and/or if it identifies impacts to aquatic species using the rock outcropping, mitigation needs to be specified for the removal of the rock outcropping and/or the impact to the species that use it. 6. Include an analysis of the cumulative effects of the project and the O&M dredging on aquatic species. 7. Describe how dredged sediment is off-loaded from the scow to land. 8. Indicate if there are limits to dredge slurry overflow from scows in San Pablo Bay and Suisun Bay (the EIS indicated there are no dredge slurry overflow limits in San Francisco Bay). 9. Please discuss if there will be effects of more heavily loaded ships such as wake sizes and wake energy; what if any the effects could be; and if the effects will cause corresponding impacts to erosive forces on levees, eel grass beds, or other aquatic species habitat. 10. Provide a description of how contaminated material unsuitable for placement on Cullinan Ranch or Montezuma Wetlands, will be handled. Include information on the disposal location for the contaminated dredged material. In addition, provide details of how the material will be excavated without contaminating the surrounding area, if that becomes necessary. 11. In some areas (such as central channel) Longfin Smelt larvae densities suggest that the species spawn in deep channel regions. In addition, most early stage Delta Smelt larvae are collected in deep waters well offshore. Explain any potential impacts to deep water smelt spawning habitat as result of the channel deepening project.	**3.** The project will operate 24 hours per day, 7 days per week. A statement to this effect has been added to section 4 of the report under Impact BR-06 for the –37 foot MLLW alternative. **4.** Active dredging will occur at most 75% of the time. Consequently, fish passage should be able to occur unimpeded at least 25% of the time in the shipping channel. A statement to this effect has been added to section 4 of the report under Impact BR-06 for the –37 foot MLLW alternative. **5.** The rocky substrate/obstruction is not considered an underwater pinnacle. The draft report identified it as a rock outcrop, but based on comments, we have revised the language to say rocky substrate or rocky obstruction, as an outcrop implies exposure. This project provides public and economic benefit as described in Chapter 3 of the main report and the Economics Appendix. No other feasible alternatives exist to lowering the rocky obstruction in order to provide safety to vessels and marine life if the obstruction were hit by a vessel. Because the rock obstruction is buried, it currently does not provide habitat for aquatic species except perhaps for some deep burrowing invertebrates. The size of the rock obstruction is indicated on page 12 of the BA (i.e., 40 cubic yards of material and about 950 square feet of area (or approximately equivalent to an area of 10 ft x 10 ft), and is currently within the trafficked area by vessels. We consider the buried rock obstruction to be too small to substantially change the composition of the benthic food supply as it stands now. It is possible that it could provide some new habitat once exposed as a result of this project should it be left in place. However, its removal would cause no loss of habitat compared to the current conditions. Per navigational safety concerns by the bar pilots and according to ER 1130-2-520, 8-2, c, 6 (policy which allows additional overdepth due to the presence of hard materials in order to ensure future maintenance of the project to the authorized dimensions), the Corps has included the removal in the project description due to safety concerns. At this time, the Corps does not propose additional mitigation to the measures taken within the project description to reduce effects of the project, which is placement of material for beneficial reuse to contribute to tidal wetland habitat. If left as is, it will not give the required 3 feet under-kneel clearance when ships approach the Pinole Shoal. **6.** Annual maintenance dredging is already occurring in these channels. The future maintenance dredging would not differ in effects. **7.** Both Montezuma and Cullinan Ranch placement sites have their own offloader (See Appendix A) **8.** During transport of the dredge material, the scows are filled to 80% capacity in order to prevent uncontrolled spillage of slurry material in the bay. **9.** The proposed project is to deepen the channel to 38feet MLLW and allowing ships with 35 feet draft. The difference in the effect of the wake between the current usage and the proposed project is minimal. **10.** Montezuma accepts contaminated soils for use as cover material.

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		11. We acknowledge in section 6.1 of the BA/EFH assessment (Appendix G of the Report) that larval and/or post-larval delta smelt and longfin smelt can occur in deeper habitats. As stated in section 6.2, the use of the August 1 to November 30 work window at Bulls Head Reach in particular and also June 1 to November 30 work window at Pinole Shoal should avoid most spawning. Given that the channel is highly disturbed and largely homogeneous, deepening the channel from approximately 35 to 38 feet over the project footprint is not expected to meaningfully change the character or quality of the habitat. Most effects such as turbidity and removal of food organisms would be temporary and localized (see section 5.2 of the BA/EFH assessment (Appendix G of the Report).
CDFG – 8	**Sediment Study** The EIS states that a study was done in the early 1990's and 2000's to sample sediment throughout Pinole Shoal Channel and Bull's Head Reach. Physical, chemical, and bioaccumulation analyses were done. Sediment was sampled to 45 feet MLLW up to 47 feet MLLW. The EIS indicated that the previous studies sediment sampling and analysis studies can be used to evaluate the suitability of dredge materials for aquatic placement and wetland creation, and if dredging and the dredge material placement would pose a contamination or bioaccumulation risk to special status species in the project area. There have been significant changes to land use in the State since the original study was done. These land use changes may result in a substantially different composition of sediments and contaminants entering the Delta and San Francisco Bay. Therefore, the Department recommends repeating the sediment study.	As stated in the draft EIS, additional sediment testing will occur during the design phase of the project (after the Final EIS).
Central Valley Regional Water Quality Control Board (CVWB)	Our agency is delegated with the responsibility of protecting the quality of surface and groundwaters of the state; therefore our comments will address concerns surrounding those issues.	All regulator required permits will be acquired prior to construction of the project.
Katherine Black, Benicians for a Safe and Healthy Community Kathy Kerridge, Good Neighbor Steering Committee Rev. Will McGarvey, Executive Director, Interfaith Climate Action Network of Contra Costa County Liat Meitzenheimer, President, Fresh Air Vallejo Steve Nadel, Sunflower Alliance Laura Neish, Executive Director, 350 Bay Area Janet Pygeorge, President, Rodeo Citizens Association Nancy Rieser, Crockett-Rodeo United to Defend the Environment (C.R.U.D.E.) Dan Sakaguchi, Communities for a Better Environment	The GRR/DEIS proposes to deepen a 13.2-mile navigation channel of San Francisco Bay-Delta estuary by three feet in order to let shipping vessels enter and leave the Bay at fuller capacity, at a public cost of $55 million (Appen. D-24). The analysis claims without adequate proof that this dredge project will not affect imports or exports of shipped goods, but rather will simply result in reduced vessel traffic and $11.3 million in annual transportation cost-savings for the four project-affected petroleum refineries (Shell, Tesoro, ConocoPhillips, and Valero) (Appen. D-22). However, the current project analysis ignores and denies the most likely impact of this project – expanded crude imports that result in increased refinery operations near environmental justice communities and, ultimately, greenhouse gas ("GHG") emissions from the full fuel-chain of the refined petroleum products. As a result, the analysis contained in the GRR/DEIS is substantially deficient. *We ask the Army Corps of Engineers (ACOE) to revise its analysis and reveal the true value of the taxpayer subsidy that is being provided to Bay Area petroleum refineries at the cost of the climate and the health of local environmental justice communities.* **1. The GRR/DEIS inaccurately assumes that total shipping volume will remain unchanged by the proposed project.** The analysis states that crude oil import and refined petroleum exports will remain the same under all project alternatives (Appen. D-14). This is supposedly supported by a reference to the Annual Energy Outlook 2015, which provides national-level growth rates for crude oil imports and petroleum products exports (Append. D-15). This ignores, however, the fact that the four project-affected refineries in total operate at only 91.3% of full throughput capacity, far below the 99.7%	1.) Under future-without and future with-project conditions, the same volume of cargo is assumed to move through the port. If the refineries wanted to have a higher utilization rate, they currently have the opportunity to do so by either increasing waterborne shipments, rail shipments, or truck shipments. The fact that they do not leads to the assumption that other factors are in play besides channel depth. Many exogenous factors may influence throughput tonnage at a port, including landside development and infrastructure, population and income growth, port logistics and fees, business climate and taxes, carrier preferences, labor stability, and business relationships. The proposed improvements would allow for commodities to move more efficiently through the channel. With the ability of these vessels to transit more efficiently, the total number of vessels required to meet the anticipated demand during the period of analysis will decrease compared to the current channel configuration. 2.) An extensive air quality analysis was completed and is contained in Appendix G of this report. The construction of the proposed project would be expected to have short term unavoidable effects to air quality, however, no long term effects. The number of vessels are not expected to increase due to this proposed project, however, they will be more heavily loaded. The same amount of commodities will be coming in, with less ship traffic, due to this project. Increasing the navigation channel depth by 3 feet will not likely increase the refined oil production in the Bay Area significantly, and therefore, is not likely to affect communities, including environmental justice communities, in the surrounding area. More details on the environmental justice

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	utilization of their nearby competitor Chevron, the one Bay Area refiner that is currently not affected by the transportation bottleneck addressed by this proposed project (EIA and federal Clean Water Act authorities). It is overwhelming likely that under existing market pressures, removing the navigation bottleneck will induce greater utilization of the four project-affected petroleum refineries. The GRR/DEIS contains no analysis that would refute this intuitive outcome. **2. As a result, the project's impacts on climate and environmental justice communities are insufficiently studied.** Because of the assumption that crude and petroleum shipping volume will remain unchanged, the GRR/DEIS considers only the air quality, environmental justice, and climate impacts caused by construction and the benefits from the reduced shipping vessel traffic, finding no significant impacts (EIS 4-25 to 4-41, EIS 4-65 to 4-66). The analysis fails to consider the GHG emissions resulting from increased petroleum production that will likely result from the project, the criteria pollutant emissions from the increased refining production, and these impacts on environmental justice communities living near these refineries. As written, the GRR/DEIS avoids a full and proper analysis of the climate and environmental justice impacts by making a simplifying, but deeply misleading and unsupported, assumption. As a result, the GRR/DEIS is deficient. We ask the ACOE to properly amend the analysis to reveal the full impacts of the proposed project.	analysis can be found in Section 4.1.12 of the main report/EIS.
United States Bureau of Reclamation (Department of Interior) (USBR)-1	The USACE modeling indicates that the proposed changes in bathymetry of the navigation channel will affect salinity intrusion within San Francisco Bay-Delta. There are numerous water quality standards (notably chloride concentration) that would become more difficult to meet due to the increased salinity. The intrusion of salt into the Bay-Delta can also be measured by the scaled distance of two parts per thousand (ppt) water isohaline, in kilometers, from the Golden Gate Bridge (known as X2). Reclamation and the California Department of Water Resources (DWR) are currently required to improve fall habitat for Delta Smelt by decreasing the distance of X2 from the Golden Gate Bridge through increased Delta outflow during the fall, when the preceding water year type was Wet or Above Normal. Reclamation and DWR are also required to meet X2 requirements in the spring based on hydrology. Initial modeling indicates that X2 could be shifted upstream by up to approximately 0.17-0.27 kilometers (depending on water year type) due to the proposed change in bathymetry associated with the proposed action. In response, the Central Valley Project (CVP) and the State Water Project (SWP) would have to release additional water to meet the current requirements. This increase in the minimum required Delta outflow may result in reduced flexibility in CVP and SWP operations for water supply. Therefore, the operational changes that would be required under the proposed action to meet current requirements could impact water supply and costs, water quality, and Endangered Species Act listed species.	The USACE acknowledges that the navigation project may result in instances when water operations are modified slightly to adjust for X2 displacement caused by the deeper bathymetry. The USACE believes that the frequency and scale of such operational adjustments to be minimal in comparison to the total amount of water that passes through the Delta. The USACE believes that the minimal project related impacts to water quality and water supply caused by this project do not warrant mitigation since CVP and SWP have operational flexibility to absorb these impacts with limited effect on their overall operations.
USBR-2	The Water Resource Appendix notes that water quality modeling for the No Action Alternative is based on the maintained channel depth, not current conditions in the Delta. The Corps should confirm whether the current conditions in the Delta are actually the same as the maintained channel depth. If current conditions are shallower than the maintained channel depth, then they were artificially deepened in the model. This would likely mean the modeling presented by the	The decision to model the baseline conditions assuming that the project is deepened to the full overdepth and then compared to the with project with the full overdepth is meant to be a conservative assumption, and this approach has been used on this project and all previous phases dating back at least 10 years. To the extent that the surveyed conditions are less deep than the full baseline plus overdepth, one would also assume that the with project would also

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	Corps underestimates the X2 and salinity impacts of this project compared to the current conditions since additional dredging would need to be completed to get current conditions to the depth simulated in the No Action Alternative. Reclamation believes additional analysis is required to show the impacts of the project with regards to the current and future conditions as well as to identify potential mitigation. Initial modeling indicates that X2 could be shifted upstream by up to approximately 0.17-0.27 kilometers (depending on water year type) due to the proposed change in bathymetry associated with the proposed action. In response, the Central Valley Project (CVP) and the State Water Project (SWP) would have to release additional water to meet the current requirements. This increase in the minimum required Delta outflow may result in reduced flexibility in CVP and SWP operations for water supply. Therefore, the operational changes that would be required under the proposed action to meet current requirements could impact water supply and costs, water quality, and Endangered Species Act listed species. The Water Resource Appendix notes that water quality modeling for the No Action Alternative is based on the maintained channel depth, not current conditions in the Delta. The Corps should confirm whether the current conditions in the Delta are actually the same as the maintained channel depth. If current conditions are shallower than the maintained channel depth, then they were artificially deepened in the model. This would likely mean the modeling presented by the Corps underestimates the X2 and salinity impacts of this project compared to the current conditions since additional dredging would need to be completed to get current conditions to the depth simulated in the No Action Alternative. Reclamation believes additional analysis is required to show the impacts of the project with regards to the current and future conditions as well as to identify potential mitigation.	be less deep than the full project depth plus overdepth. By assuming both are fully deepened to the full overdepth, the full deepening depth is assumed. If you went from surveyed conditions to full project with overdepth you would be overestimating the effects of the project.
Environmental Groups (Sierra Club, Friends of the Earth, Baykeeper, Communities for a Better Environment, Center for Biological Diversity). (Env Groups)	The San Francisco Bay to Stockton, California Navigation Study ("Project") considers dredging a 13 mile stretch of the Bay, ignoring the portion of the Bay between Avon, site of the area's easternmost refinery, and Stockton. The Project would deepen Bay shipping lanes used by four of the five refineries to import crude oil and export refined products. The Project is intended to save these refiners an estimated $11,312,000 per year and cost the public an estimated annual cost of $3,596,000/year.1 Essentially, the Project is intended to give four oil refineries a nearly $15 million subsidy each year. Compounding the public concern for a deep subsidy to four oil refiners, the Project is being reviewed and approved by agencies far removed from the affected communities, which have given inadequate notice to the people who live and breathe near the Bay. Substantively, while the DEIS describes and analyzes some impacts accurately, at its core, the document fails to meet the requirements of the National Environmental Policy Act ("NEPA") because it does not correctly describe the Project and its impacts. First, the DEIS piecemeals the 13 mile stretch currently under consideration from the foreseeable remaining portion of the project to extend dredging to Stockton. Next, the DEIS assumes that the Project will reduce ship traffic, when in fact there are no enforceable limits on the frequency of ship calls, and the Project reduces physical limitations on navigation which makes it likely that more, not fewer ships will transit the Bay. Even if it were the case that fewer ships would be transiting the Bay, the Project correctly anticipates these ships will be more heavily laden with petroleum products. The DEIS fails to accurately describe the increased risk of oil spills the increased loads bring. It also fails to analyze the impacts to climate and environmental justice	The DEIS is using the best information currently available to assess the environmental effects of the project. The Corps does not have information regarding timing or depths for a proposed project to Stockton, and therefore cannot assess effects of what the anticipated potential future project might be. At this time, there is no Federal Interest in the Avon to Stockton project, however, a non-Federal sponsor can go through different avenues to pursue a potential deepening project. See Section 4.7 and Table 4-22. The proposed project includes beneficial reuse of all dredged material, which is stated in the DEIS TSP. Mechanical clamshell dredging is the least damaging to smelt, which is why this type of dredge will be used to complete this project, and is approved for use by USFWS under the maintenance dredging for the Bay-Delta, which is approved in the USFWS Biological Opinion for Maintenance Dredging. For juvenile crabs, entrainment rates have been estimated up to 300 times lower for clamshell dredging compared to hopper dredging (Reine and Clark 1998); no data are available for small fish. As stated in section 5.1 of the BA/EFH assessment (Appendix G of the Report), "While individual fish have the potential to be struck or entrained by clamshell bucket as it falls through the water column to the channel bottom, the falling bucket would generate a pressure wave around it that would force small fish away from the falling bucket. As a result of the pressure wave, mechanical clamshell dredging has a very low risk of entraining fishes (Reine and Clarke 1998). As such, the use of a clamshell dredge minimizes the risk of fish entrainment for all fishes. " The proposed channel modification (3-foot deepening) is not expected to have an impact on the global supply and demand of crude oil and refined petroleum exports. Many exogenous factors may influence throughput tonnage at a port, including landside development and

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	communities from the additional processed petroleum products in which "de-bottlenecking" transport will result. Further, while the DEIS asserts that mechanical dredging will be used in some instances, it does not rule out clamshell dredging, which is fatal to endangered smelt. Likewise, the DEIS mentions some beneficial reuse of dredge materials, but it is vital for the estuary that the Project commit to beneficial reuse of these materials.	infrastructure, population and income growth, port logistics and fees, business climate and taxes, carrier preferences, labor stability, and business relationships. Commodity demand is expected to increase with or without a project, which leads to more vessel calls in order to meet demand. However, the proposed improvements would allow for these commodities to move more efficiently through the channel. With the ability of these vessels to transit more efficiently (carrying additional cargo per call), the total number of vessels required to meet the anticipated demand during the period of analysis will decrease compared to the current channel configuration. Most oil spills generally occur due to collisions or groundings. If the channel is constructed to its proposed depth, the risk of a collision will decrease due to the reduced number of vessel calls needed to satisfy the commodity forecast. In the without-project and with-project conditions, the analysis assumes that all tankers must use 3 feet of underkeel clearance. The risk of vessel grounding would not change if the project is implemented.
Env Groups – 2	**The DEIS Fails to Satisfy the National Environmental Policy Act** **A. Relevant NEPA Legal Requirements** NEPA is our "basic national charter for the protection of the environment."2 Congress enacted NEPA "[t]o declare a national policy which will encourage productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; [and] to enrich the understanding of the ecological systems and natural resources important to the Nation."3 To accomplish these purposes, NEPA requires all agencies of the federal government to prepare a "detailed statement" that discusses the environmental impacts of, and reasonable alternatives to, all "major Federal actions significantly affecting the quality of the human environment."4 This statement is commonly known as an environmental impact statement ("EIS").5 The EIS must "provide full and fair discussion of significant environmental impacts and shall inform decision-makers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment."6 This discussion must include an analysis of "direct effects," which are "caused by the action and occur at the same time and place," as well as "indirect effects which . . . are later in time or farther removed in distance, but are still reasonably foreseeable."7 An EIS must also consider the cumulative impacts of the proposed federal agency action together with past, present and reasonably foreseeable future actions, including all federal and non-federal activities.8 Furthermore, an EIS must "rigorously explore and objectively evaluate all reasonable alternatives" to the proposed project.9 **B. The DEIS's Purpose and Need is Flawed** The DEIS states that the overall purpose of channel maintenance is to "reasonably maximize net benefits to the nation."10 The proposed 13-mile dredge effort would not maximize net benefits to the nation. In fact, it would do the opposite. First, the Project proposes using $3.5 million of public funds annually. The identified outcome of the expenditure is to save four refiners more than $11 million annually. In essence, the public is subsidizing the oil industry to ensure greater profit for private corporations. Second, jeopardizing California's coastline, tourism industry, marine life, and coastal communities are not in the national interest. Third, facilitating the acceleration of climate change through continued and increased fossil fuel production and refining likewise harms the interests of the United States and does not align with the state's goals for greenhouse gas reduction. Furthermore, California's demand for fossil fuels is expected to decline in the coming years, making oil and gas from outside the state less needed.11 California and the nation are under	A. The Corps believes it has adequately analyzed the alternatives under the NEPA process. B. The purpose and need of the project is to reasonably maximize net benefits to the nation, as stated. The EIS, through the NEPA process, is using the best information currently available to assess the environmental effects of the project. The Corps does not have information regarding timing or depths for a proposed project to Stockton, however, the cumulative effects of the anticipated project are discussed in the cumulative effects section of the EIS, Section 4.2. At this time, there is no Federal Interest in the Avon to Stockton project, however, a non-Federal sponsor can go through different avenues to pursue a potential deepening project. C. 1 and 2: The public was notified of the release of the draft EIS through several venues. The Corps produced a mass mailing of over 1000 participants on a previously used mailing list for California projects to notify agencies, surrounding home/land owners, and interested parties of the location of the document (on the Corps Jacksonville website where all our NEPA documents go and local libraries). A Press Release out of the San Francisco Corps office was released on May 10, 2019 to announce the release and location of the document files as well. As noted, the document was announced on the San Francisco District Corps site as well under News, with the location of the document files. The press release included an article in Dredging Today. The document release and files were also noticed through the state clearinghouse on the CEQA website (even though it is a Federal document) in order to reach the most people possible under the typical venues that NEPA and CEQA documents are released. A NOA was published in the Federal Register on May 10, 2019 (EIS No. 20190088) as well. A public meeting was held on June 11, 2019 that was announced in the aforementioned mailing, along with press releases in the Bay Area. **D.** The proposed channel modification (3-foot deepening) is not expected to have an impact on the global supply and demand of crude oil and refined petroleum exports, and therefore would not be expected to have an increase in oil refinery production. Many exogenous factors may influence throughput tonnage at a port including landside development and infrastructure, population and income growth, port logistics and fees, business climate and taxes, carrier

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	an urgent mandate to reduce and phase out fossil fuel infrastructure. Quite the contrary of "maximizing net benefits to the nation," the Project locks in a future that exceeds the global capacity for emissions of greenhouse gases. Finally, the DEIS impermissibly segments this piece of the dredging project from the whole deepening project, including the portion from Avon to Stockton, into a separate, smaller project. The Project was originally aimed at deepening navigation channels all the way to the Port of Stockton.12 Now the proposed Project only proposes to deepen channels up to Avon.13 However, the Port of Stockton continues to be the official non-federal sponsor for the Project.14 This set of facts indicates that the Corps and the Port of Stockton plan to propose an additional project that would deepen the channels to the Port of Stockton in the future. NEPA does not allow an agency to break a project into smaller parts in order to avoid a finding of significance or a full evaluation of its impacts.15 If the DEIS had considered dredging up to the Port of Stockton, the analysis would have shown more significant impacts from the Project, in particular to water quality (e.g., increasing chloride concentrations, and decreasing dissolved oxygen) and to listed species. By breaking the dredging Project into at least two portions, the Corps has artificially and improperly segmented it into smaller parts.16 In addition, deepening the navigation channels to Stockton would likely increase impacts from the type of goods being shipped. Stockton is one of the only ports that exports coal in the Bay Area. Deepening the channel to Stockton would facilitate increased exports of coal, causing more localized impacts to Stockton at the export facility and more impacts from coal shipment to the aquatic environment of the Bay. The DEIS does not consider the impacts of increased coal transportation because it has separated deepening of the channels from Avon to Stockton from this Project. However, the approval of this current Project will facilitate a future project to deepen the channels to Stockton by reducing the cost and extent of the full project. Improper segmentation occurs where the "completion of the first project may cause the benefit/cost ratio on the second to rise sharply."17 The completion of channel deepening to Avon through this Project approval would cause the benefit/cost ratio for the deepening to the Port of Stockton to rise sharply. Therefore, the two projects are connected actions that should be considered in a single EIS. **C. The Public Did Not Receive Adequate Notice of the DEIS** The Army Corps of Engineers ("ACOE") violated the public notice and comment requirements under both the Clean Water Act ("CWA") and NEPA in its preparation of the DEIS. **1. The Corps Violated Notice Requirements under CWA and NEPA** The DEIS for the Dredging Project, located in the San Francisco Bay Area of California, was noticed on the Corps' Jacksonville, Florida website.18 A public notice would normally appear in the "Public Notice" section of the regional Corps website in which the proposed project is located. The Jacksonville, Florida Corps district is not a place one would reasonably expect to find notice for a project located nearly 3000 miles away in California. Moreover, the DEIS documents do not appear on the "Public Notice" part of the Jacksonville Corps website, but rather they are located in the Environmental Documents section under a geographic region labeled "other."19 A link to the public notice does not appear in the "Public Notices" section of the San Francisco Corps website though it does appear in the "latest news" section.20 The objective of providing public notice is not to hide the ball, but rather to inform and involve the public.21 These procedural safeguards task the agency with "[m]ak[ing] diligent efforts to involve the public" and "[s]olicit[ing] appropriate information from the public."22 It is difficult to involve and inform the public when notice is provided in the wrong location.	preferences, labor stability, and business relationships. Commodity demand is expected to increase with or without a project, which leads to more vessel calls to satisfy demand. However, the proposed improvements would allow for these commodities to move more efficiently through the channel. With the ability of these vessel to transit more efficiently (carrying additional cargo per call), the total number of vessels required to meet the anticipated demand during the period of analysis will decrease compared to the current channel configuration The Corps feels we adequately addressed effects on wildlife from the project, as listed in Chapter 4 and the Biological Assessment (Appendix G). The dredged material will be beneficially used to contribute to 160 acres of tidal wetland habitat at Montezuma Wetlands and Cullinan Ranch. This is described throughout the report. Each beneficial use site has their own EIS and approved monitoring plans, and has been in progress with current monitoring reports available.

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	2. The Corps' Designation of an Out-of-Region District Engineer Should Not Receive Deference due to Lack of Regional Involvement The Clean Water Act allows the Corps to issue a permit for the discharge of dredged or fill material under § 404, 33 U.S.C. § 1344, but only after providing public notice and an opportunity for public hearing.23 The Corps' interpretation of these implementing regulations is normally given deference, but there are cases where such deference is not warranted, such as this one.24 The Corps' designation of a "district engineer" nearly 3000 miles from the project and where the affected public resides is inconsistent with the law and these implementing regulations and its conclusions should not be afforded deference. The district engineer in Jacksonville, FL cannot meaningfully engage with the public because it has no knowledge of relevant stakeholders and interested parties and is not aware of the local ecosystem where this dredging will occur. The implementing regulations throughout 33 C.F.R. § 320 task the "district engineer"25 with evaluating the impacts a proposed activity may have on the public, requiring analysis of the particular local environment and "full consideration and appropriate weight given to all comments, including those of federal, state, and local agencies, and other experts on matters within their expertise."26 The Florida Corps may have knowledge of its region's local environment and relevant stakeholders, but not California's. Therefore, its interpretations of the public interest deserve no deference. **D. The DEIS's Analysis of Direct, Indirect, and Cumulative Impacts is Inadequate** The Corps has failed to address a series of clear impacts from this dredging project that allows shipping vessels to enter and exit the San Francisco Bay-Delta estuary with increased capacity. The DEIS fails to consider how the Project's enabling of greater volumes of oil imports and exports will result in increased oil refinery operations. Increased refinery operations mean more air pollution in the environmental justice communities that surround these refineries and an increase in greenhouse gas emissions. The DEIS also fails to properly consider how the Project will impact wildlife in the Project Area, and how dredging material will be beneficially reused. In addition, the DEIS consideration of increased spill risks and impacts is inadequate. The Corps' failure to consider these environmental impacts renders the DEIS analysis inadequate. In addition to direct project impacts, an EIS must examine indirect effects, "which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable."27 "Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems."28 Types of effects that must be considered include "ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), economic, social, or health, whether direct, indirect, or cumulative."29 The Supreme Court has held that impacts must be analyzed when there is "'a reasonably close causal relationship' between the environmental effect and the alleged cause."30 For example, in *Border Power Plan Working Group v. Department of Energy*, 260 F.Supp.2d 997 (S.D. Cal. 2003) the court found Defendants were required to consider the trans-boundary impacts of certain power turbines in Mexico in their EIS on a U.S. transmission line because the projects were "two links in the same chain."31 There are numerous case examples where federal agencies were required to prepare EISs in order to consider the indirect and cumulative effects of their respective projects. *See e.g., Sylvester v. U.S. Army Corps of Engineers*, 884 F.2d 394, 400 (9th Cir.1989) (agency must consider secondary indirect and cumulative effects of an action other than the proposed action under NEPA if they are "two links of a single chain."); *Port of Astoria, Oregon v. Hodel*, 595 F.2d 467, 480 (9th Cir.1979) (agency's EIS had to consider the supply of federal power and the construction of a private	

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	magnesium plant that used the power); *Thomas v. Peterson*, 753 F.2d 754, 761 (9th Cir.1985) (agency's EIS had to consider both a federal road and the federal timber sales that the road would facilitate); *Colorado River Indian Tribes v. Marsh*, 605 F.Supp. 1425, 1433 (C.D.Cal.1985) (agency had to prepare an EIS that considered both the federal action of stabilizing a river bank and the private housing built as a result). In this DEIS, the Corps has failed to consider numerous direct, indirect, and cumulative effects of the project. NEPA regulations and case law specifically require examination of the reasonably foreseeable impacts of the project, including growth that may be induced by the project. For these reasons, as explained more specifically below, the DEIS fails to satisfy NEPA.	
Env Groups – 3	**1. The DEIS's Analysis of Greenhouse Gas Emissions Is Inadequate** The DEIS rightly notes the potential threats of climate change to California, but without acknowledging the role the project itself would play in exacerbating climate change by facilitating more oil imports and exports: Observed environmental changes in California due to global warming include rising temperatures, rising sea levels, a lengthened growing season, and shifts in plant and animal ranges. At a local level, the navigation channel and surrounding area may be at greater risk of changing weather patterns, such as the current drought affecting water resources, the increasing intensity or rainfalls that cause localized flooding, and the local effects from SLR.32 The DEIS further notes the potential for sea level rise to displace coastal businesses and residence, the increase in wildfires, damage to marine and terrestrial ecosystems, and the increase in the incidence of infectious diseases, asthma, and other health problems.33 Yet, as the above quote indicates, the DEIS places emphasis on how climate change could impact the navigation channel, rather than on how deepening the channel would facilitate more climate change. However, since the navigation channels serve both oil refineries and coal transport terminals in the area, the proposed channel alterations would remove constraints on expanding fossil fuel import and export volumes, as explained in the DEIS: Given the constraints posed by existing channel depths, inefficient strategies that are currently employed to manage these constraints include: • Vessels must light-load cargo • Vessels must wait for favorable (high) tides which increases transportation costs • High shoaling rates in Bulls Head Reach require dredging annually, incurring large mobilization and demobilization costs, and causing delays to vessels when dredging is postponed. 34 In light of these constraints, the primary objective of the channel alterations is to "[r]educe transportation costs and increase deep draft navigation efficiency for the shipment of commodities to and from all facilities within the study area beginning in 2020."35 The proposed channel alterations would allow vessels to carry more imported crude oil for processing at the refineries. They will also free up capacity to more effectively export refined petroleum products from the Bay Area, which will ultimately be burned. Additionally, the project would expand the capacity of ports to transport coal, most notably the Port of Stockton which oversaw the transport of nearly 800,000 tons of bulk coal in 2016.36 This, however, is at a time when fossil fuel extraction, processing and consumption locally, regionally and globally, and the investments in fossil fuel infrastructure, such as those proposed in the DEIS, that enable it, pose an existential threat to the planet and must be phased out. **a) The US Must Rapidly Shift Away from Fossil Fuels**	The Corps does not expect the proposed channel modification (3-foot deepening) to have an impact on the global supply and demand of crude oil and refined petroleum exports, and therefore would not be expected to have an increase in oil refinery production. Many exogenous factors may influence throughput tonnage at a port including landside development and infrastructure, population and income growth, port logistics and fees, business climate and taxes, carrier preferences, labor stability, and business relationships. Commodity demand is expected to increase with or without a project, leading to more vessel calls to meet demand. However, the proposed improvements would allow for these commodities to move more efficiently through the channel. With the ability of these vessel to transit more efficiently (carrying additional cargo per call), the total number of vessels required to meet the anticipated demand during the period of analysis will decrease compared to the current channel configuration.

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	Scientific research has established that there is no room in the global carbon budget for new fossil fuel extraction if the worst dangers from climate change are to be avoided. Instead, new fossil fuel production and infrastructure must be halted, and much existing production must be phased out to meet the Paris Agreement climate targets and avoid catastrophic climate damages. The United States has committed to the climate change target of holding the long-term global average temperature "to well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels" under the Paris Agreement.37 The Paris Agreement established the 1.5°C climate target given the evidence that 2°C of warming would lead to catastrophic climate harms.38 Scientific research has estimated the global carbon budget—the remaining amount of carbon dioxide that can be emitted—for maintaining a likely chance of meeting the Paris climate targets, providing clear benchmarks for United States and global climate action.39 Importantly, a 2016 global analysis found that the carbon emissions that would be released from burning the oil, gas, and coal in the world's currently operating fields and mines would fully exhaust and exceed the carbon budget consistent with staying below 1.5°C.40 The reserves in currently operating oil and gas fields alone, even excluding coal mines, would likely lead to warming beyond 1.5°C.41 An important conclusion of the analysis is that no new fossil fuel extraction or infrastructure should be built, and governments should grant no new permits for extraction and infrastructure.42 In short, the analysis established that there is no room in the carbon budget for new fossil fuel extraction or infrastructure anywhere, including in the United States, and much existing fossil fuel production must be phased out to avoid the catastrophic damages from climate change.43 A 2019 analysis underscored that the United States must halt new fossil fuel extraction and rapidly phase out existing production to avoid jeopardizing our ability to meet the Paris climate targets and avoid the worst dangers of climate change.44 The analysis showed that the U.S. oil and gas industry is on track to account for 60 percent of the world's projected growth in oil and gas production between now and 2030—the time period over which the IPCC concluded that global carbon dioxide emissions should be roughly halved to meet the 1.5°C Paris Agreement target.45 If not curtailed, U.S. fossil fuel expansion will impede the world's ability to meet the Paris climate targets and preserve a livable planet. These analyses highlight that the United States has an urgent responsibility to lead in the transition from fossil fuel production to 100 percent clean energy, as a wealthy nation with ample financial resources and technical capabilities, and due to its dominant role in driving climate change and its harms. The U.S. is currently the world's largest oil and gas producer and third-largest coal producer.46 The U.S. is also the world's largest historic emitter of greenhouse gas pollution, responsible for 25 percent of cumulative global CO2 emissions since 1870, and is currently the world's second highest emitter on an annual and per capita basis.47 The U.S. must focus its resources and technology to rapidly phase out extraction while investing in a just transition for affected workers and communities currently living on the front lines of the fossil fuel industry and its pollution.48 Ending the approval of new fossil fuel production and infrastructure is also critical for preventing "carbon lock-in," where approvals and investments made now can lock in decades-worth of fossil fuel extraction that we cannot afford. New approvals for fossil fuel infrastructure—such as pipelines and marine and rail import and export terminals—require upfront investments that provide financial incentives for companies to continue production for decades into the future.49 As summarized by Green and Denniss (2018): When production processes require a large, upfront investment in fixed costs, such as the construction of a port, pipeline or coalmine, future	

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	production will take place even when the market price of the resultant product is lower than the long-run opportunity cost of production. This is because rational producers will ignore 'sunk costs' and continue to produce as long as the market price is sufficient to cover the marginal cost (but not the average cost) of production. This is known as 'lock-in.'"50 Given the long-lived nature of fossil fuel projects, ending the approval of new fossil fuel projects is necessary to avoid the lock-in of decades of fossil fuel production and associated emissions. A very recent study found that phasing out all fossil fuel infrastructure at the end of its design lifetime, starting immediately, preserves a 64 percent chance of keeping peak global mean temperature rise below 1.5°C.51 By contrast, the study found that delaying mitigation until 2030 reduces the likelihood that 1.5 °C would be attainable to below 50 percent, even if the rate of fossil fuel retirement were accelerated. In other words, every year of delay in phasing out fossil fuel infrastructure makes "lock-in" more difficult to escape and the possibility of keeping global temperature rise below 1.5°C less likely. The study concluded that although difficult, "1.5 °C remains possible and is attainable with ambitious and immediate emission reduction across all sectors." Therefore, the Corps should be acting in accordance with a carbon budget that keeps global temperatures below 1.5 degrees Celsius. Instead, the Project would lock in more oil refining, including, foreseeably, the refining of Canadian tar sands crude, which is among the dirtiest and most GHG-intensive feedstock on the planet.52 Moreover, such infrastructure changes would facilitate the import and export of more oil, gas, and coal through area ports, ultimately contributing to the global reliance on climate-damaging fossil fuels. With the additional GHG emissions that would result from the proposed channel improvements totaling as much as 7.22 million metric tons of carbon dioxide equivalents (CO2e) per year even without an increase in processing of Canadian tar sands, the Project would eviscerate local, state and national efforts to avoid devastating climate harms.53	
Env Groups – 4	**b) The DEIS Fails to Consider the Project's Impact on Oil Refinery Imports and Exports** The DEIS is inadequate in that it fails to describe and consider the impact the Project's "de-bottlenecking" of refinery import and export limitations has on greenhouse gas (GHG) emissions. The only climate impact analysis performed by the Draft EIS is that of the construction and vessel operations.54 Despite acknowledging the benefits the project will have to refineries within the project area, the Corps insists, without basis, that the project would not lead to any increase in refinery imports or exports greater than those already projected without the project.55 In fact, the Corps refused to consider the possibility of increased exports of refined petroleum products even after explicit recommendations to do so from the US Environmental Protection Agency ("EPA").56 EPA urged further analysis of future impacts: "in addition to analyzing impacts associated with the construction of the project, we recommend that the EIS analyze reasonably foreseeable impacts resulting from a potential increase in the transportation and combustion of refined petroleum and coal, which are major exports of ports within the proposed project area."57 EPA recommends disclosing the GHG emissions that would ultimately be burned as a result of this project, including GHGs emitted overseas after products are shipped out of the project area's ports and refineries.58 EPA again urged in 2018 to evaluate any adverse environmental effects that could result from growth at the four refineries in the area.59 The Corps in turn simply asserted, with no reference to facts in the record, that the project would not be expected to result in increased ship traffic.60 This cursory response demonstrates a woefully inadequate understanding of the refining industry and does not accurately reflect the	The Corps does not expect the proposed channel modification (3-foot deepening) to have an impact on the global supply and demand of crude oil and refined petroleum exports, and therefore would not be expected to have an increase in oil refinery production. Many exogenous factors may influence throughput tonnage at a port including landside development and infrastructure, population and income growth, port logistics and fees, business climate and taxes, carrier preferences, labor stability, and business relationships. Commodity demand is expected to increase with or without a project, leading to more vessel calls to meet demand. However, the proposed improvements would allow for these commodities to move more efficiently through the channel. With the ability of these vessel to transit more efficiently (carrying additional cargo per call), the total number of vessels required to meet the anticipated demand during the period of analysis will decrease compared to the current channel configuration.

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	project's potential to "de-bottleneck" the throughput of four major oil refineries, which would lead to a substantial increase in GHG emissions.61 Since there is a "reasonably close causal relationship" between these effects and the proposed project, the Corps is required by law to include analyses of these effects. Here, the increased volume of oil and coal passing through the deepened channels will lead to greater refining and export activity. These in turn will lead to more greenhouse gas emissions, both at the refineries and when the products are combusted. Stated differently, the dredging is "a mere step in furtherance of many other steps in the overall development" of the area's fossil fuel industry.62 The project will likely result in a significant increase in future volumes of crude oil and refined petroleum products shipped through the Bay.63 One of the primary Project purposes is to address the issue that shipping vessels are currently required to be less than fully loaded in order to navigate the shallow Bay channels. By dredging these channels, the Project intends to allow tankers to utilize more of their existing capacity.64 The only Bay refinery that can currently send and receive tankers at fuller draft is the Chevron Refinery in Richmond; the Richmond refinery also has the highest capacity utilization rate of all Bay refineries at a rate of 99.7%.65 Refineries affected by the project have an average capacity utilization rate of 91.3%, while the total average West Coast refinery capacity utilization rate is 93.5%. The shipping bottleneck that the Project seeks to address currently bars the project-affected refineries from using more of their existing capacity like the Chevron Richmond refinery and other West Coast refineries.66 If the Project allows the affected refineries to reach the West Coast capacity utilization rate, a reasonable lower-bound assumption, a 2.4% increase in import and export volume can be expected.67 By contrast, a reasonable upper-bound assumption would be the utilization rate of the Chevron Richmond refinery, with a 9.2% expected increase in import and export volume. Between these bounds, this project can be reasonably expected to support a production increase between 151 and 579 million gallons per year of gasoline and diesel.68 This massive probable increase in imports of crude oil and exports of refined petroleum products necessarily has a considerable climate impact that the DEIS fails to consider. Using data and analysis developed by the California Air Resources Board ("CARB") to estimate the total "well-to-wheel" petroleum fuel chain emissions of carbon dioxide equivalents ("CO2e") from the extraction, refining, transport and combustion of gasoline and diesel refined in California, the above estimates translate to a potential increase of between 1.88 to 7.22 million metric tons of CO2e per year.69 This vastly exceeds the federal climate impact significance threshold of 25,000 metric tons per year used in the DEIS.70 The failure of the Corps to consider the vast climate impact potential of the increase in crude exports likely to be caused by the project renders the DEIS climate impact analysis inadequate. Because the increased depth will allow more fossil fuel to be transported, refined, and burned, the DEIS must include an analysis of the reasonably foreseeable greenhouse gas emissions that will occur. It is reasonably foreseeable that the project will allow oil companies to transport more oil as a direct or indirect result of the deeper shipping channel. The DEIS is inadequate because it fails to quantify, disclose and analyze these impacts.	
Env Groups – 5	**2. The DEIS's Air Quality Impact Analysis is Inadequate** The DEIS also inadequately considers the considerable air quality impacts that the project will cause by increasing refining capacity at project-affected refineries. Much like its incomplete climate impact analysis, the DEIS only considers the air quality impacts of dredging and vessel operations while disregarding foreseeable indirect and cumulative impacts on air quality resulting from increased refinery capacity due to the project.71	The Corps does not expect the proposed channel modification (3-foot deepening) to have an impact on the global supply and demand of crude oil and refined petroleum exports, and therefore would not be expected to have an increase in oil refinery production. Many exogenous factors may influence throughput tonnage at a port including landside development and infrastructure, population and income growth, port logistics and fees, business climate and taxes, carrier preferences, labor stability, and business relationships.

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	As with its climate analysis, the Corps received and ignored input from EPA suggesting it perform analysis on cumulative impacts of the project, including those on refinery operations.72 EPA stated in its April 4 letter to the Corps that the EIS should discuss "potential air quality impacts of the project, including cumulative and indirect impacts. Cumulative impacts include, but are not limited to, those from construction, any increased ship traffic, new capacity for larger ships due to channel deepening, increased truck or rail transport, on-dock equipment use, and **refinery operations**."73 Instead of addressing these cumulative impacts as EPA suggested, the Corps instead only analyzed the air quality impacts of construction and vessel emissions, concluding that criteria pollutants did not cross regulatory thresholds.74 This analysis again fails to consider the indirect and cumulative impacts of the project on refinery operations, namely the air quality impacts associated with the project's increase in refinery capacity utilization. Criteria pollutants like fine particulate matter (PM2.5), sulfur dioxide (SO2), oxides of nitrogen (NOx) and carbon monoxide (CO) co-emit with CO2e.75 Emissions of these pollutants from refineries are correlated with emissions of CO2e from refineries, mainly due to fossil fuel combustion for process energy in refining.76 Therefore, the calculated potential increases in CO2e emissions from refineries discussed in the previous section also serve to estimate the project's increases in criteria pollutants.77 The upper bound of the potential project impact range, a 9.2% increase in refinery capacity, would result in SO2, NOx, and CO levels **three times** the significance thresholds used in the EIS and PM2.5 levels only just below the threshold.78 Such estimates indicate the project could cause significant air quality impacts that the Draft EIS should analyze. Since the Draft EIS does not do so, it is deficient.	Commodity demand is expected to increase with or without a project, leading to more vessel calls to meet demand. However, the proposed improvements would allow for these commodities to move more efficiently through the channel. With the ability of these vessel to transit more efficiently (carrying additional cargo per call), the total number of vessels required to meet the anticipated demand during the period of analysis will decrease compared to the current channel configuration. Since there is not an expected increase in global supply and demand, the air quality analysis remains adequate for the effects of this project. The number of ships is expected to decrease, because the same amount of demand will be able to be transported more efficiently on the same type of ships.
Env Groups – 6	**3. The DEIS's Environmental Justice Analysis is Inadequate** Since the DEIS fails to consider the air quality impacts that the project will cause by increasing refining capacity at project-affected refineries, it also fails to adequately address the effect of this air pollution on the environmental justice communities that live in the project area. While the DEIS does identify that there are minority communities with the project's Area of Potential Effects ("APE") that require an environmental justice analysis, it wrongfully concludes that the project will have no disproportionate impacts to these communities compared to surrounding areas.79 The purpose of an environmental justice analysis is "to determine whether a project will have a disproportionately adverse effect on minority and low income populations."80 "A finding of no significant impacts to the general population is insufficient (on its own) to base a determination that there are no disproportionately high and adverse impacts to minority populations and low-income populations."81 As with all indirect and cumulative project impacts, project impacts on environmental justice communities must be considered in an EIS.82 For example, in *Standing Rock*, NEPA analysis of a pipeline project near an environmental justice community was found to be inadequate because it only analyzed construction impacts on the community and not potential spill impacts.83 *Id*. In the DEIS at hand, the Corps again only considers the air impacts from construction and vessels while ignoring the air impacts from increased refinery operations enabled by the Project.84 According to the DEIS, since "[a]ny operational air quality impact would be equally borne by all populations…there would be no disproportionate impacts to the communities within the APE compared to surrounding areas under the No Action Alternative."85 The DEIS even goes as far to say that the "proposed project would not result in cumulatively considerable impacts when considered in combination with other past, present, and reasonably foreseeable future activities within the APE, the study area as a whole, and the surrounding 7-county region."86 The scope of this analysis is inadequate as it fails to examine the reasonably foreseeable future activities within the APE due to the Project.	The Corps does not expect the proposed channel modification (3-foot deepening) to have an impact on the global supply and demand of crude oil and refined petroleum exports, and therefore would not be expected to have an increase in oil refinery production. Many exogenous factors may influence throughput tonnage at a port including landside development and infrastructure, population and income growth, port logistics and fees, business climate and taxes, carrier preferences, labor stability, and business relationships. Commodity demand is expected to increase with or without a project, leading to more vessel calls to meet demand. However, the proposed improvements would allow for these commodities to move more efficiently through the channel. With the ability of these vessel to transit more efficiently (carrying additional cargo per call), the total number of vessels required to meet the anticipated demand during the period of analysis will decrease compared to the current channel configuration.

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	Increased refinery production and the corresponding increase in air pollution in environmental justice communities is a reasonably foreseeable future activity that must be considered by the DEIS. The DEIS correctly notes several communities within the APE that have a greater percentage of minority residents than the APE as a whole, including refinery communities like Richmond, Vallejo, and Rodeo.87 Table 2-12 notes that the refinery communities of Benicia and Martinez are included in the APE, but does not list them within the table.88 *Id*. The four project-affected refineries are located within the majority-minority communities of Benicia, Rodeo, and Martinez, which means that any increased refinery emissions due to the project will be affecting environmental justice communities as defined under NEPA.89 The increased emissions of criteria pollutants from project-affected refineries discussed in the previous section and the Karras Report are particularly harmful to human health and stand to impermissibly increase mortality rates in these communities.90 Using technical documents from the Bay Area Air Quality Management District ("BAAQMD"), the Karras Report estimates that the potential increase in PM2.5 emissions due to the project could lead to an additional 53 to 201 deaths over a 30 year span compared to a No-Project alternative.91 Such an increase in the mortality rate that would be borne by the minority communities that live near the affected refineries constitutes a foreseeable, disproportionate, and highly adverse risk that constitutes a significant environmental justice impact.92 This is a far cry from the only impact the Corps found on environmental justice communities, which was the "benefits" of the proposed project to "shipping and the general economy including minority and low-income populations."93 The inclusion of this impact and exclusion of any analysis of adverse project impacts to refinery emissions makes the DEIS deficient under NEPA.	
Env Groups – 7	**4. The DEIS Analysis of Dredge Impacts to Wildlife is Inadequate** In the DEIS and accompanying Biological Assessment ("BA"), the Corps inadequately assesses the effects of the Project on regional wildlife and fisheries species. The agency must analyze those impacts in more detail, including the implications of vessel traffic (including ship strikes and noise), water quality, and a reliance on "work windows" to mitigate effects to listed species, especially longfin smelt and Delta smelt. **a) The DEIS Analysis of Impacts to Longfin Smelt and Delta Smelt is Inadequate** The DEIS correctly states that "[m]echanical dredging. . . is generally accepted to entrain far fewer fish than hydraulic dredging because little water is removed along with the sediment and it does not involve any suction."94 The DEIS, however, is unclear whether the Corps will use a mechanical dredge for all dredging conducted under this Project. In Chapter 4 where the Corps analyzes the impacts of the Project, the DEIS indicates that dredging will be done by mechanical dredge.95 But at other points in the DEIS, it appears that the Corps is only committing to use a clamshell dredge in the Bull Head Reach channel.96 In order to fully inform the public, as well as properly evaluate the impacts of the Project, the Corps must clarify when and where the Corps will use a hopper dredge versus a clamshell dredge. Without a complete and accurate description of the Project and all of its components, an accurate environmental analysis is not possible.97 Moreover, the Corps must consider the impacts from maintaining the depth of the Pinole Shoal Channel and Bulls Head Reach, as well as the impacts from the deepening activities themselves. While maintenance dredging of these channels has already been approved by the Corps, as well as other federal and State agencies, maintenance of the channels necessarily changes as a result of the deepening project considered here. The DEIS indicates that a hopper dredge will be used to maintain the depth of the Pinole Shoal Channel.98 Yet the DEIS fails to analyze the impacts from continuing to conduct maintenance dredging using a hopper dredge in the Pinole Shoal Channel. Maintenance of the proposed depth is part of this Project and must be evaluated in the DEIS.	The Biological Opinion (BO) was provided by USFWS on October 3, 2019 and can be found in Appendix G. Environmental commitments related to threatened and endangered species are discussed in the BO. The BO contains one non-discretionary term and condition which is to implement the conservation measures listed on pages 2 and 3 of the BO. These conservation measures are already incorporated into the project description and will be followed. The economic analysis for the project (Appendix D of the Report) indicates that the number of vessel trips may decrease as a result of the project due to more efficient loading, so ship strikes would not be expected to increase. The effect of noise from multiple sources is discussed in section 5.4 (third paragraph) of the BA/EFH assessment (Appendix G of the Report). The sound analysis was completed using the construction assumptions and latest NMFS guidance for marine mammals. Turbidity effects are expected to be localized and temporary, and initial testing indicates that dredged sediment is "clean" enough be used for beneficial reuse (section 5 of the BA/EFH assessment). Confirmatory testing will be conducted during the project design phase. As indicated in sections 6.1 and 6.2 of the BA/EFH assessment, the use of the August 1 to November 30 work window at Bulls Head Reach in particular and also June 1 to November 30 work window at Pinole Shoal should avoid most delta smelt (and longfin smelt) spawning. Larvae and juveniles may be encountered during channel deepening activities. We acknowledge longfin smelt in particular may be present year-round at the beginning of section 6.2. Clamshell dredging is the least damaging to smelt, which is why this type of dredge will be used to complete this project, and is approved for use by USFWS under the maintenance dredging

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	The Delta smelt are endemic to the San Francisco Bay-Delta Estuary and were once abundant.99 Recent abundance numbers for the Delta smelt have been at historic lows, and the species is on the brink of extinction.100 Similarly, longfin smelt were once one of the most abundant open-water fishes in the Estuary and were commercially important fish.101 Today the species' numbers have plummeted to record lows in the Bay-Delta.102 Longfin smelt abundance in 2018 (the most recent year of sampling) were less than 1% of the levels detected when sampling began in 1967; the population has declined approximately 20% since it was listed as threatened by the State of California in 2009.103 While most of the decline of Delta smelt and longfin smelt is due to water diversions, dredging, by physically altering and causing entrainment, also harms these imperiled species.104 In a previous study evaluating the impacts of maintenance dredging in the Bay, the Corps estimated that up to 29 percent of the annual population abundance of Delta smelt and up to 8 percent of the annual population abundance of longfin smelt could be entrained by maintenance dredging operations.105 Thus, the impacts from using a hopper dredge to conduct maintenance dredging will be significant and must be evaluated and mitigated for in the DEIS. The Corps also must discuss in more detail the behavioral implications of ship traffic on Delta and longfin smelt. While noting that "[g]eneral disturbance from barges, dredging crew and tugs is expected to disturb any delta or longfin smelt in the surrounding area," the Corps fails to discuss the significance of the fishes' response to such disturbance—including the "exhibit[ion of] a startled response, followed by escapement from the area."106 Given the rapid decline and record low numbers of Delta smelt in the region, the Corps must conduct a more searching analysis of the ways in which sublethal harms might affect the long-term population viability of smelt species.107	EA for the Bay-Delta. For juvenile crabs, entrainment rates have been estimated up to 300 times lower for clamshell dredging compared to hopper dredging (Reine and Clark 1998); no data are available for small fish. As stated in section 5.1 of the BA/EFH assessment (Appendix G of the Report), "While individual fish have the potential to be struck or entrained by clamshell bucket as it falls through the water column to the channel bottom, the falling bucket would generate a pressure wave around it that would force small fish away from the falling bucket. As a result of the pressure wave, mechanical clamshell dredging has a very low risk of entraining fishes (Reine and Clarke 1998). As such, the use of a clamshell dredge minimizes the risk of fish entrainment for all fishes. " Given that the channel is highly disturbed and largely homogeneous, deepening the channel from approximately 35 to 38 feet over the project footprint is not expected to meaningfully change the character or quality of the habitat. Most effects such as turbidity and removal of food organisms would be temporary and localized. The beneficial reuse of dredged sediment is expected to increase the production of benthic food organisms over the long term (see section 5.2 of the BA/EFH assessment). Clamshell dredging will be utilized exclusively by this project (i.e., channel deepening of Pinole Shoal as well as Bulls Head Reach), which unlike maintenance dredging is not required to take the federal standard into consideration. The federal standard, defined as the least costly dredge material disposal or placement alternative identified by USACE that is consistent with sound engineering practices and meets all federal environmental requirements (33 C.F.R. §335.7), is hopper dredging for San Francisco, San Pablo, and Suisun bays. Ongoing maintenance of Pinole Shoal will continue using a hopper dredge, whereas ongoing maintenance of Bulls Head Reach is expected to occur using a clamshell dredge as has been required by USFWS since 2017. We have clarified this in sections 2, 3, and 5 of the Report. The effects of future maintenance dredging of Pinole Shoal using a hopper dredge have been assessed as part of the Long Term Management Strategy (LTMS) for dredging in San Francisco Bay from fiscal year 2015 through fiscal year 2024 (LTMS FEIS 2015; https://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/dredging/Fed%20Nav%20Channels_FEAEIR_April%202015.pdf). Although the average amount of sediment dredged at Pinole Shoal is expected to increase from 255,000 cy to 351,800 cy during each *biennial* dredging event, this is well within the range of 80,000 cy to 487,000 cy dredged *per year* from 2000 to 2012 (see Table 2-3 of the LTMS FEIS 2015). The behavioral response of delta smelt or other species to dredging activity likely would allow avoidance of physical injury or entrainment from direct contact with dredging equipment or vessels, but it also may temporarily cause disorientation or reduced ability to feed or avoid predators. Alternatively, the disturbance from the dredging activity may increase the availability of benthic food organisms or provide concealment from predators due to the increase in turbidity and suspended sediment. Smelt spawning will not be affected as it occurs upstream in fresh water and mostly outside of the work windows. Overall, the effects of dredging activity on fish behavior are expected to be non-lethal, temporary, and localized. Population-level effects from reduced ability to spawn etc. are not anticipated.
Env Groups – 8	**b) Vessel Traffic Implications** In the DEIS, the Corps assumes that deepening the channel will lead to reduced overall vessel traffic (specifically a reduction in Panamax medium class vessels).108 The DEIS's assumption is not based on any evidence nor is there a legally binding limit that would restrict the number of vessels.	The Corps does not expect the proposed channel modification (3-foot deepening) to have an impact on the global supply and demand of crude oil and refined petroleum exports, and therefore would not be expected to have an increase in oil refinery production. Many exogenous factors may influence throughput tonnage at a port including landside

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	As described above, the greater likelihood is an increase in movement of petroleum products both into and out of the Bay. Any number of factors could lead to an increase in the number of vessels transiting beyond what is forecast and analyzed in the DEIS, with a concomitant increase in vessel impacts on fish and wildlife species.109 Even assuming the overall reduction in vessel traffic holds, the DEIS nonetheless forecasts a slight increase in the number of larger Aframax and Suezmax vessels.110 The increased presence of these larger vessels—in addition to a potential increase in size or number of accompanying tending vessels—may introduce significantly more noise into the marine environment, particularly if they have larger positioning thrusters and propulsion units.111 The threat to marine mammals of ship strike also would increase with any increase in large vessel traffic enabled by the proposed dredging project. Effects of ship strike and noise are discussed in more detail below. **(1) Ship Strikes** The Corps entirely fails to analyze the threat that shipping traffic associated with this navigation channel poses to marine mammals. Ship strikes serve as a primary cause of mortality for large whales worldwide.112 Large vessels (i.e., those ≥ 80 m, which includes Panamax, Aframax, and Suezmax) are responsible for most of the collisions leading to whale death or severe injury.113 For imperiled populations, "death from vessel collisions may be a significant impediment to population growth and recovery."114 The ports of San Francisco Bay harbor extensive shipping activity.115 Incoming ship traffic transits several ecologically rich areas including Cordell Bank, Gulf of the Farallones, and Monterey Bay National Marine Sanctuaries.116 These areas provide important habitat for blue whales (Balaeonoptera musculus), humpback whales (Megaptera novaeangliae), and gray whales (Eschrichtius robustus).117 Both blue and humpback whales are listed as endangered under the U.S. Endangered Species Act. In an analysis of ship strikes off the West Coast of the continental United States, scientists found that "the majority of strike mortality occurs in waters off California, from Bodega Bay south and tends to be concentrated in … designated shipping lanes leading to and from major ports."118 Shipping lanes off San Francisco pose one of the highest ship strike risks.119 Between 2005 and 2014, the National Oceanic and Atmospheric Administration (NOAA) documented 15 ship strikes of blue, humpback, and gray whales off San Francisco.120 Given that ship strikes rarely are detected, the actual number is likely much higher.121 The Corps forecasts that the proposed dredging project will lead to an increase in the number of larger Aframax and Suezmax vessels.122 Larger vessels traveling at proportionately higher speeds as they transit to the navigation channel pose a greater risk of harm to marine mammals from ship strikes, as well as the noise impacts described below. Given the grave risk to whale species, including endangered blue and humpback whales, the Corps must analyze how the proposed project may affect ship strike risk.	development and infrastructure, population and income growth, port logistics and fees, business climate and taxes, carrier preferences, labor stability, and business relationships. Commodity demand is expected to increase with or without a project, leading to more vessel calls to meet demand. However, the proposed improvements would allow for these commodities to move more efficiently through the channel. With the ability of these vessel to transit more efficiently (carrying additional cargo per call), the total number of vessels required to meet the anticipated demand during the period of analysis will decrease compared to the current channel configuration. In the Economic Appendix, the number of Aframax and Suezmax vessels remains constant throughout the period of analysis. These vessels have design drafts of as much as 57 feet, and arrive in Northern California only after having lightered elsewhere, typically Southern California. Even with a deeper channel, it will still generally make economic sense for these larger vessel classes to continue to lighter at a deeper facility before arriving at one of the project area refineries. The economic analysis for the project (Appendix D of the Report) indicates that the number of vessel trips may decrease as a result of the project due to more efficient loading, so ship strikes would not be expected to increase.
Env Groups – 9	**(2) Noise** The Corps also must conduct a more searching analysis on the effects of project-associated noise on regional wildlife and fisheries species. Noise associated with the dredging project itself will be produced by clamshell dredges, tugboats, and a pneumatic jackhammer.123 Even assuming peak SPLs from these sources do not result in lethal harms to fishes (as asserted by the Corps), smelt, salmonids, and green sturgeon might experience behavioral disturbances including reduced foraging, reduced ability to avoid predators, and increased flight/avoidance behavior, as well as neurological stress and hearing threshold shifts.124 The Corps must discuss in more detail the individual- and population-level implications of such sublethal harms, by themselves and in conjunction with other stressors such as climate change.125	The Corps used the latest NMFS guidance to assess the effects of noise on wildlife. Please see Appendix G for the Biological Opinion and NMFS Letter of Concurrence.

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	Marine mammals likewise stand to be impacted by the proposed dredging operations.126 California sea lions (Zalophus californianus) and harbor seals (Phoca vitulina) use the project area and stand to be directly impacted by dredging operations.127 Potential impacts include changes in feeding, breeding, and predator-avoidance behaviors; flight/avoidance behavior; and changes in dive times, migration routes, and swimming speeds.128 The Corps' statement that "marine mammals are highly mobile and would likely avoid areas of noise and disturbance from dredging operations," constitutes an insufficient analysis of the implications of project-related noise on marine mammals.129 Relocations are not without cost. Marine mammals must expend energy to move and may relocate to less desirable habitat (e.g., less prey, more threats from ship strikes or predators). While the Corps' notes this in theory, it fails to discuss the implications of these harms in sufficient detail.130 Noise associated with the project also will come from the ships utilizing the navigation channel—both while the vessels are transiting the channel and during their approach. While acknowledging that "commercial shipping vessels present under baseline conditions can produce continuous noise in the range of 180 to 189 dB which exceeds the NMFS thresholds for adverse behavioral effects to fish and marine mammals," the Corps neglects to adequately analyze how shipping noise associated with use of a deepened channel will affect regional wildlife.131 Kaplan and Solomon (2016) estimate that commercial shipping noise could increase by 87-102% by 2030 due to the combined effects of an increase in the volume of goods shipped, an increase in larger and noisier ships, and an increase in distance goods are shipped.132 Oil tankers noise specifically is projected to increase by 11%.133 Because much of the increased noise pollution will be concentrated near harbors and shipping lanes including those in and around San Francisco, it is particularly important that this proposed dredging project address the issue of noise pollution from commercial shipping in more depth. Any increase in shipping noise threatens marine mammal species resident in the San Francisco Bay area, including endangered blue and humpback whales. Noise generated by commercial shipping reduces marine mammals' ability to communicate, locate prey, and navigate within their habitat, and induces behavioral change. The Corps must discuss these impacts in the DEIS. The Corps also should consider developing and implementing a noise budget to protect vulnerable wildlife and fisheries species from noise pollution generated by ship traffic associated with this navigation channel.134 Quantitative management targets identified under the budget could form the basis for regulations or incentive-based sound reduction initiatives.135	
Env Groups – 9	**c) Water Quality** According to the Corps, "[w]ater quality variables … potentially affected by dredging operations include turbidity, dissolved oxygen, nutrients, salinity, temperature, pH, and concentrations of trace metals and organic contaminants if they are present in the sediments."136 Water quality degradation associated with the proposed project is expected to impact Delta and longfin smelt, salmonids (including steelhead and Chinook salmon), and green sturgeon.137 While acknowledging the potential water quality implications of the proposed project, there currently exist several gaps in the Corps' analysis. These gaps are discussed in the following subsections. **(1) Turbidity, Temperature, DO, Nutrients & pH** Dredging resuspends sediment and associated organic material, which can lead to temporary increases in turbidity and nutrients, reductions in dissolved oxygen ("DO"), and/or changes in temperature and pH.138 The Corps inappropriately minimizes the significance of sublethal harms to wildlife and fisheries species associated with these processes. Such harms to smelt, salmonids, and sturgeon include, but are not limited to, gill damage, body abrasion, reduced reproductive success, reduced visibility, decreased predator avoidance, modified territoriality, altered feeding	Sediment Testing: The USACE routinely conducts sediment testing in the Bay and Delta as part of its navigation maintenance data. The samples are collected from the sediment horizon above the authorized channel depth which is made up of recently accumulated sediments so the timing of the sampling and the dredging events should be close in time. When assessing the quality of sediments from a deepening project, the sediment horizon is below previous dredging depths so the material is generally not affected by anthropologic activities. As such, the date of the sampling and analysis of sediments to be dredged as part of a deepening project is less critical as long as the analytical methods are similar to those samples tested more recently. The 1997 dataset used to assess the quality of deepening material was processed using the same analytical methods that are presently used when collecting new samples for analysis. For this reason, the Corps believes the 1997 dataset is useful in assessing the quality of the project dredge material. During design, additional sampling and analysis will be done and provided to

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	and homing behavior, and flight/avoidance response.139 The cumulative effects of these and other stressors may lead to a host of harms including reduced reproductive output, immunosuppression, and increased mortality. The Corps must discuss expected effects on regional fish populations in more detail. Increased turbidity and dredging activity also have the potential to disturb marine mammal foraging activities. The Corps declares such effects inconsequential because marine mammals "forage over large areas of San Francisco Bay and the ocean and can avoid areas of temporarily increased turbidity and dredging disturbance."140 As discussed above in the context of ocean noise, such relocation is not without cost. The animals must expend energy to relocate, and distribution of prey is not uniform across time and space. Other threats to marine mammals may loom (e.g., ship strikes, predators) in the areas to which they relocate. The Corps must conduct a more searching analysis of potential dredging-related impacts to marine mammals. The Corps does refer to techniques that can be used to limit these effects, such as slowing the dredge cycle, using silt curtains, and employing particular dredge bucket design.141 The Corps fails, however, to discuss whether these techniques will be employed to minimize harms to aquatic life including the Delta and longfin smelt.142 The Corps should provide more information on any required mitigation of these resuspension effects. **(2) Contaminant Resuspension** The resuspension of contaminated sediments accompanying the proposed dredging project poses a substantial risk to marine life in the project vicinity, including the endangered Delta smelt, candidate species longfin smelt (Spirinchus thaleichthys), steelhead, Chinook salmon, and green sturgeon.143 Such resuspension also poses a threat to marine mammals, which—due to high levels of body fat—tend to bioaccumulate lipophilic contaminants.144 Benthic sediments like those underlying the greater San Francisco Bay area act as a sink for anthropogenic contaminants including heavy metals (e.g., copper, lead, cadmium and zinc), polycyclic aromatic hydrocarbons, phthalates, and persistent organic pollutants ("POPs") including polychlorinated biphenyls (PCBs), pesticides (e.g., DDT), and flame retardants (PBDEs).145 Dredging resuspends seafloor sediments, remobilizing a fraction of the contaminants and making them bioavailable to aquatic life.146 This bioavailability and uptake can have devastating ecological consequences. For example, remobilized metals like copper and zinc pose a threat to salmon at very low concentrations. Many POPs, including PCBs, bioaccumulate in the fatty tissues of animals and biomagnify up the food chain.147 Studies of pinnipeds—like the California sea lions and harbor seals occupying the project area—have demonstrated that elevated POP concentrations lead to reproductive impairment, endocrine disruption, immunotoxicity, neurotoxicity, and skeletal abnormalities.148 A growing body of evidence suggests that organochlorine chemicals put cetacean species at risk for similar toxic responses.149 Indeed, scientists studying other cetacean populations have found an association between high PCB-concentrations in females and low recruitment, which in turn leads to declining abundance.150 Despite the threat posed by contaminant resuspension, the Corps downplays the risk, stating that "sediment in the study area generally has low levels of contamination and does not contribute to significant environmental risks when dredged."151 The Corps relies on "historic sediment testing" in support of its conclusion.152 This historic testing, however, appears to be highly out of date. For example, the Corps refers to sediment samples taken in Pinole Shoal and Suisan Bay in 1997.153 The Corps cannot rely on such outdated data to support the conclusion that there would be no primary, secondary, or cumulative water quality impacts from dredging.154 Nor can the agency rely on "additional sampling [to] occur during the Preconstruction, Engineering, and Design (PED)	the relevant regulatory agencies (RWQCB, USEPA, etc.) to confirm that dredging and placement of the material will be environmentally acceptable.

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	phase of this project to confirm" its no-effect conclusion. Instead, the Corps must conduct water quality sampling prior to approving the Project and present the data to the public so that dredging project impacts, including contaminant impacts, can be properly analyzed. Should the project move forward, the Corps should commit to a more frequent, scheduled sampling program to ensure water quality does not degrade over time.	
Env Groups – 10	**(3) Water Quality and Climate Change** The Corps also must consider how climate change may increase exposure to and bioaccumulation/ biomagnification of certain contaminants in marine organisms including the Chinook salmon. These increases in exposure or bioconcentration may occur (1) as climate change increases contaminant exposure or sensitivity, and/or (2) when contamination leads to an increase in susceptibility to other climate change effects.155 Alava et al. (2018) estimate climate-induced contaminant amplification Chinook salmon to be on the order of 10%.156 The Corps must consider how the proposed dredging and any associated contaminant resuspension would interplay with climate change effects and potentially harm resident fish and wildlife species.	Climate change is likely to reduce annual water runoff by 10%, likely directly correlated to the referenced Chinook salmon increase in contaminant concentrations. This project is likely to result in chinook salmon being exposed to greater proportion of saline water which generally would have lower concentrations of agricultural contaminants which would lessen the impact of climate change. The additional dredging activity due to increased O&M would also have a minimal and likely unmeasurable impact on biomagnification/bioaccumulation in salmon. The initial deepening dredging activity would have no measurable impact on chinook salmon contaminant concentrations.
Env Groups – 11	**d) Work Windows** The Corps' reliance on "work windows" to avoid fisheries harms is misplaced. The Corps attempts to minimize anticipated harms to smelt by asserting that dredging and related activities will occur in designated "work windows."157 Working in these windows is not mandatory, however, and will only occur "to the extent practicable."158 The Corps historically has shown a "continuing need" for work window extensions in some areas of the Bay "year after year."159 Thus smelt and smelt critical habitat may not be adequately protected from project activities. Likewise, out-migrating Chinook might be affected by dredging activities that fall outside the work window.160 Even when employed, these windows may not be protective of resident species. For example, work windows fail to protect longfin smelt in Bulls Head Reach as the species occupies this area year-round.161 Adult winter-run Chinook may be in the action area if they migrate to spawning grounds in June.162 The Corps should discuss in more detail its historical record of complying with work windows in this particular navigation channel, as well as impacts that might result should work windows not be practicable. Furthermore, the Corps must conduct ESA Section 7 consultation with the National Marine Fisheries Service (NMFS) and the US Fish and Wildlife Service (FWS) to ensure against species jeopardy.163	The Corps coordinates working within work windows or any extensions through the USFWS. The Corps began consultation on this project May 10, 2019 with USFWS and NMFS, as discussed in Section 6 of the draft EIS. This channel deepening project does not fall under LTMS, and therefore work window extensions likely will not be permitted.
Env Groups – 12	**5. The DEIS Analysis of Impacts from Reuse of Dredge Materials is Inadequate** As with the type of dredging equipment, the DEIS is unclear to what extent the dredged material from Pinole Shoal Channel and Bulls Head Reach will be beneficially reused. When evaluating impacts, the DEIS states that the dredged material will be beneficially reused.164 Yet, in other places, it appears that at least some of the dredged material will be placed at in-bay disposal locations, SF-10 or SF-16.165 The Corps must clarify what portion of the sediment dredged during the construction phase and/or operation phase of Project will be beneficially reused. Again, the operation phase (*i.e.*, maintaining the navigational channels at the increased depth) is part of this Project and must be evaluated in the DEIS. The DEIS also leaves open the possibility that some of the dredged material will be disposed of at SF-DODS, which is 55-miles off the coast of the Pacific Ocean.166 "Placement of material at SF-DODS is not ideal since it takes material out of the natural system, while both Cullinan Ranch and Montezuma Wetlands both can beneficially use the material and are cost effective. While SF-DODS is not carried forward as a placement site, it is worth mentioning that it is an available placement site if needed, if there are no other beneficial use sites with available capacity prior to	The EIS states that all dredged material will be used beneficially, at Cullinan Ranch or Montezuma Wetlands, which are currently in use, permitted, and have their own EIS's under which the effects to their project are discussed. The construction material dredged from the proposed project will be beneficially reused, while any future maintenance dredging will continue to be placed in the current O&M placement areas of SF-10 and SF-16. O&M is covered under the EA/EIR for Maintenance Dredging of the Federal Navigation Channels in San Francisco Bay Fiscal Years 2015–2024. The Corps does not plan to use SF-DODS, initial construction material will be placed at a beneficial reuse site.

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	construction."167 Commenters agree with the Corps that using SF-DODS is "not ideal" because taking material out of the Bay system exacerbates the Bay's existing sediment deficit, reduces the sediment available for natural wetland replenishment and wetland restoration, and increases the impacts from rising sea levels and storm surges. In addition, transporting sediment to SF-DODS will greatly increase greenhouse gas emissions. Assuming the Corps intends to dispose of all its dredged sediment in a wetland restoration site, the Project is not likely to increase that sediment deficit and resulting impacts in the Bay. However, if the Corps were to take a portion or all of the dredged sediment to SF-DODS, the impacts of taking the sediment out of the natural system would be potentially significant, and the Corps must evaluate such impacts prior to taking that action.168	
Env Groups – 13	**6. The DEIS's Analysis of the Risk of Spills Is Inadequate** The proposed project threatens to increase the risk, severity and the magnitude of oil spills in the Bay Area. The DEIS does not provide credible evidence to support its claim that the project will "reduc[e] the risk of spills."169 Data show that there are scores of spills from oil-carrying vessels each year.170 In the Bay Area, there have already been two major oil spills from vessels in recent history. In 1971, two oil tankers collided near the Golden Gate Bridge, spilling 800,000 gallons of bunker fuel into the Bay. Then in 2007, a container ship struck the Bay Bridge and spilled 58,000 gallons of bunker fuel into San Francisco Bay. San Francisco and the surrounding areas are frequently inundated with heavy fog, making ship navigation particularly risky. Lesser known, but more frequent spills have contributed to "chronic" oil pollution in California.171 An oil spill would be catastrophic for the Bay Area. People who reside, work, and recreate in and around the Bay Area waters will be harmed by a spill. The region's tourism industry will also suffer. Tourism (beach recreation, camping, kayaking, hiking) and eco-tourism (e.g., marine mammal watching) are major economic opportunities along the West Coast for coastal communities.172 California's $45 billion-dollar coastal economy has a lot to lose to a spill.173 California commercial fisheries for instance, produced from 186-361 million pounds of fish from 2013-2015, at a value of $129-$266 million.174 After the 2007 disaster, when the container ship Cosco Busan spilled 53,000 gallons of oil into San Francisco Bay, the Governor closed the fishery, a significant portion of which was either contaminated or killed, closed more than 50 public beaches, some as far south as Pacifica, and thousands of birds died. All told, that spill resulted in more than $73 million in estimated damages and cleanup costs.175 An oil spill by one of the ships carrying the maximum volume of oil allowed under this dredging project would be many times larger. Finally, the many imperiled species that depend on clean water for their fragile ecosystem will be harmed, and the damage may be irreparable. **a) The Project May Increase the Risk of Spills** The DEIS's conflicting statements about the risks of spills renders the analysis inadequate. For example, the DEIS claims that a deepened channel will improve safety, but it is unclear why. A deepened channel will not improve safety if companies use larger ships and the under-keel clearance remains the same. The DEIS does not contain any mitigation measures that would limit vessel calls or vessel sizes. Consequently, its projections related to those statistics are unsupported. To the contrary, refineries in the area have indicated that they are preparing to accept greater numbers of vessels and greater sizes of vessels. For example, Phillips 66 plans to increase the volume of crude oil it processes in the coming years.176 Other refineries are similarly making changes to their refineries to increase throughput capacity or their capacity to process different types of crude. The DEIS, which appears to be based on outdated information,177 should be updated to reflect these recently disclosed plans.	With a projected decrease in ship traffic due to the proposed project, logically, the risk to oil spills would be decreased as well. A heavier load does not lead to an increased risk in oil spills.

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	A recent spill at one of the four refineries the Project would subsidize, Phillips 66 in Rodeo/Crockett, serves as a warning of what could result from increased marine terminal operations. According to press reports, "BAAQMD issued two 'public nuisance' violations to Phillips 66 for its Sept. 20, 2016 spill, which leaked oil into the bay and sent an estimated 120 people to the hospital from fumes."178 That spill, which occurred while the Yamuna Spirit was offloading at the Phillips 66 Marine Terminal in Rodeo, was responsible for more than 1,400 odor complaints and a shelter-in-place order for the 120,000 residents of Vallejo.179 In addition, the DEIS contains inadequate analysis of what *other* types of vessels may utilize the newly deepened shipping channel. Historically, other types of vessels have caused a significant portion of oil spills in the Pacific Economic Exclusion Zone.180 **b) The Project May Increase the Severity of Spills** Once oil is spilled, mechanical recovery rates seldom exceed 20%.181 Even more troubling, the DEIS does not analyze the risk of a spill from non-floating oil. Yet area refineries have indicated that feedstocks may incorporate larger portions of non-floating crude feedstocks such as Canadian tar sands oil (mainly diluted bitumen, or "dilbit") in the future. Just recently, the Canadian government took a significant step toward increasing its tar sands exports to the U.S. West Coast by approving the Trans-Mountain Pipeline.182 The pipelines would vastly increase tar sands pipeline capacity from 300,000 to 890,000 barrels of oil per day shipped to the West Coast of Canada.183 Tar sands refining could increase drastically in California if refining capacity in the Bay Area increases. In fact, the tar sands industry's expansion plans rely on California's refinery capacity, partially because Gulf Coast heavy crude refining capacity is more limited. The Kinder Morgan Canada Initial Public Offering Prospectus, which offered investors stock in the company being formed to hold the Trans-Mountain Pipeline Expansion Project (and several other assets), detailed expected markets for the tar sands crude that would fill the pipeline's additional capacity: At an estimated total capital cost of approximately $7.4 billion (including capitalized financing costs), upon completion, the Trans Mountain Expansion Project will provide western Canadian crude oil producers with an additional 590,000 barrels per day of shipping capacity and tidewater access to the western United States (most notably Washington, California and Hawaii) and global markets (most notably Asia).184 The prospective specifically addresses refineries in California: [R]efineries in Washington State and California, which comprise an important point of sale on the U.S. West Coast, have, in the past, been supplied primarily by crude oil from the Alaska North Slope. As such, there has historically been some competitive pressure on supply originating from the [West Canadian Sedimentary Basin ("WCSB")] for sale in the Washington State and California refinery markets … due to recent changes in U.S. legislation, oil from the Alaska North Slope may now be sold to markets outside of the United States. To the extent this additional access to alternative markets for Alaskan producers increases overall demand from Washington State and California refineries, the [Trans Mountain Pipeline, TMPL] system, through its Puget Sound pipeline connection to four refineries in Washington State, will be in a position to facilitate supply to such markets for WCSB producers. As evidence of these competitive advantages, capacity on the TMPL has been over-subscribed since 2010 and approximately 80% of the capacity of the TMPL upon completion of the Trans Mountain Expansion Project is subject to long-term firm commitments.185 This project could accelerate that transition by allowing more Canadian tar sands, which are non-floating crude oils, to be transported through the Bay Area. Previous environmental studies have shown that a spill of submerged oil would prove disastrous for the area by being "almost	

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	impossible" to contain.186 Yet this is exactly the type of risk that will increase as refineries increase the volume of Canadian tar sands they refine. The risk to water and wildlife is simply unacceptable. The U.S. EPA recently noted that spills of diluted bitumen require different response action and equipment than conventional oil spills.187 Years after a major spill of diluted bitumen into the Kalamazoo River in Michigan, heavy oil remained at the bottom of the river. Resource- intensive cleanup is required to remedy the damage caused by the Kalamazoo oil spill, amounting to $1 billion in costs to public funds.188 Furthermore, at least one other previous environmental study disclosed that no one is trained to address this type of spills, nor is it clear that there is equipment that can be used to effectively contain the spill.189 There is very little publicly available information about the reaction of dilbit to the marine environment and the organisms and ecosystems found there, and widespread uncertainty remains even as to the most basic questions like whether dilbit products will float or sink over time, what chemicals are contained in dilbit at what concentrations, what response dilbit will have to weathering, and how it will interact with marine species and sediment. Dispersants are not effective at mitigating spill impacts for tar sands.190 Existing techniques for addressing submerged oil spills are ineffective.191 The DEIS contains no information about what impacts a spill of involving Canadian tar sands would have, nor does it include any indication that such a spill could be contained. No reasonable mitigation or planning can be done with regard to the risk posed by the transport of dilbit to the four affected Bay area refineries without specific information as to the chemical composition of the crude oil being transported. Details on the types of oil expected to arrive on the tankers utilizing the deepened channel must be part of the DEIS and must be made publicly available. It is irresponsible to base risk assessment and best practices for the handling of dilbit on assessments and practices for conventional oil without at least knowing what the chemical composition of the dilbit is, including separate information on bitumen and diluent constituents, and how it differs from conventional oil. As indicated above, the available scientific evidence suggests that the type of risks associated with marine spills of dilbit, tars sands, and other sinking oils are wholly different from risks from spills of floating conventional crude oil. Additional research into best management practices, spill prevention practices, and cleanup and response planning is needed before approval of a project that may allow a foreseeable increase in the amount of tar sands coming into California's waters. Even for floating oil, the solvents intended to disperse oil pollution have been found to have environmental impacts of their own. For example the "COREXIT" dispersant used in the BP Deepwater Horizon spill is linked to substantial environmental degradation independent of the oil, and its use has been banned by other countries.192 The DEIS contains no information about what chemical solvents or dispersants may be used to address oil spills, how effective those solvents are, and what environmental impacts are likely from using those solvents. Dispersants and dispersed oil have been shown to have significant negative impacts on marine life ranging from fish to corals to birds. Dispersants release toxic break-down products from oil that, alone or in combination with oil droplets and dispersant chemicals, can make dispersed oil more harmful to marine life even than untreated oil. Neither the short-term nor the long-term impacts of dispersants on marine life have been adequately tested. As acknowledged by the EPA, the "long term effects [of dispersants] on aquatic life are unknown."193 **c) The Project May Increase the Magnitude of Spills** As stated in the DEIS, the project will allow larger ships to transport oil through the area, or alternatively, vessels of the same size will be allowed to carry a greater volume of oil for each ship	

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	call. The increased size of the ships and the greater volume of oil indicate that accidents will be greater in scale than they would be without the project. In sum, the risk of oil spills is greater due to the project's purpose, which is to allow for larger amount of crude oil to be transported through the Bay Area to and from refineries. The DEIS does not comply with NEPA's requirements because it provides inadequate disclosure and analysis of the reasonably foreseeable spill impacts of the project.	
Env Groups – 14	**E. The DEIS Fails to Consider Conflicts with Applicable Laws, Including the California Global Warming Solutions Act Mandate Regarding Shifting GHG Emissions Out of State** The DEIS must consider applicable California and local laws, including the California Global Warming Solutions Act, and it fails to do so. Under CEQ regulations, an agency must review approved State and local plans and laws, and an EIS must discuss any inconsistency of a proposed action.194 Where an inconsistency exists, the EIS must describe the extent to which the project will be reconciled with the plan or law.195 Prominent among California laws, the Global Warming Solutions Act of 2006, or AB 32, fights global climate change by establishing a comprehensive program to reduce GHG from all sources throughout the state. The California Air Resources Board ("CARB") has adopted "greenhouse gas emissions limits and emissions reduction measures … in furtherance of achieving the statewide greenhouse gas emissions limit…."196 In AB 32, California's legislature mandated CARB's regulations "minimize leakage" as one of its goals in setting these limits and measures.197 Leakage, or emissions shifting, is "a reduction in emissions of greenhouse gases within the state that is offset by an increase in emissions of greenhouse gases outside the state."198 The DEIS fails to assess the impact of the Project on emissions shifting. As discussed above and in the Karras Report, the Project will significantly increase exports of refined petroleum products from the Bay Area.199 In increasing exports, the Project will shift GHG emissions from California to export markets. To the extent that the imported and processed crude remains in California for use and combustion, this Project is also inconsistent with California's Low Carbon Fuel Standard (LCFS).200 Assuming the four affected refineries increase use of their unused capacity up to the level of their de-bottlenecked Bay area competitor, they will produce approximately 579 million gallons more gasoline and diesel annually.201 Using CARB's data to estimate the CO2e emissions of gasoline and diesel refined in California, the potential increase is calculated to be between 1.88 to 7.22 million metric tons of CO2e per year.202 The failure of the Corps to consider the vast climate impact potential of the increase in crude exports likely to be caused by the Project renders the DEIS climate impact analysis inadequate. Facilitating sustained or increased capacity at refineries is not only contrary to international climate goals but also to California's own greenhouse gas reduction goals. This project is inconsistent with California's mandates for rapid statewide GHG emissions reductions. California has strict mandates to rapidly reduce emissions to prescribed levels by the years 2020, 2030 and 2045. The Governor's Executive Order B-30-15203 and Senate Bill 32 establish a greenhouse gas emissions reduction target for California of 40 percent below 1990 levels by 2030. Executive Order B-55-18 calls for the state to achieve carbon neutrality as soon as possible, and no later than 2045.204 Senate Bill 100 requires the state to transition fully to renewable and zero-carbon energy by 2045.	The Corps does not expect the proposed channel modification (3-foot deepening) to have an impact on the global supply and demand of crude oil and refined petroleum exports, and therefore would not be expected to have an increase in oil refinery production. Many exogenous factors may influence throughput tonnage at a port including landside development and infrastructure, population and income growth, port logistics and fees, business climate and taxes, carrier preferences, labor stability, and business relationships. Commodity demand is expected to increase with or without a project, leading to more vessel calls to meet demand. However, the proposed improvements would allow for these commodities to move more efficiently through the channel. With the ability of these vessel to transit more efficiently (carrying additional cargo per call), the total number of vessels required to meet the anticipated demand during the period of analysis will decrease compared to the current channel configuration. Therefore, the amount of GHG would not be expected to increase.
Env Groups – 15	**III. Conclusion** The DEIS fails entirely to meet NEPA's requirements. The public was not given adequate notice from the start. Although the Project has hyperlocal, extremely Bay Area specific impacts, the local Corps division in San Francisco is not charged with the effort, but rather an engineering district in Florida is seeking to approve a massive subsidy to Bay Area refiners. Even the "local" sponsor is	Please see responses to Env Groups 1-14 to address the concerns noted in your conclusion.

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	outside the area the Project purports to affect – the DEIS segments off the Richmond to Avon portion of the dredging efforts so it does not reach the Port of Stockton or consider the impacts increasing coal transport out of Stockton will have. Likewise, although the Corps acknowledges the Project is intended to benefit transport of petroleum in and out of the Bay, it fails entirely to consider the effects of increased refinery throughput the ease of transport will bring. The DEIS also fails adequately to describe and consider impacts to climate, air quality, environmental justice communities and wildlife, including endangered species. The DEIS fails adequately to consider water quality impacts, and the significant and foreseeable risks posed by spills of greater volumes and likelihood of increased transport of Canadian tar sands. In sum, the DEIS fails as an informational document.	
Environmental Protection Agency (EPA)	In our previous comments, we indicated that many of our most significant environmental concerns, particularly those pertaining to water quality, would be addressed if US ACE limited the project scope to channels west of Avon. The Draft ETS is generally consistent with this recommendation and EPA appreciates the incorporation of our feedback.	Thank you for your comment.
EPA – 2	**Scope of Analysis** EPA supports USACE's efforts to reduce the proposed project's impacts by limiting dredging to the Pinole Shoal Channel and a portion of the Suisun Bay Channel; however, as noted in the Executive Summary, the Port of Stockton recently notified USACE that they intend to pursue deepening from Avon to Stockton. Cumulative impacts of deepening from Avon to Stockton are briefly noted in this Draft EIS, and, according to page ES-2, the Port of Stockton would prepare a separate California Environmental Quality Act (CEQA) document to evaluate the impacts on a programmatic level. **Recommendations:** In the event that the Port of Stockton and USACE pursue deepening from Avon to Stockton, EPA provides the attached comment letters for consideration. In addition, EPA recommends that the assessment of impacts for deepening from Avon to Stockton explicitly address potential increase in algal blooms and harmful algal blooms (HABs) frequency and intensity due to resuspension of nutrients during dredging. We also recommend clarifying in the Final EIS for this project that deepening from Avon to Stockton would require further NEPA compliance on the part of USACE, as well as the referenced CEQA compliance that would be undertaken by the Port of Stockton.	The Cumulative Effects table 4-22 in the draft EIS states that Avon to Stockton would require their own environmental permits: "The Port of Stockton may propose to deepen the Stockton Deep Water Ship Channel from Avon to the Port of Stockton in the reasonably foreseeable future. The Port would have to address alternatives and their environmental effects through a separate NEPA and CEQA analysis and obtain approvals and permits from the appropriate resource agencies. The project would be responsible for avoidance, minimization, and mitigation requirements determined to be necessary based on the outcome of the NEPA/CEQA analysis completed for the project. At this time, the project is undefined as to the proposal for navigational depth improvements, as well as timing of proposal. "
EPA – 3	**Water Quality and Aquatic Life** **Salinity Intrusion** Impacts Water Quality-06 and Biological Resources-07 assess whether the project would result in any significant adverse impacts on water exports/operations and aquatic life, respectively, due to salt water intrusion into the Delta. Specifically, the Draft EIS employs a threshold of 1 kilometer (kin) to evaluate the project's potential to cause a significant "change" in the location of X2', a water quality standard to protect aquatic life. The Draft EIS (p. 4-23 and p. 4-52) cites the 2010/20 17 Los Vaqueros Reservoir Expansion EIS/EIR and the Environmental Water Account EIS (U.S. Bureau of Reclamation et al., 2003) for this specific significance threshold. The Draft EIS states that it is a reasonable threshold given the inherent uncertainty in the estimate of net Delta Outflow; we note, however, that no further information is provided to justify the appropriateness of this threshold. The Draft EIS characterizes project impacts as "shifting" or "changing" the location of X2. Please note that the impact on X2 due to the proposed project does not actually change the X2 water quality objective itself; rather, it is a measurement of the project's impact on the salinity gradient. Any additional salt water intrusion into the Delta due to the project would need to be offset by State and Federal water projects from other beneficial users in order to maintain X2. **Recommendations for the Final EIS:** • Provide scientific, quantitative rationale behind the use of the 1 km significance threshold	The threshold that was used for this project is the same as the threshold used in the CCWD 2010 EIS for the Los Vaqueros Reservoir. The Corps applied this recently used threshold in order to reduce bias. All appropriate coordination will be completed and permits received prior to construction, the draft EIS was circulated for a 45 day review, and the final EIS will be circulated for a 30-45 day review period providing agencies and the public opportunities to comment.

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	for Impact WQ-06 and BR-07. • Describe the coordination that has taken place between USACE, the California Department of Water Resources, and the U.S. Bureau of Reclamation to ensure that the Bay Delta Estuary continues to meet water quality standards if the proposed project is implemented.	
EPA – 4	**Impacts on Special Status Species** Section 2.2.6.2 of the Draft EIS discusses entrainment monitoring in the Delta from hydraulic-pipeline dredging. EPA understands that USACE has been monitoring entrainment via its self-propelled hopper dredge Essayons, which is routinely used for maintenance dredging of the Pinole Shoal portion of the project area. Confirmation that the Essayons entrains smelt is a key reason that the proposed deepening project will employ only mechanical dredging techniques. The proposed deepening project would result in an increase in future maintenance dredging. Most of the increased maintenance dredging activities would occur in the Pinole Shoal area, where maintenance dredging is proposed to be done hydraulically using hopper dredges such the Essayons. Entrainment of smelt can, therefore, be expected to occur at an increased rate. The significance determinations for impacts BR-O1 through BR-06 are largely based on qualitative assessments using best professional judgment. Such assessments are not as precise as quantitative evaluations. We recognize that data may not be available to conduct quantitative evaluations of each impact; however, there are substantial, inherent limitations in each one of these qualitative assessments. **Recommendations for the final EIS:** Commit to using mechanical dredges for maintenance dredging within the project area if feasible. If this is determined to be infeasible, discuss the need for new, ongoing mitigation for the increased entrainment resulting from the proposed project (i.e., in addition to the conservation credits that USACE has been purchasing each year based on maintenance dredging for the current channel depths). Include a table that contains the number of smelt entrained during the Essayons monitoring by year. Update Impact BR-04 based on entrainment of smelt by the Essayons that has been confirmed through direct monitoring. • In Section 2.2.6.2, clarify that the decision to limit dredging within the programmatically established Long-Term Management Strategy (LTMS) environmental work windows constitutes an important avoidance measure with respect to Special Status Species and **Essential Fish Habitat.** • Disclose limitations associated with the qualitative assessments for impacts BR-O1 through BR-06. We strongly encourage USACE to work closely with NOAA, USFWS, CDFW, and other relevant agencies to obtain the most current information on migration and sensitive life stages in the project area and adjust dredging schedules as necessary to avoid impacts to aquatic species. We further recommend ongoing review of new information on entrainment and impacts to benthic organisms to ensure that impact levels remain insignificant.	Maintenance dredging will be performed under requirements listed in the Final Environmental Assessment/Environmental Impact Report for Maintenance Dredging in the Federal Navigation Channels in San Francisco Bay from May 2015-2024. The Corps is in consultation with USFWS and NMFS regarding this project and essential fish habitat. The Final EIS has an environmental commitments section in 6.4 that commits the Corps to the use of clamshell dredge for this project's construction, working within environmental work windows, and using material for beneficial reuse. Language added to section 4.1.6 on page 4-41 of the main report: "The decision to limit dredging within the programmatically established Long-Term Management Strategy (LTMS) environmental work windows constitutes an important avoidance measure with respect to Special Status Species and Essential Fish Habitat." Section 2 discusses current conditions and does not go into effects, so it was added to chapter 4 instead. We removed the reference to entrainment monitoring in the Delta from hydraulic-pipeline dredging from Section 2.2.6.2 of the Draft EIS and instead discuss the Essayons entrainment monitoring under BR-04 (and added a table) that is more applicable to the project area as it is currently scoped. Future channel maintenance will be addressed under the LTMS program, and we cannot commit to using clamshell dredging. Use of clamshell dredging will continue to be determined on a case-by-case basis. We will continue to work closely with NOAA, USFWS, CDFW, etc. as part of the LTMS to avoid or minimize impacts in light of the latest species-specific information on life history, distribution, and abundance, and to determine any additional mitigation needs. It is unclear what is meant by the comment "the significance determinations for impacts BR-O1 through BR-06 are largely based on qualitative assessments using best professional judgment." We agree that we do not know exactly how many fish will encounter and be affected by the project, and that the effects on an individual may range from zero to (presumably rarely) death. In that sense, virtually all projects in the San Francisco Bay-Delta that affect fish rely on qualitative assessments and best professional judgment, as quantitative uncertainty is the norm. We believe that the limitations of our impact assessments are similar to those of other projects, and are apparent from the discussion in section 4.1.6. We use approved quantitative significance thresholds when available, such as the ones NMFS has provided to assess the effects of noise on marine mammals, or other values from published literature.
EPA – 5	**Algal Blooms and Harmful Algal Blooms** Algal bloom and HABs are occurring more frequently in the Delta and have been observed adjacent to the project area, namely in McNabney Marsh near Avon. Resuspended nutrients could increase the occurrence of algal blooms and HABs, and potentially lead to large swings in diurnal dissolved oxygen.	Because the changes in X2 and tidal flows are minor in comparison to the baseline conditions, the project's is very unlikely to result in any observable impact on duration or intensity. In all, project related effects on algal blooms are expected to be insignificant in comparison to effects caused by other driving factors such as relative sea level rise and general warming trends for ocean water and river flows.

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	Recommendations for the final EIS: Evaluate potential increases in frequency and severity of algal blooms and HABs under Impact WQ-O1. Include mitigation measures for any adverse impacts identified.	
EPA – 6	**Resuspension of Contaminated Sediments** Page 4-16 of the Draft EIS describes various measures that USACE would take to ensure that dredging associated with the project would not resuspend contaminated sediments in the water column and cause any water quality standard violations. EPA strongly supports these project features. We note that adherence to these measures and best management practices will be critical to reducing the potential for water quality degradation. **Recommendations for the Final EIS:** Confirm in the Final EIS and Record of Decision (ROD) that commitments described in Impact WQ-02 will be retained as permanent features of the project to ensure that the project does not degrade water quality.	The USACE will conduct sediment testing during design and will employ best management practices during construction as described in this report as well as contained in permits issued by RWQCB and BCDC to minimize impacts to water quality during construction.
EPA – 7	**Selenium Criteria** As noted in our previous scoping comments, EPA is proposing to revise the current selenium water quality criteria for the San Francisco Bay and the Sacramento-San Joaquin Delta to protect aquatic life and wildlife. We continue to recommend that the EIS for this project include a discussion of these proposed revisions. **Recommendations for the Final EIS:** Include a discussion of EPA's proposed revisions to the selenium water quality criteria for the San Francisco Bay and the Delta.2 Use the proposed or final criteria as the basis for evaluating relevant water quality impacts.	The Corps will include a discussion of EPA's proposed revision to the selenium water quality criteria and evaluate impacts based on the revised standard.
EPA – 8	**Induced Growth** A key assumption embedded within the project's impact analysis is that growth at oil refineries located near the project area would continue at the same rate with or without the project. The Draft EIS does not appear to contain any additional information that was used to validate this assumption. It is unclear whether USACE examined the project's potential to induce growth at the oil refineries located near the project area. If increased transportation efficiencies associated with the project result in an increase in production at these oil refineries, the area could experience additional adverse environmental impacts. **Recommendations for the Final EIS:** Clarify whether USACE evaluated the project's potential to induce growth at the oil refineries that would benefit from this project. In order to provide the public with a more comprehensive understanding of how this project could potentially influence their health, we recommend updating pertinent sections of the environmental effects chapter to reflect a situation where the project would increase production at the refineries (e.g., air quality, water quality, environmental justice sections). Identify appropriate mitigation measures to address any adverse impacts.	The Corps does not expect the proposed channel modification (3-foot deepening) to have an impact on the global supply and demand of crude oil and refined petroleum exports, and therefore would not be expected to have an increase in oil refinery production. Many exogenous factors may influence throughput tonnage at a port including landside development and infrastructure, population and income growth, port logistics and fees, business climate and taxes, carrier preferences, labor stability, and business relationships. Commodity demand is expected to increase with or without a project, leading to more vessel calls to meet demand. However, the proposed improvements would allow for these commodities to move more efficiently through the channel. With the ability of these vessel to transit more efficiently (carrying additional cargo per call), the total number of vessels required to meet the anticipated demand during the period of analysis will decrease compared to the current channel configuration. This is discussed in the economics appendix (D).
EPA – 9	**Air Quality** Most project activities would occur within the San Francisco Bay Area Air Basin (SFBAAB), which is a federal nonattainment area for ozone (marginal) and 24-hour PM2.5 (moderate). Some dredged material is proposed to be placed within a portion of the Sacramento Valley Air Basin that is a federal nonattainment area for 24-hour PM2.5 (moderate) and ozone (severe for the 2008 standard, moderate for the 2015 standard). We understand that the project may have the ability to generate some short-term air quality benefits by using more fully-laden ships; however, given the project's potential to affect vessel traffic and industrial activities in an area that suffers from poor air quality, we encourage USACE to commit to all feasible air quality mitigation measures.	The beneficial use sites contain their own permits and NEPA for air quality and environmental compliance. The Corps has considered mitigation measures for air quality, and concluded that there is a less than significant impact under NEPA, as well as no reasonable mitigation opportunities for this project. Therefore, the project does not intend to or need to mitigate for the temporary construction impacts to air quality. These assumptions can be revisited during the permitting process if necessary.

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	Recommendations for the Final EIS: • Include the following mitigation measures: o Use an electric clamshell dredge during the project's construction phase if feasible. o Require refineries and other commercial ports to grant priority access to cleaner tankers (i.e., IMO Tier III, the equivalent of U.S. Tier 4). o Require refinery and port docks to be outfitted for shoreside power. o Refineries and ports should commit to commercial harbor craft capable of meeting all emissions limits by 2022. o In order to reduce emissions and fatal strikes on whales, require tankers to slow to 10-12 knots when entering the San Francisco Bay. • Include a discussion of the North American Emissions Control Area, which limits the sulfur content in fuel for U.S. and international ocean-going vessels operating within 200 nautical miles of the U.S. coast.4 • Update Table 4 of the Air Quality Report in Appendix G to reflect the current 2015 federal ozone National Ambient Air Quality Standard (NAAQS), which is 0.070 ppm. • Update Table 5 of the Air Quality Report in Appendix G to show that the SFBAAB is in nonattainment for the 24-hour PM2.5 NAAQS. Include an air quality attainment status summary table in the main report.	
EPA – 10	**Operational Emissions** Operational emissions estimates included in the air quality section of the Draft EIS suggest that the project will result in a reduction in criteria pollutant emissions due to a decrease in vessel traffic (Table 4-8, p. 4-33); however, it is unclear whether all relevant emissions were accounted for in this analysis. For example, the climate change impact analysis indicates that the project would result in an increase in greenhouse gas emissions, primarily driven by increased operation and maintenance (O&M) activities to support the deeper channels (p. 4-41). The operational emissions analysis in the air quality impact section does not appear to include emissions from increased O&M activities. The Draft EIS appears to contain inconsistent information regarding the proposed project's impact on vessel activity. Table $ of the Economic Analysis (Appendix D) indicates that the project would not affect vessel traffic for larger oil tanker classes (Aframax and Suezmax); however, Table 4.21 of the Draft EIS indicates that the project would result in an increase in Aframax and Suezmax vessel calls compared to the No Action Alternative. It appears that emissions from these vessels were excluded from the project's air quality impact analysis. **Recommendations for the Final EIS:** Revise the air quality impact analysis to account for all emissions associated with the project. For example, please include emissions from increased O&M activities and from any Afrarnax and Suezmax vessels that would be affected by the project, as well as any tugboats that would accompany them. Discuss mitigation measures for any adverse air quality impacts identified. Ensure that all sections and appendices consistently and accurately reflect the forecast vessel count for future with and without project conditions.	There would not be increased frequency of O&M events. Greenhouse gas emissions were assessed for dredging during initial construction, which would be temporary for a period of 5 months.
EPA – 11	**Dredged Material Management** EPA strongly supports USACE's commitment to beneficially reuse all dredged sediment generated by this project, contingent on the final suitability determination, to further ecosystem restoration efforts in the San Francisco Bay Area. Page 2-61 describes the project's proposed dredged material placement strategy, which focuses reuse at the Cullinan Ranch Tidal Restoration Site and the Montezuma Wetlands Restoration Project. As noted in this section, beneficial reuse would assist in reducing the project's salinity impacts to a less-than-significant level (p. 2-6 1). In light of various complications that may arise with implementing proposed beneficial reuse, EPA recommends that	The Final EIS will remain consistent with beneficial reuse as part of the project description. The Corps will use the dredged material at Cullinan Ranch or Montezuma. If the sites are not available at the time needed, other sites will be considered, such as Delta Islands. The price of taking the dredged material to Delta Islands has not been costed, but if it is more than Cullinan or Montezuma, Delta Islands may need to contribute to the cost of transport.

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	the Final EIS demonstrate how USACE would reuse all dredged sediment associated with the project. **Recommendations for the Final ElS:** • Confirm in the Final EIS and the ROD that USACE will beneficially reuse all sediments generated by this project. • Discuss complications that might arise at the proposed reuse sites, and how the reuse commitment will be achieved if complications occur. o Address the possibility that the identified sites may not have sufficient capacity available when project construction commences. o Identify what will occur if final sediment testing indicates that some material is not suitable for the proposed reuse sites (e.g., transported to other placement sites). Please note that EPA will not concur on ocean disposal of any sediment that could practicably be reused, even if reuse costs are greater than initially assumed, or if minor construction delays occur. • Consistent with our comments on USACE's 201$ Delta Islands and Levees Final EIS, we continue to recommend that USACE evaluate the Delta Islands Restoration Project as a potential reuse option for this project. • Update the description of the LTMS on page 1-5 to include its goals to reduce in-Bay disposal and maximize beneficial reuse of dredged material.	
EPA – 12	**Increased Maintenance Dredging Requirements** The project would result in a 230,500 cubic yard (cy) increase in annual maintenance dredging volume. 55,000 cy would be disposed at the SF-15 in-Bay disposal site, and 176,000 cy would be disposed at the SF-b in-Bay disposal site. Section 4.1.2 of the Draft EIS concludes that, because this volume increase is "only 1.2 percent of the average annual sediment flux to San Francisco Bay", the effect would be insignificant (p. 4-1 1). EPA believes that it would be more appropriate to evaluate the project's impacts based on the project's increased reliance on in-Bay disposal sites with respect to the available disposal site capacities. The maximum allowable annual disposal limit for SF-16 is 200,000 cy, and 500,000 cy for SF-b. SF-9, which has also been used regularly by USACE, has developed a substantial shoal that limits how much volume can safely be disposed there; however, this site has a much higher disposal limit and may be able to accommodate some maintenance dredging needs for this project. **Recommendations for the Final EIS:** • Include a detailed discussion of how increased maintenance dredging needs will be met. • Provide a table that includes the actual annual disposal volumes at each disposal site (SF • 16, SF-lU, and SF-9) over the last 10 years for both USACE disposal and USACE disposal combined with all other users in relation to the established site limits. • Include a table identifying the expected percentage volume increase at each disposal site due to the project's increased maintenance dredging needs. • Discuss the potential for exceeding the disposal limits at each site. If the annual limits are expected to be exceeded, discuss the consequences for USACE maintenance operations and other users. This discussion should reflect the annual overall in-Bay disposal limits established under the LTMS Management Plan (1.25 million cy at all in-Bay sites combined), and the extent to which the overall maximum is more likely to be exceeded on average with the increased maintenance volume. Please note that the potential socio economic consequences of exceeding 1.25 million cy on average over a 3-year period may be substantial and could result in mandatory dredger-specific disposal allocations. Describe how significant impacts would be avoided.	The maintenance dredging for this project would be included under the LTMS EA/EIR through 2024. The increase in O&M is 78,000 cy (Existing O&M is 152,500 cy and future O&M would be 230,500 cy). In-bay disposal is currently the Federal standard for O&M material within the existing Federal channel. The water quality permit issued to USACE for O&M dredging shows that USACE is currently permitted to use a 3.5 MCY capacity of in-bay disposal over a 5 year period. There is sufficient site specific capacity at SF-10 and SF-16 for the additional O&M quantities as a result of the proposed project, with SF-9 and SF-11 available as well if needed. Appendix J provides additional information. The proposed project is recommending beneficial reuse of approximately 1.6MCY of material dredged during initial construction.

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EPA – 13	**Sediment Characterization** A summary of past sediment testing is included in Section 2.2.2 of the Draft EIS; however, more recent results for these areas are available. Specifically, data from Pinole Shoal testing is available for 2010, 2014, and 2017, while data from the Suisun Bay Channel/New York Slough are available for 2017 and 2019. The last sentence of this section states that "confirmatory testing will be completed prior to placement at the reuse sites" (p. 2-5). Given that previous testing results from overlying maintenance dredging material might not accurately represent the characteristics of deeper sediment, this confirmatory testing will be important. **Recommendations for the final EIS:** • Update the Sediment Characteristics section to include results from the most recent available sediment testing. • Confirm that additional testing will be completed prior to placement at reuse sites. EPA is available to review a draft Sampling and Analysis Plan (SAP) to ensure the adequacy and appropriate characterization of the deepening material.	The Corps will perform sediment testing prior to disposal. The more recent testing data is on depths only to maintenance dredged material, which is included in the draft EIS and the Biological Assessment in Appendix G. Testing related to depth beyond current maintenance dredging operations will be conducted during the design phase of the project.
EPA – 14	**Potential Shifts in Conveyance Mode** The Draft EIS does not clarify whether improving oil tanker transportation efficiency would cause any shifts in other modes of conveyance at petroleum facilities near the project area. For example, the Draft EIS does not disclose whether crude oil and petroleum products previously transported through other methods (e.g., rail, pipeline) would be incentivized to switch to marine transport if the project is implemented. Such shifts in conveyance could affect the project's impacts. **Recommendations for the final EIS:** Clarify whether the proposed project would cause any shifts in conveyance modes at the oil refineries near the project area. If any shifts are anticipated, analyze and disclose impacts associated with the shifts and identify appropriate mitigation measures to address such impacts.	No conveyance shifts would be expected as a result of the 3 feet of deepening the existing navigation channel. The ships will be more heavily loaded, expectantly with the same materials and commodities that are currently being transported. The benefits from the economic analysis stem from making ocean-going vessels more efficient when moving foreign imports and exports. The analysis does not assume a change in landside movement.
EPA – 15	**Environmental justice** A brief Environmental Justice analysis is included in Section 4.1.12 of the Draft EIS. Page 4-66 states that the proposed project would not result in any environmental justice impacts because "any operational air quality impact would be equally borne by all populations." In EPA's January 3, 2018 scoping letter, we provided USACE with resources and recommendations for the project's Environmental Justice assessment. Our letter included suggestions for defining the "affected" and "reference" communities, which are essential components in determining whether the project would result in disproportionately high and adverse human health or environmental impacts. **Recommendations for the final EIS:** • Clearly define the affected population and the reference population. The affected community should accurately reflect the demographic characteristics of the population likely to be adversely affected by the proposed project. The reference community should reflect the characteristics of the general population that would benefit from the project (e.g., municipal, regional, state). • Provide demographic and socioeconomic information for the affected population and reference populations. Include maps that convey the percentages of low-income and minority populations in the affected communities if feasible. • Explain the rationale behind the assertion that operational air quality impacts would be equally borne by all populations • If any revisions are made to the Final EIS that would affect the project's environmental justice assessment (e.g., air quality, water quality, induced growth), we recommend that USACE update the environmental justice analysis accordingly and identify appropriate mitigation measures for any adverse impacts.	The final report has been revised to more clearly define affected and reference populations, and demographic and socioeconomic information for these populations have been added. More details on the environmental justice analysis can be found in Section 4.1.12 of the main report/EIS.

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Middletown Rancheria	Though we have no specific comments at this time, should any new information or evidence of human habitation be found as the project progresses, we request that all work cease and we be contacted immediately.	In accordance with the Programmatic Agreement and the provisions of 36 C.F.R. § 800.13(a), work will cease immediately when an inadvertent discovery or unanticipated effect occurs.
San Joaquin County (SJC)	The San Joaquin County Department of Public Works has no comments at this time.	Thank you for your review.
State Water Contractors (SWC)	The SWC are sympathetic to the challenges facing the Port of Stockton. While the SWC are concerned about the Draft EIS, the project may create opportunities for collaboration and inventive solutions to issues facing the Port of Stockton and the Bay-Delta, and encourage the Army Corps and the Port of Stockton to continue seeking solutions. There are multiple agencies that have been collaborating to improve species habitat in the Delta, particularly Delta Smelt habitat, and there are opportunities for the Army Corps of Engineers and the Port of Stockton to engage as part of a larger coalition to mitigate and enhance species habitat. Unfortunately, this project also affects water supply through impacts to the location of X2, and those impacts are an ongoing concern.	The Corps is using the dredged material to contribute to creation of habitat for Delta species.
SWC – 2	**I. THE DRAFT EIS FAILS TO ADEQUATELY ANALYZE DIRECT AND INDIRECT IMPACTS.** The EIS is inadequate, failing to uphold the principles of the National Environmental Policy Act. The EIS fails to properly consider the significant negative effects that would be caused by dredging approximately 13 miles of Suisun and San Pablo Bay. The proposed dredging would have undisclosed impacts to state and federally listed species, water quality, and the water supply. The CEQ regulations require that an EIS contain a "full and fair discussion" of significant environmental impacts. 40 C.F.R. § 1502.1. "The agency shall make available to the public high quality information, including accurate scientific analysis and expert agency comments, before decisions are made and actions are taken." Daniel R. Mandelker, NEPA Law and Litigation § 10:18 (2013 Ed.), citing 40 C.F.R. § 1500.1 (b). "To satisfy NEPA, the federal agency should consider every significant aspect of the environmental impact of a proposed action and inform the public that it has indeed considered environmental concerns in its decision making process." Earth Island Inst. v. U.S. Forest Serv., 442 F.3d 1147, 1153-54 (9th Cir. 2006) (internal quotation marks and citation omitted). As such, NEPA requires a searching and transparent investigation of the environmental consequences of federal actions. The "agency must either obtain information that is essential to a reasoned choice among alternatives, or explain why such information was too costly or difficult to obtain." Native Village of Point Hope v. Jewell, 2014 U.S. App. LEXIS 1150, at p. *6 (9th Cir. Jan. 22, 2014), citing 40 C.F.R. § 1502.22. If essential information is unavailable, the EIS must state that the information provided is incomplete or unavailable and the relevance of the incomplete or unavailable information to evaluating reasonably foreseeable significant adverse impacts, summarize the existing credible evidence that is relevant, and document that the agency's evaluation is based on generally accepted methodology. 40 C.F.R. § 1502.22. The above standards ensure that an EIS meets its primary purpose as an "action-forcing device." See 40 C.F.R. § 1502.1. The purpose of an EIS is to "foster both informed decision-making and informed public participation." See State of Cal. v. Block, 690 F.2d 753 (9th Cir. 1982). "An environmental impact statement is more than a disclosure document." 40 C.F.R. § 1502.1. "It shall be used by Federal officials in conjunction with other relevant material to plan actions and make decisions." Ibid.; see also, League of Wilderness Defenders/Blue Mountains Biodiversity Project v. Kent Connaughton,763 F.3d 755, 762-63 (9th Cir. 2014) ("Federal agencies must undertake a "full and fair" analysis of the environmental impacts of their activities. This is a crucial cornerstone of NEPA.").	The Corps has done extensive modeling to predict water quality effects from different navigational depths. These results were used to assess direct and indirect environmental effects and effects to species that are described in the report and Biological Assessment. The Corps considered the effects of the alternatives and concluded, through the best available information, CCWD 2010 EIS references from Los Vaqueros, and extensive modeling that the effects are less than significant. Even though the Corps concluded less than significant effects, the TSP still includes measures to minimize any effects that do result from the project. Those minimization measures include beneficial reuse of all dredged material, use of a clamshell dredge, and working within environmental work windows.

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	When reviewing the adequacy of an EIS, courts demand a well-reasoned discussion. As the U.S. Supreme Court has stated, "[t]he agency must examine the relevant data and articulate a satisfactory explanation for its action including a rational connection between the facts found and the choice made." Motor Vehicle Mfrs. Ass'n of U.S., Inc. v. State Farm Mut. Auto. Ins. Co., 463 U.S. 29, 43 (1983). "In order for an agency decision to pass muster under the APA's [Administrative Procedure Act's] arbitrary and capricious test the reviewing court must determine that the decision makes sense. Only by carefully reviewing the record and satisfying [itself] that the agency has made a reasoned decision can the court ensure that agency decisions are founded on a reasoned evaluation of the relevant factors." Dubois v. U.S. Dept. of Agriculture, 102 F.3d 1273, 1285 (1st Cir. 1996), internal quotations omitted. "Whether there may be a significant effect on the environment requires consideration of two broad factors: context and intensity. Context simply delimits the scope of the agency's action, including the interests affected. Intensity relates to the degree to which the agency action affects the locale and interests identified in the context part of the inquiry." Native Village of Chickaloon v. Nat'l. Marine Fisheries Serv., 947 F.Supp.2d 1031, 1069-70 (D. Ak. 2013), internal quotations omitted. Factors relevant to the intensity of an effect include whether the effects are likely to be highly controversial. 40 C.F.R. § 1508.27, subds. (b)(4) and (b)(8).	
SWC – 3	The Draft EIS fails to meet NEPA's requirements. **A. The Draft EIS fails to disclose, consider significant direct and indirect effects to endangered species, water quality and water supply that result from project induced changes to the location of X2 and increased violations of water quality standards.** The Dredging Project EIS fails to identify project related changes in the low salinity zone ("X2"), summarily discounts significant effects resulting from project related changes in X2 that are identified, and fails to mitigate project related effects on endangered species, water quality and the water supply. The EIS recognizes that the location of the low salinity zone as measured by "X2" has regulatory importance in the Delta as a metric for protecting water quality, and state and federally listed species. However, the EIS fails to disclose the full magnitude of the project's effect. Moreover, the significant effects that the EIS does identify and disclose are summarily rejected in the EIS by improperly assuming that the SWP and CVP would back-stop the effects of dredging. The SWC object to the assumption that the SWP would mitigate the effects of this dredging project. The federal Central Valley Project ("CVP") and the State Water Project ("SWP") are jointly responsible for meeting Bay-Delta Water Quality Control Plan standards as described in State Water Board Decision 1641 ("D-1641"), as well as being responsible for jointly meeting standards for the protection of endangered species as described in the Federal biological opinions on the coordinated operation of the state and federal water projects. D-1641 includes a February through June X2 standard that requires that X2 be at specific locations (measured in kilometers from the Golden Gate) based on hydrologic conditions, as well as year-round salinity standards for the protection of fish and wildlife, urban and agricultural uses of water in the Delta. The United States Fish and Wildlife ("FWS") biological opinion for Delta Smelt includes an X2 requirement in wet and above normal water years in the fall (September-December). In addition, DWR has contractual obligations for maintaining appropriate salinity conditions for various in-Delta users. Since the SWP and CVP have regulatory and contractual responsibilities to maintain water quality through salinity control and to maintain the location of X2 during certain seasons and water year	The USACE believes that the present EIS utilized similar tools, evaluation metrics, and significance criteria as applied in the Los Vaqueros EIS (CCWD 2010). The magnitude of the impacts of this navigation project and the Los Vaqueros project (USBR 2010) as measured by the change in salinity and the displacement of X2 are very similar. The Corps has demonstrated that the impacts from the proposed navigation improvement project are less than significant using largely the same criteria used by the USBR and CDWR in their demonstration that the trust species and water quality impact from the Los Vaqueros project were not significant. While this project will impose a small burden on the SWP and CVP during the infrequent times that the water delivery operations are slightly modified to account for navigation project X2 displacement, the Corps believes that the operators of these systems will use available flexibility within the water operations rules to recover water deliveries to pre- navigation project levels. For this reason, the USACE is not offering to provide mitigation for changes to water operations that might occur as a result of this project.

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	types, any unmitigated effects from this dredging project would by default be the burden of the SWP-CVP and we therefore request that the following concerns be addressed by the Army Corps of Engineers and/or the Port of Stockton before a decision is made on this project.	
SWC – 4	The categories of concerns regarding modeling and modeling interpretation are described below, and more specific concerns are provided in a table contained in Attachment 1. **1. The proposed project's threshold of significance is based on inaccurate information and assumptions.** The SWC object to the selection of a threshold of significance of more than a 1 km change in the location of X2. The EIS reasons that, "Given the imprecision in measuring X2 and net Delta outflow, small changes to X2 positioning are generally not considered significant." (EIS, p. 2-15.) This is not true. Relatively small changes in X2 are considered significant. While the general definition of X2 may be imprecise, the regulatory requirements that set X2 standards are very precise, as D-1641 requirements include a defined value of 2.64 mmhos/cm EC at explicit locations for explicit averaging periods. The precise nature of the X2 regulatory standards means that small changes to the location of X2 can have significant impacts to SWP-CVP water supplies as reservoir releases are made and/or water export are cut to meet the standards.	The thresholds for this project were the same thresholds used for the 2010 Contra Costa County Water District EIS. The Corps used the thresholds established and used in that project in order to remain consistent with other projects in the Bay Area.
SWC – 5	**The baseline is flawed as it is a hypothetical condition that has never existed, thereby obscuring actual impacts of dredging.** The appropriate baseline for evaluation of the effects of the proposed action is the No Action, which are the conditions expected to occur absent the proposed action. The EIS uses the "without project conditions" which are not representative of actual bathymetric conditions currently present. Instead this represents the authorized channel depths, which do not reflect actual conditions, and are not an appropriate No Action representation. In some areas, actual conditions are likely shallower than the design elevation, in which case the impacts of the Alternatives evaluated would be underestimated. It is critical to disclose the differences between the actual bathymetry and the assumed bathymetry in the "without-project conditions". This comparison would establish if the impacts disclosed in this document are reasonably documented. Furthermore, the above referenced text only mentions advanced dredging activity; it does not acknowledge that the actual channel conditions could very well be shallower than the authorized elevations, thereby not disclosing possible bias in the estimated impacts. This modeling assumption of deeper channels than current physical conditions is applied throughout the document. For example, the Draft EIS states at p. 10 that, "Any portion of the currently authorized channels for the entire reach of the San Francisco Bay to Stockton Navigation Improvement Project channels that were shallower than the currently maintained depth of 35 feet MLLW plus 2 feet of overdepth were then deepened to 37 feet MLLW (including overdepth)." Again, this approach introduces significant bias into the modeling results. The artificial lowering of existing shallow channels to theoretical authorized elevations underestimates the actual salinity intrusion and associated impacts to the CVP-SWP that would result from the proposed dredging. For example, assume the actual elevation was 33 feet MLLW. Modeling for No Action assumed 37 feet MLLW instead of 33 feet. To determine the salinity impacts of the proposed TSP (40 feet MLLW) was compared to No Action (37 feet MLLW) instead of comparing to the actual 33 feet MLLW elevation. This comparison assume the dredging will only result in 3 feet deepening instead of 7 feet actual deepening and this can significantly underestimate the actual salinity impacts and associated water supply impacts and impacts to the CVP/SWP operations. Furthermore, there	The current channel is dredged annually to maintain a 35 foot depth, with 2 feet of overdepth. Considering this is dredged annually, the correct assumption for the No Action is 35 feet MLLW.

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	could be significant silting on the side slopes of the ship channel under actual conditions relative to the assumed design conditions, as shown in EIS Appendix B Figure 2 on pg B-2. At a minimum, the comparison between the actual bathymetry and the assumed bathymetry for the No Action should be disclosed so that it is clear whether the analysis was biased, underestimating the actual impacts. Alternatively, the No Action model should include the actual bathymetry instead of the theoretical design elevations.	
SWC – 6	**3. The modeling of X2 is biased by unsupported assumptions.** The modeling in the EIS is based on outdated information, unsupported assumptions, and is incomplete. The SWC object to the following: • Hydrologic modeling: The EIS concludes that a numeric hydrologic model to evaluate changes in runoff directly into the two bays, or into the rivers and tributaries that feed the bays, was unnecessary because dredging the channel would not have any significant hydrological impacts. (EIS, p. B-2.) This is incorrect. Any changes in salinity in Suisun Bay and Delta due to the proposed deepening will require changes in Delta inflows, exports and outflow (flow into the two bays). These changes need to be analyzed and any impacts should have been disclosed. Without analyzing and disclosing these impacts it is inappropriate to conclude that the project would not have any significant hydrological impacts. For example, on p. 9, when the EIS concludes that, "The model predicts no significant change in water levels or flow for the TSP when compared to....," this conclusion is unsupported by evidence because the flows coming into the bays were not modeled. See also, p. ES-4, conclusion that predicted flows for the No Action and TSP were identical, which cannot be determined because flows coming into the bays were not modeled. • Climate change: The EIS is not based on the most recent sea level rise predictions. (EIS, p. B-5.) The most recent predictions can be found at: http://www.opc.ca.gov/webmaster/ftp/pdf/agenda_items/20180314/Item3_Exhibit-A_OPC_SLR_Guidance-rd3.pdf • Future predictions: The EIS states that hydrology and operating conditions cannot be predicted 50-years into the future. (EIS, B-5.) However, there are several recent examples where future hydrologic conditions are projected for the Bay-Delta system, including California WaterFix, California 4th Climate Assessment etc.	The Corps has developed and completed extensive modeling on this project, and updated the modeling based on a meeting with water users in December of 2018. The USACE believes that we have used a state of the art hydrodynamic/salinity model (UnTRIM) and the best available information to conclude that this project would have an insignificant effect on water quality and water quantity. The Corps believes that the scale and frequency of changes to water supply operations that could be attributed to impacts from this project are minimal and do not warrant an elaborate effort to quantify impacts on operations as proposed by this comment and other SWC comments. The USACE is unaware of any other project with impacts of the scale projected of this project that performed an accounting of impacts to water supply operations. For these reasons, the USACE will not prepare any further modeling or analysis other than what is committed to in the report. The Corps applied its own sea level rise evaluation methodology which evaluates different sea level rise predictions utilized by California regulators. At the time that the 50-year scenario modeling was performed circa 2014, there was no CalSim model output that could be used as input to create a more realistic sea level rise version of the Corps UnTRIM model. The Corps is aware that the EIS/EIR for the California WaterFix project did prepare hydrologic and operating conditions simulations for several future sea level rise scenarios. These modeling efforts utilized CalSim model runs that were not available to the Corps at the time that most of the UnTRIM modeling done for the navigation project was done.
SWC – 7	**4. The interpretation of modeling results is incorrect and unsupported by evidence.** The Draft EIS misinterprets the existing regulatory environment and the modeling results in numerous ways that improperly obscure and minimize the true magnitude and nature of the effect of the proposed project. The SWC object to the following: • Water Quality Exceedances: The Draft EIS states that the proposed channel deepening project will cause an exceedance of the Emmaton water quality standard contained in D-1641. (Draft EIS, p. 4-21.) • First, the Draft EIS modeling actually shows that the project will result in two exceedances of the D-1641 Emmaton standard in one year. (See Appendix B.) • Second, and more importantly, the Draft EIS improperly concluded that these exceedances of water quality standards were not a concern because during the last historic drought the State Water Resources Control Board authorized a Temporary Urgency Change Petition ("TUCP") that temporarily modified the SWP-CVP's water rights. (Draft EIS, p. 4-21.) This is an incorrect assumption. The fact that the Water Board granted a TUCP in the past is completely unrelated to whether the Water Board would grant a TUCP in the future. Before a TUCP can be granted, the Water Board must make extensive findings of urgency and public interest. (See California Water Code §§1435 *et. seq*.) It should be further noted that the Water Board has restricted SWP-CVP	1. Emmaton: The final report includes am assessment of Emmaton without the TUCP and acknowledges that there is additional time of WQ violation at this location. These updates can be found in Section 4.1.3. 2. Climate change: The final report will acknowledge that even though X2 change is same for Year 0 and Year 50 scenarios, the additional bay/delta volume in the year 50 condition associated with deeper water would require additional flow relative to the year 0 scenario to stabilize X2 at the pre-project condition. 3. Wet year changes- The USACE believes that the below normal and critical year hydrologic conditions are important to understanding impacts that occur when water is scarcest. Nonetheless, the USACE will add additional discussion of potential impacts during wetter conditions.

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	water diversions as a condition of granting TUCPs, so the Army Corps should not assume there is no water supply impact if there is a TUCP. Moreover, since the future identified exceedances would be a result of the proposed dredging project, not SWP-CVP operations, the Army Corps must be responsible for mitigating the potential water supply effect that would occur when the SWP-CVP are faced with future exceedances, and the Army Corps should exercise the diligence in preventing the exceedances. The SWC object to any assumption that the SWP will mitigate the effects of dredging. • Climate change: The Draft EIS states that the effects of the proposed dredging project would be nearly identical under existing and future conditions. (Draft EIS, p. ES-4.) This conclusion is incorrect. The changes in absolute values of X2 (about 5 km movement eastward) due to assumed sea level rise at year 2050 will make any further increases in X2 and salinity due to the dredging a potentially significant impact. The cumulative change in X2 would be significant. • Wet year changes in X2: The Draft EIS assumes that changes in X2 are not significant if they occurred in wet years. (Draft EIS, p.B-13.)This is an in correct assumption. First, the federal FWS biological opinion contains a fall X2 requirement that specifies X2 locations in wet and above normal water years. It should be further noted, that in the spring, if X2 is at or west of Port Chicago, D-1641 requires that the SWP-CVP maintain it at that position for the rest of the month. The full extent of when the proposed dredging project would have impacts is actually unknown as the Draft EIS averages the results by month, when regulatory compliance with water quality standards is sub monthly.	
SWC – 8	**5. The proper modeling approach should be used to study impacts of the proposed dredging on the CVP/SWP operations and water supply.** The Draft EIS does not include analysis of the proposed dredging on the long-term CVP/SWP operations and associated water supply, water quality and biological impacts. An appropriate modeling approach to study and disclose the long-term impacts of the dredging project is outlined in the Attachment 1.	The analysis of the effects of the deepening on operations and water supply as Attachment 1 (see Potential Methodology to Study the Impacts to CVP/SWP Operations) would require a very substantial amount of new work that the Corps is not prepared to provide, considering we have completed substantial modeling up to this point and demonstrated that the project will have limited impact on water quality and water supply. The approach SWC suggested is similar to that that was conducted as part of the Bay-Delta Conservation Plan. That effort followed the steps listed and involved least 4 different consulting firms using multiple different models over a couple of years of analysis.
SWC – 9	**B. The Draft EIS fails to disclose significant impacts to state and federally listed aquatic species.** The Draft EIS fails to adequately consider the proposed dredging project's effects on listed aquatic species. The analysis is vague, without citation, incorrect in places, and unsupportive of the Draft EIS' conclusion of no significant impacts. The SWC have concerns about the analysis of the project's effects on Delta Smelt that include but are not limited to: • Use of Delta Smelt catch and percent of catch: Delta smelt catch is at historically low levels, making catch and percent of catch by area a relatively uninformative metric for determining project impacts. (See e.g., Draft EIS, p. 4-45.) The Fall Mid Water Trawl index is currently zero. Therefore, since Delta Smelt abundance is so low, catch of 1 or 2 Delta Smelt is a strong indicator of habitat use. (See Draft EIS, p. 4-46, Table 4-17.) The Draft EIS' representations that catch of 1 or 2 Delta Smelt is an indicator that the habitat in question is of low value habitat or rarely used is unsupported. • Description of Delta Smelt rearing habitat: There are no citations supporting the Draft EIS's statement that Delta Smelt rearing habitat does not include the project area in summer and fall. (Draft EIS, p. 4-45.) The California Department of Fish and Wildlife and the USFWS repeatedly take the position that Suisun Bay is highly desirable Delta Smelt rearing habitat in the summer and fall; and in fact, these regulatory agencies have imposed a fall habitat requirement on the SWP-CVP with the purpose of creating suitable habitat for Delta Smelt in Suisun Bay. As	Appendix G of the EIS contains the Biological Assessment submitted to USFWS and NFMS on May 10, 2019. The EIS does not need to provide effect determinations in the body, and can reference the Biological Assessment to avoid repetition. The Corps is in consultation with USFWS and NFMS on the identified issues in your comment. The Biological Opinion and NMFS letter of concurrence can be found in Appendix G. The FMWT indices for delta smelt and other species are presented in section 2.2.6.2, and the Biological Assessment (BA; Appendix G to the EIS) for the project is referenced there as well which discusses in detail the decline of the delta smelt population in the last 3 years (BA, section 6.1.1.4). We agree that the delta smelt population is in peril, and that information such as "less than 1 percent of delta smelt have been collected in almost 50 years of trawling" near the project area would be better evidence that the project would have limited adverse effects on the delta smelt population if the population was healthy. However, this is only one component of the effects analysis—although it still suggests that the proportion of the delta smelt population likely to encounter the project and be exposed to potential adverse effects is low. Another primary component of the effects analysis concerns the low likelihood of entrainment of delta smelt that are exposed to the project due the use of clamshell dredging for implementation. Since 2017, USFWS has permitted maintenance dredging of Suisun Bay

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	previously stated, using the percent of catch is poor evidence of quality of habitat since abundance numbers are low, making an area that has been occupied by Delta Smelt over the last 50-years important, particularly since the project area is believed to have more desirable water temperatures as compared to upstream areas in the Delta. The Draft EIS does not support its conclusion that a work window from August 1 through November 30 is protective of Delta Smelt, which are the months when sub-adult Delta Smelt are expected to be rearing in the western Delta including Suisun Bay. • Longfin Smelt: The Draft EIS fails to recognize that Longfin Smelt are listed under the California Endangered Species Act, and have been listed but precluded under the federal Endangered Species Act. (Draft EIS, p. 4-50.) There is no support for the Draft EIS' conclusion that, "Although longfin smelt are likely to occur in the project area, because of their relative abundance and the limited potential for entrainment impacts…there would be a less than significant impact on Longfin Smelt." (Draft EIS, p. 4-50.) The Draft EIS found that the percent of catch of Longfin Smelt in the project area is over 17%. (Draft EIS, p. 4-50, Table 4-18.) This is significant. • Longfin Smelt relationship with X2: The Draft EIS fails to recognize that Longfin Smelt are one of the species that the state and federal fishery agencies believe have a direct and/or indirect relationship between the location of X2 in the winter-spring and FMWT abundance. The Draft EIS fails to discuss this relationship even though the proposed dredging is showing a consistent increase in X2 across all months of the year and across all the water year types analyzed. While the Draft EIS does acknowledge that X2 is a relevant species of concern, it rejects all potential impacts because modeled monthly average changes in X2 are less than 1 km. The Draft EIS provides no support for this conclusion; and as discussed above, the SWC believes the modeling fails to fully disclose project related changes in X2.	Channel via clamshell dredge using the same work windows proposed for this project to protect delta smelt. Table 4-17 summarizes FMWT and Bay Study delta smelt catch data from 2000 through 2013, when delta smelt abundance higher than it is now. Including all available catch data to date likely would not change the relative proportions as catch of delta smelt has been low or zero. The comparison of 1-2 fish caught near the project area versus the hundreds caught at all study stations is valid. We acknowledge at the top of page 4-45 that the project is in delta smelt critical habitat and rearing habitat, and later that the project is likely to disturb the benthic food supply of this habitat. We do not say the habitat is of low value or poor quality, and are well aware of the fall X2 requirement which is discussed in section 5.3.3.3 of the BA and in the salinity report (see Appendix B to the EIS) . We acknowledge in the BA, however, that the shipping channels are regularly disturbed by maintenance dredging and deep draft ship traffic, which could reduce habitat value or quality in these locations. Literature citations documenting the life history and habitat of delta smelt are in section 6.1.1 of the BA. We have clarified that the August 1 – November 30 work window is considered protective primarily of larval delta smelt, but that juveniles or sub-adults may still be present and hence potentially affected. We note that longfin smelt is state-listed as endangered, and discuss the preclusion from federal ESA listing and species life history in the BA, section 6.1.2. USACE will request a conference biological opinion for longfin smelt from USFWS should the species be proposed for listing prior to completion of the project. The determination of less than significant project effects to longfin smelt (and delta smelt) primarily is due to the use of clamshell dredging to implement the project, which we discuss in the BA and have clarified on page 4-50. However, we believe it is important to estimate (since data are available) the proportion of the population that may encounter the project. Again, since 2017, USFWS has permitted maintenance dredging of Suisun Bay Channel via clamshell dredge using the same work windows proposed for this project to protect delta smelt. The use of clamshell dredging in particular also should be protective of longfin smelt and all other fish species. We discuss the biological significance of X2 extensively in the BA (section 5.3.3). Although we do not discuss its importance to longfin smelt, we do discuss its importance to estuarine species in general and delta smelt specifically. The 0.17 km shift in X2 in critical years when it would be most important to listed species likely will not be detectable or measureable in a practical sense. The reasoning behind the selection of the significance criterion (1 km shift of X2) is provided in the EIS on page 4-23.
State Water Resources Control Board (SWR)	The salinity analysis relies upon modeling for single representative wet, normal, and critical water years from the UnTRIM Bay-Delta model with modified bathymetries representative of the proposed project and historical flows. The narrow analysis of 3 specific hydrologic water years may not adequately capture the potential range of salinity effects of the project. A wider range of hydrologic conditions should be evaluated in the EIS to ensure that the range of potential impacts of the project are disclosed. Specifically, the representative critical year analyzed was 2014, during which time the State Water Board allowed for a limited and temporary relaxation of salinity requirements in the Delta. The temporary modification to salinity requirements in 2014 is not representative of baseline regulatory conditions outside of the limited timeframes during which temporary modification to salinity requirements were allowed and does not adequately represent	The selection of 2014 and 2011 was made in 2014-2015 following input from the series Salinity Technical Experts Panels held in September and October of 2013. Many stakeholders participated in that process including DWR and CCWD. Prior to 2013 model simulations were made using the CALSIM planning runs, primarily because when the analysis started in 2009 the new biological opinions had just been implemented and there were no available historic conditions that included the implementation of the BOs. In 2013, the STEP recommended "using historical outflows to establish a baseline salinity level." By 2015, historic conditions were available for both a wet (2011) and critical (2014) water year and these years were selected for analysis through coordination with the stakeholders. At that time 2014 was selected because it was extremely salty and corresponded to when the deepening would

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	baseline water quality conditions during most critical water years. The relaxation in salinity requirements in 2014 under baseline resulted in higher salinity levels than are generally allowed during critical water years, and the UnTRIM modeling indicates that the proposed project would have led to slightly worse water quality conditions than baseline. It is not clear how these results would differ if the water quality requirements had not be relaxed. Additional analyses should be conducted of a wider range of hydrologic conditions in order to better inform if the project would cause or contribute to exceedances of water quality requirements or other impacts to water quality and associated beneficial uses of water. State Water Board staff would be happy to discuss those analyses further with you.	potentially have the largest effects on water quality in the Delta. Based on the December 2018 inter-agency meeting, the Corps added the 2012 below normal water year. The results for that year show zero days of non-compliance for both with, and without project conditions. This is an indication that current operations provide a buffer that absorbs the impact of the proposed project at Emmonton without resulting in a violation. The commenter has requested an analysis of an additional different critical year in which the temporary relaxation of salinity requirements in the Delta did not occur. The Corps will not perform additional UnTRIM modeling at this point in the planning study. However, based on an assessment of all three years of UnTRIM modeling results across the various depth alternatives, if the temporary relaxation of salinity criteria had not occurred during the 2014 water year, there would have been no violation at Emmaton during the year because operators would make adjustments to limit them. Given the pattern of no increase or limited increase in violations from all of the available simulation runs (2011, 2014, 2014) and that dry years displace X2 less than wet years, it is very likely that simulating a different critical year with no relaxation would show at most one or two days of exceedance of the water quality objectives caused by the project.
San Francisco Bay Conservation and Development Commission (BCDC)	The Commission's McAteer-Petris jurisdiction includes all tidal areas of the Bay up to the line of mean high tide or, in areas of tidal wetlands, up to five feet above Mean Sea Level or the extent of tidal wetland vegetation; all areas formerly subject to tidal action that have been filled since September 17, 1965; and the shoreline band that extends 100 feet inland from and parallel to the Bay jurisdiction. In addition to the Commission's Mc:Ateer-Petris Act jurisdiction, a small portion of the tentatively selected alternative appears to be located in the Commission's Primary Management Area of the Suisun Marsh within Solano County. In this area, the Suisun Marsh Act and Marsh Plan contain relevant policies that would apply to the project. Further, the Commission reviews federal projects that would affect the coastal zone, in this instance San Francisco Bay, using its Coastal Zone Management Act (CZMA) authority. The staff believes this project would affect the San Francisco Bay Coastal Zone, and therefore, the project should be reviewed for consistency with the Commission's federally-approved Coastal Management Program (CMP) for the Bay. A consistency determination should be submitted for this project for review and concurrence by the Commission prior to construction of the project. It is our understanding that USACE is moving forward with analyzing the tentatively selected alternative, but that the local project sponsor, the Port of Stockton (Port), has not yet initiated the review process to assess the impacts of the proposed project under the California Environmental Quality Act (CEQA). As the local project sponsor, the Port will need to obtain a permit from the Commission for the project, and a certified CEQA analysis would be required prior to filing the permit application complete for the project.	A consistency evaluation was submitted as Appendix G within the draft EIS as part of the 45 day public review process.
	1. Dredging. The Bay Plan dredging policies require that projects be designed in a way that serves a water-oriented use, meets water quality requirements, minimizes impacts to important	The purpose of the:

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	fisheries and natural resources, is the minimum amount of dredging necessary for the project, and that the sediment be disposed in accordance with Commission policies. a. Minimize Dredging. The tentatively selected alternative includes creating a sediment trap at Bulls Head Reach, please provide an explanation regarding how this is the minimum dredging necessary based on the stated need to support larger vessels, and safe and efficient navigation within the federal channel. b. Dredged Sediment and Placement Locations. The Commission's Bay Plan dredging policies require that dredging projects "maximize use of dredged material as a resource consistent with protecting and enhancing Bay natural resources..." Through the LTMS Management Plan1, the USACE, the Commission, the United States Environmental Protection Agency (EPA), and the San Francisco Bay Regional Water Quality Control Board (Water Board) are dedicated to maximizing beneficial reuse of dredged sediment in the region. The Commission appreciates that the tentatively selected alternative includes taking the estimated 1.6 million cy of dredged sediment to the Cullinan Ranch Restoration Project and the Montezuma Wetlands Restoration Project, both beneficial reuse sites. Disposal at the San Francisco Deep Ocean Disposal Site (SF-DODS) has been included if beneficial reuse is not feasible based upon project timing, sediment testing, or operational constraints, but would require EPA concurrence prior to placement of dredged sediment at SF-DODS. The Draft GRR/EIS includes beneficial reuse as a mitigation measure to offset habitat impacts resulting from the deepening project. Please note that if beneficial reuse is not included in the project, mitigation may be required to compensate for habitat impacts that would not be offset by beneficial reuse and habitat creation. In section 4.1.2, the Draft GRR/EIS discusses that following the deepening project, maintenance dredging volume for the Pinole Shoal Channel and Bulls Head Reach together is expected to increase in these channels by approximately 230,500 cubic yards annually. However, the Draft GRR/EIS does not discuss how this additional volume increase may impact the state- and federally-authorized San Pablo Bay (SF-10) and Suisun Channel (SF-16) in-Bay disposal sites annual volume limits, the overall annual in- Bay disposal limit of 1.25 million cy, or how the increased disposal volume at these sites would impact the use of disposal sites by other dredgers in the region, especially given the individual disposal site volume restrictions. There appears to be some inconsistencies in the estimated volume of the tentatively selected project in the Draft GRR/EIS varying between 1.4, 1.5 and 1.6 million cy, please correct as needed or provide an explanation for the differences in volume. Additionally, there appears to be a significant difference in the size of the project footprint between the two project alternatives analyzed on pages 3-16 through 3-17 (200-acres footprint area verses a 390-acres area for the -37 foot alternative and -38 foot alternatives, respectively). While the document mentions side slopes will be maintained, it does not clearly state whether the difference in the size of the footprint is due to the side slopes variation, please clarify this. c. Sediment Testing. Sections 2.2.2.2 and 2.2.2.3 contain a discussion of sediment test results from 1994, 2000, and 2009. Please note that there are more recent test results from maintenance dredging of these channels that could be included. Section 2,2.2.3 includes results from testing conducted in 1990 in Suisun Bay that showed that sediment below the -40 ft MLLW depth in Suisun Channel, including Bulls Head Reach, exceeded wetland cover criteria due to elevated chromium concentrations. This sediment may be suitable for placement as foundation material at Montezuma Wetlands, if capacity is available. According to the estimates in the Draft GRR/EIS, the proposed foundation quality sediment may consist of approximately 100,000 cy of sediment dredged from the Bulls Head Reach sediment trap. The Dredged Material Management Office	a. sediment trap within the Bulls Head Reach (BHR) is to help manage the effects of excessive shoaling that has often required additional emergency dredging outside of the normal maintenance cycle. The additional depth (42' MLLW) of the sediment trap will minimize the emergency O&M maintenance dredging effort as well as the cost in the year following the completion of the proposed deepening. By capturing sufficient amount of material between dredge cycles, the sediment trap will also eliminate the risk to the ships using the federal channel. b. The proposed project intends to use the dredged material for beneficial reuse. The difference between the existing and the future annual O&M maintenance volume is only ~78,000cy, not ~230,000cy. Current average annual O&M maintenance volume is ~152,000 while the future with the added increase of ~78,000cy will be ~230,500cy. Overall total volume for initial construction is 1.6 MCY. The difference in acreage is due to side slope and depth, and also depends on whether allowable overdepth is assumed in the acreage. A consistent acreage will be used in the report and assumptions clearly stated. c. Testing of the sediment will occur during the preconstruction, engineering, and design phase of the project. d. Advanced maintenance is currently performed annually to 37' plus 1' overdepth MLLW between Sta. 62+00 and 88+00. This information is discussed in Ch 2 (Existing and Future Without Project Conditions) Section 2.4.2 Operations and Maintenance (including high shoaling areas). e. Yes, the difference in acreage between the -37 and -38 alternative is due to the (3:1) (H:V) side slopes.

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	(DMMO) will review this information as part of the sediment sampling and analysis plan, and use it to determine the appropriate extent of testing required for the proposed placement locations. Please note additional testing beyond confirmatory chemistry will likely be required. Section 3.3.2 on page 3-4 states that "new work material is superior to maintenance material to accomplish the habitat restoration objectives of the sites." Please provide the basis for this statement. The quality of the dredged sediment is evaluated for each project prior to placement of the dredged sediment at a wetland restoration site. Currently, all wetland restoration projects that accept dredged sediment use maintenance dredging sediment. d. Alternatives analysis. Section 3.8 on the No Action Alternative should include a discussion of the advanced maintenance in Bulls Head Reach that is currently performed, if this activity is going to be continued into the future.	
BCDC - 2	**2.Sediment Transport.** The Draft GRR/EIS did not appear to address potential impacts of the project to sediment transport, likely sand transported through the sediment trap and other portions of the project area as bedload. It should consider impacts to local beaches and shorelines, and sand available for aggregate mining, as this is a public trust resource that is necessary to maintain these uses. Please include a discuss of these issues in the Final GRR/EIS.	It is not anticipated that channel deepening would impact local beaches and shorelines given that the navigation channel itself is located in the middle of the San Francisco Bay and San Pablo Bay, miles away from said beaches and shorelines.
BCDC - 3	3.Navigation. The Draft GRR/EIS discusses that the tentatively selected project would provide safe navigation and not increase the number of vessels in the channel. The rationale included in the document is that the alternative would allow vessels to carry more cargo efficiently, but not necessarily increase vessel traffic. However, in Section 4.7 on page 4-90 in Table 4-23 there is a mention that vessel traffic will increase over time. Please clarify this language in the table and text, further explain the increase, and the potential cumulative effects of increases overtime.	The additional 3 feet of depth from this project would not increase vessel traffic. This comment refers to the cumulative effects section of the report, which talks about potential future projects that have the potential to increase traffic over time.
BCDC - 4	4. Water Quality. Pursuant to the BCDC's Bay Plan Water Quality policies, pollution in the Bay's water "should be prevented to the greatest extent feasible." Further, in considering this project, the Commission will consider the Water Board's evaluation, advice on the proposed project, and any potential water quality impacts. Therefore, it is advisable that the project proponents conduct early consultation with the Water Board in conjunction with Commission staff to assist us in determining whether the project would adversely impact the Bay's water quality. Additionally, the Marsh Plan policies on water supply require that water quality within Suisun Marsh be maintained. These policies also limit the deepening of the John F. Baldwin Ship Channel until an adequate understanding of the impacts resulting from increased salinity intrusion in the Marsh is known. More specific comments on this topic includes: a. Section 2.2.3. Please include the average monthly water flow on all figures in this section or include this number in the text of the figure captions. Further, please revise the text in this section to discuss the water years in chronological order. Additionally, Figure 2-4 on page 2-8 and Figure 2-2 on page 2-9 appear the same, even though the captions are different. Figure 2-4 is also included on page 2-10, perhaps erroneously. b. Section 2.2.3.3. This section discusses various issues associated with salinity intrusion into Suisun Bay and the Delta based on modeling results. This section also mentions that estimates of the bottom location of the X2 isohaline are interpolated using autoregressive equations based upon surface water measurement that are collected, and notes that this method to estimate X2	General Comment Response: The USACE has reached out to the Regional Water Quality Control Board for San Francisco Bay Region but has not as yet applied for water quality certification since the CEQA evaluation for this project is not complete. During the Pre-Construction Engineering Design phase, the Corps will engage with the RWQCB and the Bay Delta Commission. a. Section 2.2.3 of the main report was revised to include the monthly total inflows, exports and outflow for 2014, 2012, and 2011 Tables 2-1, 2-2 and 2-3 and associated text. b. 1) The 1km X2 criteria was first used by the USBR and the CDWR in 2003 for the Environmental Water Account program and in 2010/2017 for the Los Vaqueros Reservoir EIS/EIR. So it has previously been generally accepted by the water user and environmental community as a reasonable test of project impact. It is commonly understood that estimation of X2 using salinity stations or autoregressive equations is imprecise and error can be on the order or significantly larger (Hericks, et, al 2017; MacWilliams et al. 2015) than the 1 km significance threshold that was applied for this and other projects. Though X2 is perhaps the best available metric for ensuring Delta operations are consistent with protection of trust species, a review of the 2014 Workshop on Delta Outflows and Related Stressors Panel Summary Report (Reed, Et Al, Delta Stewardship Council, 2014) indicates that X2 is weakly correlated to species' abundance.

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	has a large error range somewhere between 3.1 and 9.2 km. The modeling results in Section 4.1.3 indicated that there will be some shifts to the location of X2 in critical water years and wet water years for both project alternatives analyzed, but that these shifts would be less than t e 1 km significance threshold used to evaluate results of the hydrodynamic modeling. Please provide a more thorough scientific rationale for the use for the 1 km significance threshold, and why this was determined to be the appropriate threshold. Further, please provide a more complete analysis of the combined effects of rising seas and the deepening project, which provides a pathway for saline waters into this critical marsh area. Lastly, there appears to be some text missing at the end of page 2-15. c. Section 2.2.3.4. Mercury and methylmercury are known issues in San Francisco Bay and Suisun Marsh. This section includes a discussion on environmental conditions that increase methylmercury formation, but doesn't include a discussion of how this process is impacted by salinit y. Since the alternatives could change the location of X2, please include a discussion of salinity impacts on the fate of mercury and mercury methylation in this section. USGS has conducted research on this issue near the South Bay Salt Ponds project and may provide some good references for this topic. d. Section 2.2.3.5. This section discusses chemical pollutants in the estuary and references the San Francisco Estuary Institute Regional M onitoring· Report (RMP) from 2011. Please note that there are more current RMP reports that should be included here. This section also does not discuss the potential for spills from wastewater treatment facilities and refineries along the shoreline of this channel. Although spills are random, they do occur, and this project could increase the amount of petroleum products being shipped or offloaded along the shoreline in this area and is very near to the Suisun Marsh. Please address this issue in this or other appropriate sections.	This citation does provide several graphs (Figures 3 and 4) for Delta Smelt / Long Fin Smelt and that appear to show that changes to X2 on the order of 1 km would not significantly affect species abundance. Similarly, the literature review and Figure 23 of Technical Report 90 prepared by the Interagency Ecological Program for the SF Bay/Delta Estuary (2015) provides a summary of the weak relationship between X2 and delta smelt population. In 2017, the Bureau of Reclamation requested re-initiation of consultation on the 2008 Biological Opinion for coordinated long-term operations (Sep 7, 2017 USBR letter to Paul Souza) requesting in effect a relaxation of October X2 requirement to maintain 74 km and proposed a 81 km target. Based on the USBR modeling, this proposal would effectively move the October X2 target more than 6 km upstream with no expected impact on delta smelt. Given the weak link between delta smelt numbers and X2, and the actions of other agencies that have either used the 1 km significance threshold or argued for even greater X2 displacement with no significant effect, the USACE believes that a 1km X2 displacement significance threshold is sufficiently protective and not an arbitrary standard. Further, the predicted project effects on X2 are much less than 1 km. b. 2) The 2050 relative sea level rise analysis in the Hydrodynamic/Salinity Appendix mirrors the analysis done for the present condition and was useful in determining the relative impact of the project on salinity in comparison to the baseline 2050 condition. No additional analysis will be done since the modeling and analysis met the USACE planning requirement to assess relative 2050 project impacts. c. Additional references and discussion of methyl-mercury fate/transport in the bay/delta environment has been added to Section 2.2.3.4. d. A discussion of the effect on the project of spills has been added to Section 4.1.3 evaluation of WQ-02 of the report. Note that this project will improve navigation efficiency by decreasing the frequency of tanker calls by allowing increased loading/drafting of ships that call on the area refineries. Fewer tanker calls will decrease the likelihood of spills. This information is reported in the economics and HTRW sections of the report.
BCDC - 5	5.Minimize Harmful Effects to the Bay. BCDC appreciates that the project includes minimization measures, such as using a clamshell dredge, working within the environmental work windows, and beneficial reuse of dredged sediment to reduce impacts to species within the Bay and their habitat. a. Pinnacle Removal. Please note that Subtidal Policy 2 requires that dredging in scarce subtidal habitats, and impacts to rare habitats such as underwater pinnacles, only be allowed if there is no feasible alternative to the project and the project provides substantial public benefits. Rocky pinnacles are an extremely rare and valuable habitat in the Bay in that they provide a hard substrate for sessile organisms to attach to and structure in an otherwise flat environment. The Draft GRR/EIS identified the location of the rocky outcrop in an area west of the Pinole Shoal Federal Navigation Channel, but within the shipping lane. The Draft GRR/EIS discusses that the rock outcrop would be removed as part of both alternatives that were analyzed because it poses a navigation hazard, but the information provided in the document, does not appear to fully support this conclusion. It states that the rock outcrop is located below the existing substrate with the pinnacle occurring at a depth of approximately-39.7 feet MLLW. If the rocky pinnacle is located	a. The rocky substrate/obstruction is not considered an underwater pinnacle. The draft report identified it as a rock outcrop, but based on comments, we have revised the language to say rocky substrate or rocky obstruction, as an outcrop implies exposure. This project provides public and economic benefit as described in Chapter 3 of the main report and the Economics Appendix. No other feasible alternatives exist to lowering the rocky obstruction in order to provide safety to vessels and marine life if the obstruction were hit by a vessel. Because the rock obstruction is buried, it currently does not provide habitat for aquatic species except perhaps for some deep burrowing invertebrates. The size of the rock obstruction is indicated on page 12 of the BA (i.e., 40 cubic yards of material and about 950 square feet of area (or approximately equivalent to an area of 10 ft x 10 ft), and is currently within the trafficked area by vessels. We consider the buried rock obstruction to be too small to substantially change the composition of the benthic food supply as it stands now. It is possible that it could provide some new habitat once exposed as a result of this project should it be left

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	below the existing surface and is not within the navigation channel, why has it been included in the project? BCDC has read the text that states it poses a navigational hazard, but this area is below the design depth of the channel for the tentatively selected alternative and not within the navigation channel. Please also include anticipated habitat loss that would result from removal of this pinnacle and expectations as to the type and extent of replacement communities. b. Loss of Habitat. The Commission staff noted that Section 2.4.2 mentions that sediment trap is needed in Bulls Head Reach to provide navigational safety in this area of high shoaling, and was pleased to see that for the immediate future hopper dredges will not be used for maintenance dredging in the Suisun Bay Channel, but will be performed with a clamshell dredge to reduce impacts during dredging to Delta and longfin smelt, and salmonids, which are federal- and state-endangered species. Please include a more detailed map and cross-section of the sediment trap in the Final GRR/EIS. If the sediment trap is in a location that is different from the federal navigation channel in this area and the project would dredge a previously undisturbed habitat, the Final GRR/EIS should evaluate potential loss of habitat and species impacts associated with the sediment trap. c. Entrainment. The Draft GRR/EIS states that the deepening will be conducted with a clamshell dredge, which will reduce the entrainment of Delta smelt and long smelt. The analysis of biological impacts should include a discussion of increased annual or biannual maintenance dredging of Pinole Shoal and Suisun Channel that may impact fish populations through habitat loss and entrainment. As the USACE is aware, dredging of Pinole Shoal is currently conducted through use of a hydraulic dredge, it is likely that more entrainment of listed species would occur with the increased maintenance dredging volume. The USACE San Francisco District has several years of entrainment data that, while limited to the initial pumping period, should be used in this analysis to determine the likely impacts of increased maintenance _dredging.Specially, Section 2.2.6.2 and the biological resources alternatives analysis should include this information and data gathered during entrainment monitoring conducted during maintenance dredging performed by the USACE hydraulic dredge, the Essayons. d. Work Window. Section 5.1 on the bottom of page 5-1 appears to have an error stating that the work window for Pinole Shoal is "June 1 to November 20" rather than the typical window from June ist to November 30t h. Please modify if necessary.	in place. However, its removal would cause no loss of habitat compared to the current conditions. Per navigational safety concerns by the bar pilots and according to ER 1130-2-520, 8-2, c, 6 (policy which allows additional overdepth due to the presence of hard materials in order to ensure future maintenance of the project to the authorized dimensions), the Corps has included the removal in the project description due to safety concerns. At this time, the Corps does not propose additional mitigation to the measures taken within the project description to reduce effects of the project, which is placement of material for beneficial reuse to contribute to tidal wetland habitat. If left as is, it will not give the required 3 feet under-kneel clearance when ships approach the Pinole Shoal. b. The sediment trap is part of an advanced maintenance feature that is currently dredged to 38 feet MLLW annually. A clamshell dredge will be used as part of project construction, but maintenance dredging will be determined at the time when maintenance is necessary. c. The effects of future maintenance dredging of Pinole Shoal using a hopper dredge have been assessed as part of the Long Term Management Strategy (LTMS) for dredging in San Francisco Bay from fiscal year 2015 through fiscal year 2024 (LTMS FEIS 2015; https://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/dredging/Fed%20Nav%20Channels_FEAEIR_April%202015.pdf). Although the average amount of sediment dredged at Pinole Shoal is expected to increase from 255,000 cy to 351,800 cy during each biennial dredging event, this is well within the range of 80,000 cy to 487,000 cy dredged per year from 2000 to 2012 (see Table 2-3 of the LTMS FEIS 2015). d. The report will be modified to include the correct date.
BCDC - 6	6. Climate Change. Section 4.1.5 discusses potential contributions of the project to Green House Gas (GHG) emissions and concludes that the two alternatives would result in fewer ship calls in the future and thereby reduce GHG emissions, but there was not a significance threshold established to evaluate these results. Therefore, USACE could not make a significance determination regarding GHG emissions under NEPA. Section 5.13.1 included a short evaluation of the residual risks, which included sea level rise and storm surge. Sea level rise was determined to be the same in both the with and without-project conditions. This section described modeling results that indicated that sea level rise may cause an increase in salinity intrusion into the Delta for the no action alternative and the tentatively selected alternative, but did not include a comparison of the relative increase that could result between the two, and potential saltwater intrusion into Suisun Marsh and the Delta over the next 50 to 100 years. In assessing sea level rise impacts on projects, typically along the shoreline, the Commission staff use the California Sea Level Rise Guidance, which can be found on the California Ocean Protection Council's website and would be useful to include in the sea level rise analysis if appropriate.	Because the project does not have a projected increase in ships, we have concluded that the GHG emissions would remain the same as current conditions. Emissions would not increase with a decrease in ship traffic. The sea level rise analysis compared the effects of sea level rise in the future without project to future with project condition, and concluded there was no difference between the two. In other words, sea level rise scenarios would occur without implementation of this project. Implementation of this project would have no effect on sea level rise and additionally, sea level rise would have no effect on this project's design or functionality. The analysis followed U.S. Army Corps of Engineers (USACE) guidance in Engineering Regulation, ER 1100-2-8162 and Engineering Technical Letter (ETL) 1100-2-1.
BCDC - 7	7. Mitigation. BCDC's policies regarding mitigation state, in part, "projects should be designed to avoid adverse environmental impacts to [the] Bay': and, further, that "[w]henever adverse impacts cannot be avoided, they should be minimized to the greatest extent practicable....[and]	Thank you for your comment. The Corps has strived to include minimization measures to reduce any effects within the Bay-Delta through the TSP.

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	measures to compensate for...impacts should be required." Currently, the project does not propose any compensatory mitigation because the project includes a number of minimization measures to reduce project impacts, including beneficial reuse, and working within the environmental work windows. The inclusion of beneficial reuse in the tentatively selected project is anticipated to offset the habitat impacts of the deepening project to species such as Delta smelt. However, this may not be sufficient to mitigate for impacts to listed species, essential fish habitat, benthic communities, native species, and/or sediment transport. Additionally, if the dredged sediment is taken to SF-DODS rather than beneficially reused at a wetland restoration site, then mitigation may be required. During the consistency review process for the project, BCDC staff will coordinate with local, state, and federal agencies with jurisdiction over Bay resources to determine if mitigation is necessary to compensate for any impacts of the proposed project.	
BCDC - 8	8. Land Use. Section 2.2.6.1 states that Suisun Marsh is largely developed. Please clarify this language. The wording in this section could lead to confusion that "developed" means an urban area, which would be quite different than the existing environment of the marsh. Much of the Suisun Marsh currently consists of a large number of managed wetlands and wildlife refuges, with a number of wetland restoration projects underway or in the planning phases.	The report will be updated to include managed wetlands, wildlife refuges, and wetland restoration.
BCDC - 9	9. Environmental Justice. The Commission is in the process of amending the Bay Plan to address environmental justice issues and inequities, which will likely be in place prior to consistency review of this project. BCDC staff noted that the Draft GRR/EIS contains an analysis of the potential environmental justice impacts from the proposed project alternatives in the geographic area around the channel. While the analysis found that the tentatively selected alternative would not result in disproportionate impacts to low-income and minority populations when compared to the No Action Alternative, we want to make sure that the USACE is aware that an outreach program to affected communities will likely be required as a part of the Commission consistency review process, and these communities may not agree with this finding. In the Final GRR/EIS, please include more information to support the USACE finding that there would not be disproportionate impacts, including demographics of the communities evaluated and a map of where they are located.	The project does not result in an increase in ships, therefore, there would be no change to the surrounding landuse and area, except for the emissions from the construction that would be temporary. These emissions occur annually when the navigation channel is dredged for maintenance. Therefore, the Corps still concludes there would be no environmental justice effects. More details on the environmental justice analysis can be found in Section 4.1.12 of the main report/EIS.
BCDC - 10	10. Utilities and Underwater Cables. The Draft GRR/EIS includes an analysis of the potential impacts of the project alternatives on various underwater pipelines and utilities, including the Trans Bay Cable. Please note in Section 2.4.7.1 that the Trans Bay Cable may be less than 3-6 feet below the sediment surface or shallower in some areas. Page 4-74 states that the cable is sufficiently deeper than the proposed project in areas where the cable crosses the project area and states that the cable is at approximately -32 feet MLLW, which is above the tentatively selected alternative depth, please clarify or explain this statement.	At the two locations where the Trans Bay Cable crosses the project footprint, the cable is shown on the as-built cross-sections to be buried approximately of -48 to -49 ft MLLW. Correction will be made to the main report and clarification will be added to Appendix A.
Federal Emergency Management Agency (FEMA)	The EO states that, at a minimum, Federal agencies must comply with National Flood Insurance Program (NFIP) regulations. The requirements for environmental considerations are found in Vol. 44 Code of Federal Regulations (44 CFR), Pmi 9 Floodplain Management and Protection of Wetlands, and pmi 10 Environmental Considerations. These regulations set forth the policy, procedures, and responsibilities to implement and enforce EO 11988 and 11990. The minimum floodplain management building requirements of the NFIP are described in 44 CFR, Section 60.3.	This project is in compliance with EO 19888 and EO 11990. This information is provided in Chapter 6, Section 6.5.19 and Section 6.5.20.

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	Please review the current effective Flood Insurance Rate Maps (FIRM) for the various communities for land that has been mapped with high, moderate m1d low flood risks. The FIRM was last revised with vm'ious dates.	
Department of Transportation	***Bridges, Trestles; Culverts and Other Structures in Riparian Environments*** Some project level activities may affect riparian flow patterns upstream of bridges, trestles, culverts or other structures for which Caltrans holds responsibility. Please ensure your project level environmental documents include hydrological studies to determine whether such impacts will occur, and to identify appropriate mitigation measures.	The proposed project does not include any increase or change to the channel's width or alignment. The deepening work follows the existing channel alignment and width. Effort will be made to communicate with the Caltrans District 4 Structure Maintenance office when the project is in pre-construction engineering and design (PED) phase.
DOT – 2	***Structural and Engineering*** Operation within State bridge easement should be coordinated and supervised by Structure Maintenance Office located in Caltrans District 4. Please contact at least two weeks before start of operation by calling Mr. Ken Brown, Supervising Bridge Engineer at (510) 286-0932 or by emaif kenneth.brown@dot.ca.gov. No equipment storage or material loading can be within 50 feet of state and/or local bridges. Structure Maintenance would like to receive any soil analysis or material testing done in proximate of bridges, please send a copy by mail and email to:Kenneth R. Brown Caltrans Supervising Bridge Engineer 1801 30th Street Sacramento, CA 95816 Office: 510-286-0932 Cell: 510-520-8843 Fax: 916-227-8357 Email: kenneth.brown@dot.ca.gov	The proposed project does not include any increase or change to the channel's width or alignment. The deepening work follows the existing channel alignment and width. Effort will be made to communicate with the Caltrans District 4 Structure Maintenance office when the project is in pre-construction engineering and design (PED) phase.
DOT – 3	***Habitat Restoration and Management*** Project level activities related to habitat restoration and management should be done in coordination with local and regional Habitat Conservation Plans, and with Caltrans where our programs share stewardship responsibilities for habitats, species and/or migration routes. ***Environmental*** Please provide feedback to the following questions: • What are the anticipated impacts to the Cullinan Ranch and Montezuma Wetlands? • How will the substrate of the channel be modified? • Will there be any equipment used to lessen the impacts from turbidity such as turbidity curtain? Lastly, this project may require formal consultation from National Marine Fisheries Service (NMFS), United States Fish Wildlife Services (USFWS), and California Depaitment Fish and Wildlife (CDFW) and if there are listed or/dual listed species to be affected.	The Corps consults with the appropriate agencies on all studies, USFWS and NMFS formal co Consultations began on May 10, 2019 when the draft GRR/EIS was release for public review. Effects to Cullinan Ranch and Montezuma wetlands are discussed in their respective EISs and permits. Turbidity monitoring is performed as required by the San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) to make sure turbidity level is kept within the required threshold when scows are being filled in and start decanting water. This and the substrate of the channel will be further refined during Pre-construction, Engineering, and Design (PED) phase.

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DOT – 4	***Encroachment Permit*** Please be advised that any work or traffic control that encroaches onto the State Right of Way (ROW) requires an encroachment permit that is issued by Caltrans. To obtain an encroachment pe1mit, a completed encroachment permit application, environmental documentation, and six (6) sets of plans clearly indicating the State ROW, and six (6) copies of signed and stamped traffic control plans must be submitted to: Office of Encroachment Pe1mits, California DOT, District 4, P.O. Box 23660, Oakland, CA 94623-0660. To download the permit application and obtain more information, visit http://www.dot.ca.gov/hq/traffops/developserv/permits/.	All permits needed will be acquired prior to construction.
DOT – 5	***Lead Agency*** As the Lead Agency, the U.S. Almy Corps of Engineers is responsible for all project mitigation, including any needed improvements to the STN. The project's fair share contribution, financing, scheduling, implementation responsibilities and lead agency monitoring should be fully discussed for all proposed mitigation measures. Mitigation measures that include requirements of other agencies such as Caltrans are fully enforceable through permit conditions, agreements, or other legally-binding instruments under the control of the U.S. Army Corp of Engineers.	All permits will be acquired prior to construction.
Yocha Dehe Wintun Nation (Cultural Resources Department – ID: YD – 02062019-06)	Cultural interest and authority in the proposed project area No known cultural resources near project site Cultural monitor not requested Request contact for any new information or cultural items Cultural sensitivity training requested (provided individual to provide cultural sensitivity training)	The Corps will continue consultation with (1) Federally recognized tribes under Section 106 of the National Historic Preservation Act of 1966, as amended, and codified at 54 U.S.C. § 306108, and (2) California Native American Tribes on the contact list maintained by the Cal. Native American Heritage Commission as per Cal. Pub. Res. Code § 21073, through a Programmatic Agreement (PA) executed on February 14, 2020. Additional training will be considered during PED.
Wilton Rancharia (Environmental Resources Department)	Mentions federally-recognized status Confirmed project lies within their ancestral territory Receive all cultural resource assessments, reports, surveys, resource sensitivity, etc. Tribe requests presence for all field investigations conducted by USACE and the NSF NAHC SLF Results Geotechnical testing requires Tribal notification and consultation	The Corps will continue consultation with (1) Federally recognized tribes under Section 106 of the National Historic Preservation Act of 1966, as amended, and codified at 54 U.S.C. § 306108, and (2) California Native American Tribes on the contact list maintained by the Cal. Native American Heritage Commission as per Cal. Pub. Res. Code § 21073, through a Programmatic Agreement (PA) executed on February 14, 2020. Continued consultation and notifications will be completed during PED.
United Auburn Indian Community of the Auburn Rancheria (THPO, Cultural Resources Supervisor) 02.25.2019 from Chairman	Requests copies of cultural resource reports Requested environmental documents for the proposed project to review identification and mitigation efforts Requests participation in all surveys Offered a mappings and literature search services program Requested a meeting or site visit to begin consultation Requested tribal monitor be present for ground disturbing activities	The Corps will continue consultation with (1) Federally recognized tribes under Section 106 of the National Historic Preservation Act of 1966, as amended, and codified at 54 U.S.C. § 306108, and (2) California Native American Tribes on the contact list maintained by the Cal. Native American Heritage Commission as per Cal. Pub. Res. Code § 21073, through a Programmatic Agreement (PA) executed on February 14, 2020. Continued consultation and notifications will be completed during PED. Surveys and evaluations of potential historic properties will be completed prior to ground disturbing construction and during PED.
02.22.2019 from Cultural Resources Supervisor	Submerged Native American Historic Properties – request discussion on testing methodology and how sites will be identified Eroded Native American Historic Properties eroding into river – how will dredging affect these materials? Prefer a traditional path for them to wash out to ocean and shore.	Recommend: "The Corps will continue consultation with (1) Federally recognized tribes under Section 106 of the National Historic Preservation Act of 1966, as amended, and codified at 54 U.S.C. § 306108, and (2) California Native American Tribes on the contact list maintained by the Cal. Native American Heritage Commission as per Cal. Pub. Res. Code § 21073, through a

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	Concern over dredging disrupting this path Ceremonial cultural items deposited into river, diverting items via dredging Discussion on how to avoid this outcome	Programmatic Agreement (PA) executed on February 14, 2020. Continued consultation and notifications will be completed during PED. Consultation on survey and testing methodologies will be completed as part of the consultation process.
Northern Valley Yokuts	Requests qualified archaeological firm and Tribal monitor on board during construction Concerned about burials and/or villages in the proposed route	The Corps will continue consultation with (1) Federally recognized tribes under Section 106 of the National Historic Preservation Act of 1966, as amended, and codified at 54 U.S.C. § 306108, and (2) California Native American Tribes on the contact list maintained by the Cal. Native American Heritage Commission as per Cal. Pub. Res. Code § 21073, through a Programmatic Agreement (PA) executed on February 14, 2020. Continued consultation and notifications will be completed during PED.
Lytton Rancheria	Reviewed and determined consultation is not needed for Lytton Rancheria	Thank you for your comment
Indian Canyon Band of Costanoan Ohlone People	Concern about project being on a waterway, requests consultation Recommends Tribal and archaeological monitor present for any earth disturbance and surveys	The Corps will continue consultation with Federally recognized tribes under Section 106 of the National Historic Preservation Act of 1966 (Section 106 of the NHPA), 54 U.S.C. § 306108 through a Programmatic Agreement (PA) executed on February 14, 2020. Continued consultation and notifications will be completed during PED.
Walter Kopp	I am writing to indicate my opposition to the planned dredging of the bay. I believe the environmental risks are too great	Thank you for your comment.
Joanne Fanucchi	No dredging to allow Tar Sands Tankers into our beautiful SF Bay. Here is your very own Mission Statement in part: "To deliver vital public and military engineering services, partnering in Peace and War to strengthen our nation's security, energize the economy and reduce risks from disasters." My comments: When's the last time the fossil fuel industry has wanted Peace? War is all you're trained for. When have you strengthened our nation's security? What do we do if it's our nation that is attackingour nation? Energize the economy only for the few. Increase risks from disasters is what you will be doing should you approve dredging. There is a higher law than the federal/corporate laws you align yourselves with. The Earth is giving us all very clear signs that she is fed up with humans destroying her, stealing her life's blood for profitfor the few, raping the Earth for profit until her land is unrecognizable. If you think we're too stupid to see how the pieces are all fitting together; TransMountain Pipeline in Canada, where Indigenous people have been leading the resistance for years (and will win eventually),the ripping away of individual rights to protest the pipelines, the ripping away of freedom of speech, the shredding of justice, the sale of Shell refinery in Martinez, Ca. to make way for a New Jersey outfit to increase production and thereby increase GHGemissions 300%, the EPA now working for the fossil fuel industry, then you are wrong in thinking we will ever let this happen. I appeal to your higher selves to not make the murderous mistakes you've made in North Dakota, South Dakota, Louisiana and so many other places where pipelines run right through, around and under our preciousWater. That's what this is about. It's not about you, us, or money. It's about the Water, Air and Land. The Earth provides us with life. You take it away. Dredging along our majestic Delta will weaken the shores. In Pittsburg, Ca., where I currently reside, we have huge Petcoke storage facilities right on the shore. You dredge, the earth shifts. Things weaken.There is a real threat to our water supply should those storage tanks topple or leak. Dredging under the Benicia bridge will weaken infrastructure; there's the damage you could cause. I hope you get the picture i'm painting. There are any number of "accidents"that could happen.	Thank you for your thoughts. This project would not increase shipping traffic, it would make the current traffic more efficient, with transport of material that is currently taking place.

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	Your plan is a dangerous egomaniacal effort to control things you have no control over. Again, higher law. Time to change the way you do business and who you do it for. We implore you to see things differently. You are proposing to control the waterways by dredging. Even the smartest of you should know thatthis will backfire big time. Time to change how you see things, time to change your mission statement to align with the protecting of the Earth. The one that feeds you, your children, grandchildren and all future generations. Thank you. One other thing: Do you seriously think it's time to disturb the Earth in California? What with thousands of earthquakes happening, most small so far but some fairly strong. Disturbing the Earth is a good idea when there are 5 refineries on Earthquake faults? Seriously? Please rethink this long and hard. thank you i'm probably going to be emailing you a lot, as thoughts come up that might help you turn the tides on dredging. Let's not forget that we're talking about Ohlone territory and actually all West Coastal Tribes' land, not ours. You know the systems all have to change. We can do this. We can help you change the system that you work in to better benefit everyone, not just wage-earners and the upper tiers. I can't believe what somepeople will do for money! You first have to realize that you've been sold on thoughts and ideas of mainly people of European ancestry. They were and continue to be marauders. Why? who knows? But they are. Our nation is under attackby Our nation. I know I've said this before, but it bears constant repeating. Unlearn your beliefs, it's a crushing process. Crushing. But you watch; ask not what the earth can do for you..... when you do the right thing by the planet, you will feel an instant reward inside yourselves.It's so precious. Money can't buy it. Protect our Bays and Waterways.	
Ellen Vogel	SFBay waters are a delicate ecosystem Please do not destroy/ disturb them with this project Ellen Vogel	Thank you for your comment.
Diana Bohn	Please end The U.S. Army Corps of Engineers plan to dredge a deeper channel through San Francisco Bay whose sole purpose is to enable oil tankers to move greater amounts of crude to and from Bay Area refineries. I agree with the joint protest letter sent by environmental groups. The thirteen-mile dredging project would enable more oil trafficking on the taxpayers' dime, providing four refineries with a nearly $15 million annual subsidy. It would multiply the risk of oil spills, pump up the production of petroleum products, andincrease greenhouse gas emissions as well as the toxic burden on the Bay Area's refinery corridor. This is an abomination!! PLEASE End the dredging!	The amount of oil that is transported happens regardless of this project. This project reduces the amount of traffic that the ships have to take in order to transport the products, and therefore decreases risk of oil spills within the shipping channel.
Mr. Mortensen	Hi: I tried to submit this through the "contact" web page, but it kept coming up with an error message. So, here is my comment regarding the subject: Good morning. My name is Mark Mortensen. I live in Santa Rosa and am a teacher working with wonderful fourth grade students at McDowell Elementary School. First off, I'd like to say that I've learned and now appreciate the scope of the good work that the Army Corps of Engineers does to maintain channels in the bay, and the many other projects on which it works.	Thank you for your comments. 1. The Corps of Engineers navigation mission dates back to the commerce clause of the United States Constitution, and is to provide safe, reliable and efficient waterbourne transportation systems for movement of commerce, national security needs, and recreation. 2. According to commodity forecasts from Annual Energy Outlook 2015, provided by the U.S. Energy Information Administration, projection for crude oil imports are estimated to be

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	Today, though, I am a concerned citizen strongly opposed to the proposed San Francisco to Stockton Navigation Improvement Project. I believe the Corps' mission is not in line with this project and that it is ill-conceived for a number of reasons. I would like to share a few. 1. Dredging and deepening channels in San Francisco Bay for the benefit of four corporations in hopes that they will lower their costs to consumers is analogous to creating and paving access roads for Dairy Queen (summertime analogy) in the hopes that we will pay less for ice cream. 2. Oil, natural gas and coal are the energies of the past. Our nation grew great in part because of them, but we now know the consequences of using them. Most agree that we must move on to renewable energies. Spending over $59M to aid four fuel refineries is scandalous. All of us, by way of this project, would be casting good money after bad and further subsidizing industries that are adding to catastrophic climate change. 3. My students learn about the connections we all have to the Earth. They plant trees and shrubs to help restore degraded watersheds. They visit the Russian River and learn about its role in the North Bay. They are part of cleanup days run by Friends of the Petaluma River. They are doing what they can to help. They, and their children, and future generations deserve a life with opportunities, not a life of digging out after extreme weather events or climate induced ocean flooding. 4. The Draft Environmental Impact Statement for the project does not meet the requirements of the National Environmental Policy Act, as described in the June 24, 2019 letter from Bay Area environmental groups. 5. Tax dollars should not be spent to essentially subsidize the oil companies. They will need to change their business plan or risk becoming fossils themselves. Companies that do not adapt to changes in consumer needs (think Polaroid and Kodak) eventually go bankrupt. Our region, country, planet needs innovative and sustainable solutions to combat climate change, not dinosaurs. This project has a long way to go if the corps is determined to proceed. The energy is better spent on projects that would benefit the citizens of the Bay Area, and not on essentially providing a subsidy for four fossils...fossil fuel corporations. The Bay Area is ground central for innovation and inspiration. The Corps has an opportunity to do an "about face" on this project and be a part of the solutions needed to battle climate change.	approximately 7.8 million metric tons in 2020 and 8.2 million metric tons in 2040. These volumes are projected in absence of the recommended plan, but assumed to be the same for the analysis in the report. Therefore, no increase in volume of commodities was assumed to occur as a result of the recommended plan. The plan would allow for a more efficient means to transport the commodities. 3. Consistent with the NEPA, USACE has formalized its commitment to the environment by creating a set of "Environmental Operating Principles" applicable to all its decision making and programs. These principles foster unity of purpose regarding environmental issues and ensure that environmental conservation and preservation, and restoration are considered in all USACE activities. Section 6.6.27 of the main report includes a discussion of USACE Environmental Operating Principles and how the study addresses them. 4. The draft EIS was circulated for review by NOA in the Federal Register in Spring 2019. All correspondence has been included as Appendix I, Pertinent Correspondence. The project is in compliance with the National Environmental Policy Act (NEPA). 5. The report provides a feasibility level of analysis for higher level decision makers. Decision makers in the office of the Assistant Secretary of the Army (Civil Works) and Office of Management and Budget (OMB) will ultimately decide if the recommended plan in the feasibility report is approved for Federal participation and if Federal appropriations for project cost-sharing for construction are funded.
Sally Francis	I am a resident of the Bay Area, and I strongly oppose this ill-considered plan, for environmental and public health reasons. Sally Francis	Thank you for your comment.
Katherine Knecht	Please do not permit a deeper dredge channel for oil tanker access to the bay. We all pay for the effects and the profits are concentrated at the top.	Thank you for your comment.
Joel Gimbel	I do not want oil moving through the Bay and the Delta. It poses too much risk for life in the region. I also have concerns about weakening the faultlines that run through the Bay up into the northern Bay Area. The Hayward fault, the Franklin fault, and the Concord fault all have regular tremors around and near the Bay and the mouth of the Delta. Thank you for your service.	Thank you for your comment. The currently dredged and maintained channel proposed for deepening is used for multiple purposes, one that includes transporting oil at this time and for the proposed future.
Jason Kishineff	I am strongly opposed to dredging this area to facilitate more oil shipping. We do not need more oil shipping. In fact, we need less. Putting this area at risk to oil spills, particularlytar sands oils, which will sink, is completely unacceptable.	This project does not propose to increase oil shipping. The purpose of dredging 3 additional feet is to provide more efficiency, which allows for a decrease in the number of vessels that use the navigation channel.

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Anita Kline	I am a long-time resident of the San Franicsco Bay Area. I'm writing to express my outrage at the idea of dredging San Francisco Bay to allow for bigger ships, including those carrying tar sands oil, to use San Francisco Bay. I strongly object to the dredging for many reasons. First and foremost of these is this: We are in a global climate emergency. We are facing rapid rise in the earth's temperatures as a result of steadily rising levels of CO2 and methanein the atmosphere. We are steadily losing the clean air, water, and soil to sustain life on the planet. We need to stop, not facilitate, the extraction and flow of oil and move to renewable energy sources asap. As the Sierra Club has pointed out: "The dredging project could release up to 7.2 million additional tons of carbon dioxide equivalent into the atmosphere, along with significant increases in local air pollution. The proposed projectmay also make oil spills more likely and more severe. In 2016 a spill from an oil tanker docked at the Phillips 66 refinery sent 120 people to the hospital, and the Air District issued a shelter-in-place order for 120,000 residents in Vallejo. Please note also, as detailed in a letter to you (June 24, 2019) from several well-respected environmental organizations, that the Environmental Impact Report prepared for you "fails entirely to meet NEPA's requirements.". .The publicwas not given adequate notice from the start. . . . Likewise, although the Corps acknowledges the Project is intended to benefit transport of petroleum in and out of the Bay, it fails entirely to consider the effects of increased refinery throughput the easeof transport will bring. The DEIS also fails adequately to describe and consider impacts to climate, air quality, environmental justice communities and wildlife, including endangered species. The DEIS fails adequately to consider water quality impacts, andthe significant and foreseeable risks posed by spills of greater volumes and likelihood of increased transport of Canadian tar sands. In sum, the DEIS fails as an informational document." I am certain that when you take a closer look at this project and how it will actually affect our beloved San Francisco Bay, the people who live and work beside it, and indeed the future of life on the planet, you will understandwhy you must not approve the dredging.	Thank you for your comment, the purpose and outcome of dredging 3 additional feet is to provide more efficiency to current and future ships, which allows for a decrease in the number of vessels that use the navigation channel. Since the project proposes a decrease in ship vessels, the likelihood of a spill does not increase with the project. The NEPA process was adequately followed. Please see response to the letter you are referencing. The final EIS provides another opportunity for public review, and will be noticed through the Federal Register, press release, San Francisco website, and a public mailing as was done for the draft EIS.
Julie Twichell	I am writing to strongly oppose the proposed dredging of the San Francisco Bay for more and larger oil tankers. We don't need or want more oil in our bay especially at a time when the burning of fossil fuels is devastating our earth. We are in a man-made climate crisis that needs urgent action. The money proposed for this project is not only an extraordinary waste of public funds but increases the danger to our Bay. The people do not want this. Stop the dredging plan now!	This project does not propose to increase oil shipping. The purpose of dredging 3 additional feet is to provide more efficiency, which allows for a decrease in the number of vessels that use the navigation channel.
Jonathan Eden	I oppose widening the Bay channel for oil tankers - it will be too dangerous for the environment, including the people, animals, and plants who live around the Bay.	This project does not propose to increase oil shipping. The purpose of dredging 3 additional feet is to provide more efficiency, which allows for a decrease in the number of vessels that use the navigation channel. The channel will not be widened.
Selah Levine	Use our tax dollars for more sustainable energy sources!!	Thank you for your comment.
Kristine Karnos	As a resident of the SF Bay Area (south Bay), I'm very concerned by the plan to dredge the bay to enable increased oil tanker traffic. Reviewing the Draft Integrated General Reevaluation Report and Environmental Impact Statement (the Report), I have a number of concerns. The Study Area, Purpose and Need section states that the growth rate for crude oil imports is an annual rate of 0.3%, and petroleum and other liquid exports of 2.4%. The trend of U.S. Net Imports of Crude Oil and Petroleum Products, as easily found on the U.S. Energy Information Administration website, is markedly and dramatically downward since 2010. Blockedhttps://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=pet&s=mttntus2&f=m	This project does not propose to increase oil shipping. The purpose of dredging 3 additional feet is to provide more efficiency, which allows for a decrease in the number of vessels that use the navigation channel. The sediment will be tested during the next phase of this project, called the preconstruction, engineering, and design phase.

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	Predicted sea level rise, on the other hand, is headed decidedly upward. Note this graph on San Francisco Baykeeper. https://baykeeper.org/data_viz/official-sea-level-rise-projection I am surprised to see that sea level rise is addressed in the report primarily from the standpoint of salinity intrusion but "is not anticipated to cause any significant changes to flow rates". Is the sea level rise NOT expected to alleviate the challenges for ships carrying a heavier load? Are th perceived benefits of this project being fully considered in the context of these trends? The report notes the potential for environmental affects, The data appears to be rather old for assessing these possible affects. It notes that the sediment in Bulls Head Reach was not tested for chromium recently but is "assumed" to be similar to that of Pinole Shoal's for the same depth. The statement in section 2.2.2.2 Sediment Characteristics cites ~20 and ~30 year old reports in stating that the sediments show little contamination and pose a low level of environmental risk. " Overall, sediments in the Pinole Shoal Channel and Bulls Head Reach show little contamination and pose a low level of environmental risk (Lee 2000; Word and Kohn 1991)." The data noted from testing of sediments in the Pinole Shoal Channel note "significant bioaccumulation of the pesticide ..." and "significant decrease in normal development of echinoderm larvae".. That testing is from nearly 20 years ago. "More recent material" is from 10 years ago. There were four separate oil spills in the Bay as of March 2015: Blockedhttps://baykeeper.org/news/column/san-francisco-bay-hit-four-recent-oil-spills The sediments used for the study may have been at least later than the Cosco Busan sinking, but given the additional spills (not to mention other potential environmental degradation in the years since the dredging samples were collected), why is the study not considering more recent samples? This is a time when we should be LIMITING our carbon emissions, reducing our oil and gas use and local industry, and preparing for sea level rise. This proposal is ill-timed. Please choose the no-action alternative!	
Carol Soto	There are numerous reasons to oppose the proposed dredging of San Francisco Bay--the breathing heart of the bay area which is home to almost 8,000,000 people and multitudes of other animals and plants. But all reasons follow the ultimate reason--the earth istipping into climate chaos and we don't have much time to be able blunt the worst effects. The Army Corps of Engineers, as a part of our US military, should not be dredging a channel in public waters with public dollars to provide better passage for private ships carrying imported crude oil to refineries around the bay--to produce the very hydrocarbonsthat are causing the climate chaos in the first place! I have to continue to believe that thoughtful human beings, acting rationally, can channel our efforts to helping save the dwellers on this planet from untold suffering. I hope that the ACE will reject this proposal and turn their considerable expertise to the critical tasks before us.	Thank you for your comments. The Corps of Engineers navigation mission dates back to the commerce clause of the United States Constitution, and is to provide safe, reliable and efficient waterbourne transportation systems for movement of commerce, national security needs, and recreation. According to commodity forecasts from Annual Energy Outlook 2015, provided by the U.S. Energy Information Administration, projection for crude oil imports are estimated to be approximately 7.8 million metric tons in 2020 and 8.2 million metric tons in 2040. These volumes are projected in absence of the recommended plan, but assumed to be the same for the analysis in the report. Therefore, no increase in volume of commodities was assumed to occur as a result of the recommended plan. The plan would allow for a more efficient means to transport the commodities. The draft EIS was circulated for review by NOA in the Federal Register in Spring 2019. All correspondence has been included as Appendix I, Pertinent Correspondence. The project is in compliance with the National Environmental Policy Act (NEPA). The report provides a feasibility level of analysis for higher level decision makers. Decision makers in the office of the Assistant Secretary of the Army (Civil Works) and Office of

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		Management and Budget (OMB) will ultimately decide if the recommended plan in the feasibility report is approved for Federal participation and if Federal appropriations for project cost-sharing for construction are funded.
Linda Silver	I am writing to express my opposition to the Bay to Stockton Project which we know will benefit the profits of big oil companies. I can no longer stay silent when we know that air quality has already suffered in communities near these refineries. We all know that oil spills happen and harm people and marine birds and animals. I hope you will take a stand for what is right and just rather than just "do your job". We all know the dangers from tar sands and I do not want to see our beautiful bay destroyed by corporate greed. Please do not help increased amounts of oil to enter our Bay. We are all responsible and you have a duty to research and know what risks you are increasing.	Thank you for your comment.
Marinell Daniel	I was not able to attend the recent public meeting, but I want to express my deep concern and distress at what I have read and seen reported about the proposal. I am an 80 year old elder and a long time resident of Contra Costa County. I live in El Sobrante, Ca near the refinery corridor. I am local and my concerns are how the plan will immediately impact my community and the health of it's residence and add to the on gong climate crisis that is affecting all of us. The plan asks us (the tax paying pubic) to subsidize four refineries to the tune of $15 million a year. The project's stated objective is not to safeguard the health of our community and all who live in and near the Bay. Its objective is to reduce transportation cost and increase deep draft navigation. It's all about money and profits. At a time when we should be transitioning away from oil and coal...this plan wants to increase imports and exports. Meaning more oil spills in the Bay, more and heavier oil refined, and more pollution and asthma for our youth. The Army Corp of Engineers is just offering to repeat one of their same old projects, but this project is literally digging its and our grave. I will be joining with 1000 Grandmother, Bay Area to actively oppose this plan. I fully endorse the June 24, 2019 letter sent to Ms. Auvenshine by the Center for Biological Diversity, Communities for a Better Environment, Friends of the Earth, San Francisco BayKeeper and the Sierra Club.	The Corps of Engineers navigation mission dates back to the commerce clause of the United States Constitution, and is to provide safe, reliable and efficient waterbourne transportation systems for movement of commerce, national security needs, and recreation. According to commodity forecasts from Annual Energy Outlook 2015, provided by the U.S. Energy Information Administration, projection for crude oil imports are estimated to be approximately 7.8 million metric tons in 2020 and 8.2 million metric tons in 2040. These volumes are projected in absence of the recommended plan, but assumed to be the same for the analysis in the report. Therefore, no increase in volume of commodities was assumed to occur as a result of the recommended plan. The plan would allow for a more efficient means to transport the commodities. The draft EIS was circulated for review by NOA in the Federal Register in Spring 2019. All correspondence has been included as Appendix I, Pertinent Correspondence. The project is in compliance with the National Environmental Policy Act (NEPA). The report provides a feasibility level of analysis for higher level decision makers. Decision makers in the office of the Assistant Secretary of the Army (Civil Works) and Office of Management and Budget (OMB) will ultimately decide if the recommended plan in the feasibility report is approved for Federal participation and if Federal appropriations for project cost-sharing for construction are funded.
Anton Fulmen	I'm a San Francisco resident, and I'm writing to tell you the obvious. We need to be drawing down use of fossil fuels, and rapidly. Dredging a deeper channel to enable Bay Area refineries to make more money and process more oil is pushing inthe wrong direction. Climate change is the most dire threat our nation faces today, and this project would be making it worse. Don't spend public resources on a project that hurts our country.	Thank you for your comment.
Margaret Copi	Here is my comment in opposition to this project: The thirteen-mile dredging project would enable more oil trafficking on the taxpayers' dime, providing four refineries with a nearly $15 million annual subsidy. It wouldmultiply the risk of oil spills, pump up the production of petroleum products, and increase greenhouse gas emissions as well as the toxic burden on the Bay Area's refinery corridor.	This project does not propose to increase oil shipping. The purpose of dredging 3 additional feet is to provide more efficiency, which allows for a decrease in the number of vessels that use the navigation channel.
Marueen Brennan	The dredging of San Pablo Bay will have dire effects on my local community of Rodeo. We don't want larger crude tankers,and oil tankers coming to the North Bay. These petroleum giants need to be decreasing production. No more fossil fuel expansion. Ourair pollution here is already	This project does not propose to increase oil shipping. The purpose of dredging 3 additional feet is to provide more efficiency, which allows for a decrease in the number of vessels that use the navigation channel.

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	overwhelming, and with bigger ships, comes increased refining. No, please, no. Let's talk about corporate socialism. The taxpayer will pay the Army Corps of Engineers to dredge, so that Phillips 66 and PBF Energy/Shell grab theprofits of their dirty energy. Rodeo already ranks in the 97th percentile for hazardous wastes, the 97th percentile for asthma, the 92nd percentile for low birth weight. This dredging proposal just might wipe us in Rodeo off the map.	
Joanne Fanucchi	Good morning ~ This link is secure. It says everything I want to say to all of you. It is everything everyone who is fighting for the future of the Water, Air and Land wants to say to you. From Sept. 20-27th,get ready for the change that this young girl talks about. If you are not fighting for the future, actively, on the streets, in your council chambers, in your city, state and federal cushy offices, in your HOME, then this email is for you. Just listen.Then act. There is a higher law than the Feds or the State or the City. Civilization is crumbling. Water is being murdered along with people. And yet, you do nothing except use the information you have as cocktailparty banter. Tsk. Tsk. Shake your heads and sigh cynically. It's appalling. Most of the people in this email have the power to create real change. Not just one of you - ALL of you - ALL of US. But first, you have to admit defeat. Big defeat. Then listen to the leaders of the ClimateMovements. No one will get to sit this out in the end of life as we know it. Some of us see that already and know that 2030 is just another number. Here's praying that you wake up and rise to the challenges that we have never faced before. We have until 2030, by consensus. 2050 doesn't cut it for my granddaughter. How about yours? With optimism in the face of despair, I implore you. Pull the emergency brake on every pipeline, refinery, oil well, fracking operation, dredging plan. Legislation doesn't work. It's just paper. Thoseof you in governments that are receiving this email, know that your jobs are useless unless you do the arduous work of changing yourselves. Show some bravery.	This project does not propose to increase oil shipping. The purpose of dredging 3 additional feet is to provide more efficiency, which allows for a decrease in the number of vessels that use the navigation channel.
T Hodgson	As I'm sure you know tar Sands are very dangerous and toxic. With ships full of tar Sands traveling through the bay and up the delta it is only a matter of time until there is an environmental disaster. A large spill would be extremely difficultto clean up and possibly even possible. It could devastate the bay in the Delta 4 years to come clear. Please reconsider dredging to allow for largest ships and increase the potential for disaster. Thank you Tom Edward Hodgson Captain United States Army Corpsof Engineers	This project does not propose to increase oil shipping. The purpose of dredging 3 additional feet is to provide more efficiency, which allows for a decrease in the number of vessels that use the navigation channel. Considering that the project would not increase shipping vessels, the channel would have the same or lesser chance of risk for spills.
Felecia Philips	No on the dredging and HELL no to the Tar Sands.	Thank you for your comment.
Jeff Byers	The San Francisco Bay to Stockton Navigation Improvement Project is an improvement only for the oil industry. It is counterproductive to spend public money to benefit this industry, when the only prudent course is to reduce availability of cheap fossil fuel. This is an ill-conceived special interest project.	Thank you for your comment.
Eileen Wampole	Right off the top, two aspects of the DEIS smell like San Francisco Bay did in the 1960s. First, the name of the Project is "San Francisco Bay to Stockton Navigation Improvement Project." Yet the DEIS addresses only a 13.2 mile stretch from San Francisco Bay to Avon, miles short of the Port of Stockton, the ultimate destination and a sponsor of the Project. Was the ultimate size of the Project divided into two pieces to disguise the totality of its environmental impact? Second, while channel deepening and the resulting increase in shipping traffic and fossil fuel production will adversely impact wild life and human health as well as water and air quality, the four affected refineries will save $11 million a year through improved shipping efficiency while	The project was authorized as the "San Francisco Bay to Stockton Navigation Improvement Project", and therefore, the Corps needed to keep the same name, even though this project proposes only to deepen by three feet to Avon. This project does not propose or predict an increase in vessel traffic, please see the economics appendix for more detailed information. Because the project is not expecting the result in increased vessel traffic, an increase in ship strikes or oil spills would not be anticipated due to deepening the channel an additional 3 feet.

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	taxpayers will have to pay $3.5 million a year for the project. Four refineries profit while the rest of us lose. And money isn't the only thing we'll lose. The San Francisco Bay-Delta system is a "marvel of nature" which once teemed with life. Great efforts have been expended over the years to restore it to health. The Project threatens this progress with greater risk of oil spills, increased turbidity, ship strikes, etc. If we are to survive the global climate crisis, fossil fuel use and concomitant greenhouse gas emissions must be drastically curtailed, not encouraged. This Project will move us further from that goal. With its expertise, the Corps could help us meet the challenges of functioning without emitting dangerous levels of greenhouse gases and adapting to the changed climate already overtaking us. Thank you for considering my comments,	
Diana	Do NOT dredge a deeper channel through San Francisco Bay, the purpose of which is to enable oil tankers to move greater amounts of crude to and from Bay Area refineries.	The purpose of the project is to create more efficiency in transportation of what is currently being transported.
Joanne Fanucchi	"Once you dig up the Delta, you can't return it to its natural state." Chief Caleen Sisk, Winnemem Wintu Tribe. This goes for you, USACE https://www.counterpunch.org/2019/08/13/winnemem-wintu-chief-asks-delta-tunnel-amendment-negotiators/?fbclid=IwAR2oP119o8v3LsldMhUEAn1QfVC0EceG90T_tokkfrWp19F1ozQbnx4pl4E	Thank you for your comment.
Paula Heaney	To the decision makers, We humans now know a lot about the very real climate crisis which is already killing thousands and displacing millions of people. Surely you are all quite aware of the risks to human civilization as we know it as well as the devastation to other life on this small planet, as in one million species facing extinction within my niece's lifetime. We also know that just 100 fossil fuel companies bear over half of all humanity's responsibility for this catastrophe to beat all catastrophes. Here is a link to the Climate Majors Report <https://b8f65cb373b1b7b15feb-c70d8ead6ced550b4d987d7c03fcdd1d.ssl.cf3.rackcdn.com/cms/reports/documents/000/002/327/original/Carbon-Majors-Report-2017.pdf?1499691240> , in case you haven't read it. Furthermore, big fossil fuel companies (including but not limited to Phillips and Shell which both stand to benefit from your intended project) learned way back in the 1970s the science predicting (with frightening accuracy) our current predicament. Not only did they neglect to change their practices to avoid harming the entire world, but they did the unforgivable: in the 1980s they launched a phenomenal and quite successful propaganda campaign to obfuscate the truth and cast doubt on the science. They've lied for decades, and now people are dying <Blockedhttps://www.climateliabilitynews.org/2019/03/18/national-petroleum-council-climate-	The Corps of Engineers navigation mission dates back to the commerce clause of the United States Constitution, and is to provide safe, reliable and efficient waterbourne transportation systems for movement of commerce, national security needs, and recreation. According to commodity forecasts from Annual Energy Outlook 2015, provided by the U.S. Energy Information Administration, projection for crude oil imports are estimated to be approximately 7.8 million metric tons in 2020 and 8.2 million metric tons in 2040. These volumes are projected in absence of the recommended plan, but assumed to be the same for the analysis in the report. Therefore, no increase in volume of commodities was assumed to occur as a result of the recommended plan. The plan would allow for a more efficient means to transport the commodities. The draft EIS was circulated for review by NOA in the Federal Register in Spring 2019. All correspondence has been included as Appendix I, Pertinent Correspondence. The project is in compliance with the National Environmental Policy Act (NEPA). The report provides a feasibility level of analysis for higher level decision makers. Decision makers in the office of the Assistant Secretary of the Army (Civil Works) and Office of Management and Budget (OMB) will ultimately decide if the recommended plan in the

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	change/> . It is folly on the grandest scale imaginable, or perhaps madness, to continue the gluttonous and unmitigated burning of fossil fuels. Now, I hear you all want to use millions of dollars of taxpayer money to go damage the bottom of the San Francisco Bay so that some tankers can scoot around more easily to deliver crude oil to refineries <Blockedhttps://www.spn.usace.army.mil/Missions/Projects-and-Programs/Projects-by-Category/Projects-for-Navigable-Waterways/San-Francisco-Bay-to-Stockton-JFB-/> , the result of which, in the best case scenario, will put more money in the hands of morally bankrupt oil companies and facilitate the continued pouring of carbon into our already overloaded atmosphere. What a terrible plan. Shame on you.	feasibility report is approved for Federal participation and if Federal appropriations for project cost-sharing for construction are funded.
David Gassman	It is clear from the DRAFT INTEGRATED GENERAL REEVALUATION REPORT AND ENVIRONMENTAL IMPACT STATEMENT that the plan is to dredge a deeper channel so that oil tankers can move more crude oil to, and refined oil & other fossil fuel products from, Bay Area ports & refineries. This is PRECISELY WHAT WE HAVE TO STOP ENABLING as a nation. We now know that there is an ecological crisis taking place that, among other things, requires humanity to stop the wide-spread combustion of carbon-based fuels. The result of that combustion (carbon-dioxide) is trapping heat & warming the planet to an extra-ordinary degree. It is also acidifying the oceans by combining with water to produce carbonic acid. Fossil fuels have to be discontinued as much as humanly possible. This is a very flawed & bad project & detailed analysis & intense argument will not make it any better. THANK YOU.	Thank you for your comment.
Charles Davidson	A growing number of citizens of Rodeo and neighboring communities have questions and concerns about the *Pinole Shoal Channel portion* of the U.S. Army Corp of Engineers San Francisco to Stockton, California Navigational Improvement Plan. The Plan, now modified to end at its eastern limit at the Avon Marathon Refinery near Martinez, pertains to dredging and deepening of the "channels in the study area [which] primarily serve oil imports and refined product exports to and from several oil refineries and two non-petroleum industries". Our three main concerns are related to: 1) Questions regarding the actual material necessity of the Pinole Shoal Channel deepening portion of the USACE project, which has merely a single refinery as the sole beneficiary, 2) The potential for a large, unexpected liberation of toxic heavy metals from Bay mud dredging in the vicinity of the Selby Slag (California) superfund site, and 3) The USACE plan is to have the Post of Stockton be the CEQA deciding agency and non-Federal sponsor, despite the entire project being located in Contra Costa County. We believe that: 1) he Pinole Shoal Channel deepening portion of the USACE dredging project should be cancelled, 2) ay mud toxicity tests should be conducted in the vicinity of the Selby Slag (California) superfund site (located within San Pablo Bay), 3) he overall local jurisdiction and non-Federal sponsor for the project should be Contra Costa County (and not the Port of Stockton), and	1. QUESTION #1: Does the Federally funded deepening of the Pinole Shoal Channel portion of the USACE project selectively benefit the owners of a single business enterprise, namely Phillips 66, which is located west of the Carquinez Bridge (and not the other Bay Area refineries and businesses located east of the Bridge, which are also designated as the project's beneficiaries)? Response: Current NOAA charts show that sections under the Carquinez bridge are between -54 to -76 MLLW. There appears to be no draft restriction at the Carquinez bridge, and as such, the study assumptions include benefits to all 4 refineries from a -38 MLLW project. QUESTION #2: Why is the Port of Stockton the project's a) non-Federal sponsor, b) determiner of CEQA compliance and c) sole local deciding jurisdiction, despite the entire navigation channel dredging being located solely within Contra Costa County and ending over 50-miles west of the Port of Stockton)? Response: The Port of Stockton, as the signatory on the cost sharing agreement guiding study execution, has been the official non-federal sponsor for the study since its inception. Subsequent to study area re-scoping, the Port has worked in close partnership with Contra Costa County to support study completion. The Port of Stockton and Contra Costa County are closely coordinating and will jointly make the determination re: CEQA compliance approach, lead designation, and documentation. 3. *QUESTION #3: In the area of the Pinole Shoals Channel nearest to the Selby Slag (California) superfund site, what special hazardous materials considerations have been made to investigate, safely dredge and properly dispose of potentially toxic Bay mud (which would be expected to contain unusually high levels of specific toxic heavy metals)?*

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	4) ederal resources for dredging should be re-dedicated to dredging the various municipal marinas in San Pablo Bay and the Carquinez Strait, especially to facilitate ferry service. Three important background facts, concerns and related questions are: CONCERN #1: The Pinole to Avon dredging project is physically divided by the Carquinez Bridge, which has a 35 foot *permanent* limit. The Pinole Shoal Channel deepening from 35 to 38 feet (of the western portion of the 13.2 mile dredging Plan), thus, appears to benefit only a single refinery, namely Phillips 66. Post-dredging, only Phillips 66 - but no other existing business enterprises east of the Carquinez Bridge - could take deeper draft ships or more fully loaded ships out to and from the Golden Gate. The USAE EIS states: "Phillips 66...operates three docks located in the waters off Rodeo, California, at the eastern end of the Pinole Shoal Channel [and]...The berths can accommodate vessels up to 1,000 feet long with depths up to -38 feet MLLW". While future shipping traffic over the sediment trap at Bulls Head Reach, would indeed be facilitated by the proposed USACE deepening *eastward* of the Carquinez Bridge, but those ships would *not* benefit from the Pinole Shoal Channel deepening to 38-feet (due to the permanent 35-foot depth limit at the Bridge). *QUESTION #1: Does the Federally funded deepening of the Pinole Shoal Channel portion of the USACE project selectively benefit the owners of a single business enterprise, namely Phillips 66, which is located west of the Carquinez Bridge (and not the other Bay Area refineries and businesses located east of the Bridge, which are also designated as the project's beneficiaries)?* CONCERN #2: The project's proposed channel deepening between Avon (in mid-Contra Costa County) and the Port of Stockton has been cancelled due to concerns about saltwater intrusion into the delta. The two related jurisdictional concerns are that the Port of Stockton has no material benefits which could accrue from the Pinole Shoal Channel deepening portion of the multipart USACE project, due to both a) the 35-foot depth limit at the Carquinez Bridge and b) that all project components are located in Contra Costa County. It is undemocratic that the current deciding jurisdiction and non-Federal sponsor for the project is the Port of Stockton and *not* Contra Cost County. *QUESTION #2: Why is the Port of Stockton the project's a) non-Federal sponsor, b) determiner of CEQA compliance and c) sole local deciding jurisdiction, despite the entire navigation channel dredging being located solely within Contra Costa County and ending over 50-miles west of the Port of Stockton)?* CONCERN #3: The 66-acre, 2.5 million ton Selby Slag superfund site ("co-owned" by lessee Phillips 66 and the State Lands Commission) is located immediately to the west of the Carquinez Bridge. The former Selby smelter's legacy metals slag heap was placed over a stream and tidal mud flat and has leaked a panoply of toxic heavy metals into the Bay for nearly 150 years, such as cadmium, lead, nickel, zinc and arsenic. The slag is fully open to the Bay and the groundwater underneath the slag was tested by the DTSC and contains extremely high amounts of these metals. However, neither the DTSC's Selby Slag Remediation Project EIR, nor previous DTSC Selby Slag documents ever included measurements of Bay mud toxin contents *beyond* the immediate asphalted top of the 66-acre slag. In total, there are three dredging projects currently planned for Selby Slag and the immediate environment. Dredging activities for the USACE are in addition to dredging for the DTSC's Selby	The material to be dredged from the proposed deepening project is unlikely to be adversely impacted by the proximity to the Selby Slag site. Deeper materials generally are characteristic of naturally occurring chemistry while anthropogenic contamination is usually limited to the top of the sediment profile. Since this channel has long been maintained by annual maintenance dredging, any contamination from the nearby slag pile likely gets removed from the channel bottom periodically. However, if prior to the proposed deepening project, during pre-construction, engineering and design phase (PED), multiple sediment samples would be collected along the project channel and tested for metals and other contaminants. The laboratory results would be compared to state and federal sediment quality standards as well as any standards specific to disposal locations. If sediments with contaminant concentrations in excess of the standards were found, they would be disposed of in alternative disposal sites such as upland landfills rather than placed in the targeted wetland restoration site.

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	Slag Remediation Project (building a 4,450 foot sheet metal seawall containment with pylons) and the proposed five-berth Selby Slag Seaport Plan (currently proposed by BCDC and the MTC to be placed *on top* of the Slag for "*liquid bulk*" transport as part of the San Francisco Bay Seaport Plan). *QUESTION #3: In the area of the Pinole Shoals Channel nearest to the Selby Slag (California) superfund site, what special hazardous materials considerations have been made to investigate, safely dredge and properly dispose of potentially toxic Bay mud (which would be expected to contain unusually high levels of specific toxic heavy metals)?* Cures and Corrections (3): #1: The Pinole Shoal Channel deepening portion of the USACE dredging project (from 35-feet to 38-feet) should be *cancelled*, because both a) the 35 foot dredging limit at the Carquinez Bridge prevents deeper draft or more ully loaded ships form transiting past the Bridge and b) the corporate beneficiary of that portion of the USACE project is merely a single company, namely Phillips 66. Additionally, the unmeasured, but highly suspected, toxicity of the Bay mud near Selby Slag and the cost of appropriate toxic dredging spoils disposal protocol is another reason to cancel the Pinole Shoal Channel deepening to 38 feet. #2: The principal deciding agency and non-Federal sponsor under CEQA provisions should be Contra Costa County and not the Port of Stockton, because the Avon to Stockton portion of the plan has been cancelled, yet the currently modified proposed USACE project is located entirely in Contra Costa County. #3: Instead of deepening the Pinole Shoal Channel, federal resources should be re-dedicated to dredging the various municipal marinas in San Pablo Bay and the Carquinez Strait, especially to facilitate ferry service (which is expected to increase significantly as part of regional transportation planning), such as in San Rafael and Martinez and at the proposed Hercules Intermodal Transit Center (with a combined train, bus and ferry terminal and located near the I-80 and Hwy 4 interchange).	
Jan Warren – Regional DMMP Meeting	It seems an interesting correlation that the 2004-2010 DMMP wasn't completed in 2010 and now there is a new DMMP proposed that would coincide with refineries planning to bring oil tar sands to the Bay Area. The dredging project alone could release up to 7.2M additional tons of CO2 equivalent into the atmosphere, along with significant increase in local air pollution. As Mr. Townsley admitted the process wasn't handled well. The public barely found out about the DEGRR& EIS in time to submit a comment by the June 24, 2019 deadline, although the proposal came out in April, 2019. Likewise, the "public" meeting on July 19, 2019 was difficult for the public to hear about. As I look at the SF RDMMP timeline the July 19 meeting is the only public meeting scheduled. As stated in the April 2019 DEGRR & EIS "the channels in the study area primarily serve crude oil import s and refined product exports to and from several oil refineries and 2 non-petroleum industries".	This project itself is not proposing to increase the amount of oil transported throughout the Bay, it is proposing to increase the efficiency of the transport by dredging the existing and maintained navigation channel an additional 3 feet MLLW. The additional 3 feet does not result in toxic chemicals being released, however, more testing will occur during the next phase of the project to confirm the sediment characteristics. According to commodity forecasts from Annual Energy Outlook 2015, provided by the U.S. Energy Information Administration, projection for crude oil imports are estimated to be approximately 7.8 million metric tons in 2020 and 8.2 million metric tons in 2040. These volumes are projected in absence of the recommended plan, but assumed to be the same for the analysis in the report. Therefore, no increase in volume of commodities was assumed to occur as a result of the recommended plan. The plan would allow for a more efficient means to transport the commodities. The public was notified of the release of the draft EIS through several venues. The Corps produced a mass mailing of over 1000 participants on a previously used mailing list for California projects to notify agencies, surrounding home/land owners, and interested parties of the location of the document (on the Corps Jacksonville website where all of our NEPA documents go), and hard copies were located at two public libraries in the Stockton area. A

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	We support wetlands restoration, but not as a cover for creating access for more crude to be refined and exported. If you want to dredge San Rafael to allow small businesses in Marin and elsewhere to prosper, great. Put the dredged materials in places to provide wetlands restoration. We don't want or need dredging of toxic chemicals in the Carquinez Strait and Suisun Bay to allow further deaths and harm to existing communities along those waterfronts.	Press Release out of the San Francisco Corps office was released on May 10, 2019 to announce the release and location of the document files as well. As noted, the document was announced on the San Francisco District Corps site as well under News (https://www.spn.usace.army.mil/Media/News-Stories/Article/1844299/eis-for-san-francisco-to-stockton-navigation-improvement-project-now-available/), with the location of the document files. The press release included an article in Dredging Today. The document release and files were also noticed through the state clearinghouse on the CEQA website (even though it is a Federal document) in order to reach the most people possible under the typical venues that NEPA and CEQA documents are released (https://ceqanet.opr.ca.gov/2019059049/2). A NOA was published in the Federal Register on May 10, 2019 (EIS No. 20190088) as well. A public meeting was held on June 11, 2019 that was announced in the aforementioned mailing, and again announced with the press releases in the Bay Area. The Corps has continued to accept comments and comments are included in this comment response matrix. Please let the Corps know of other venues that would help the public find the document files and articles regarding the release of environmental documents to help address your concern.
Maureen Brennan - DMMP	The dredging of San Pablo Bay will have dire effects on my local community of Rodeo We don't want larger crude tankers, oil tankers coming to the North Bay These petroleum giants need to be decreasing production No more fossil fuel expansion . Our air pollution here is already overwhelming, and with bigger ships, comes increased refining No, please, no. Let's talk about corporate socialism. The taxpayer will pay the Army Corps of Engineers, so that P66 and PBF Energy/Shell grab the profits of their dirty energy.	This project does not propose to increase the size of the vessels traveling through the Bay, it will only increase the efficiency of the current vessels that are transporting materials.
Regional DMMP Comment/Question Card – Miles Brooks	You need to reach out and host meteing in the communities that are going to be affected most. Whether it be Rodeo, Richmond, Alameda, etc. You need to go into those cities and actively engage with people who cannot attend this meeting. You MUST make to forum open to all and make sure you do everything you can to publicize the comment meetings. You also need to hear and act in response to local peoples concerns/health effects/desires for the future in relation to the project. Reach out to communities and people are the bay to hear their opinion on the project.	The public was notified of the release of the draft EIS through several venues. The Corps produced a mass mailing of over 1000 participants on a previously used mailing list for California projects to notify agencies, surrounding home/land owners, and interested parties of the location of the document (on the Corps Jacksonville website where all of our NEPA documents go), and hard copies were located at two public libraries in the Stockton area. A Press Release out of the San Francisco Corps office was released on May 10, 2019 to announce the release and location of the document files as well. As noted, the document was announced on the San Francisco District Corps site as well under News (https://www.spn.usace.army.mil/Media/News-Stories/Article/1844299/eis-for-san-francisco-to-stockton-navigation-improvement-project-now-available/), with the location of the document files. The press release included an article in Dredging Today. The document release and files were also noticed through the state clearinghouse on the CEQA website (even though it is a Federal document) in order to reach the most people possible under the typical venues that NEPA and CEQA documents are released (https://ceqanet.opr.ca.gov/2019059049/2). A NOA was published in the Federal Register on May 10, 2019 (EIS No. 20190088) as well. A public meeting was held on June 11, 2019 that was announced in the aforementioned mailing, and again announced with the press releases in the Bay Area. The Corps has continued to accept comments and comments are included in this comment response matrix. Please let the Corps know of other venues that would help the public find the document files and articles regarding the release of environmental documents to help address your concern.
Regional DMMP Comment/Question Card – Irene Dick Endrizzi	I Demand we re-open the comment period for the SF Bay to Stockton Navigation Project. Remember Benson, AX and the corrupt ACE plans for the President's Donor.	Public comments have continued to be accepted on this project past the June 24, 2019 date. Also, the public will have another chance to comment through the NEPA process when the Final EIS is released.

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Regional DMMP Comment/Question Card – Denice Denius	Please set up a public hearing on the SF Bay to Stockton Project. Thank you!	The project team had a public meeting on the SF Bay to Stockton Navigation Improvement Project on June 11, 2019 that was announced in a mass mailing, as well as on the San Francisco website. If you have questions regarding the project, please feel free to email or call the project manager on this project. Pam Castens Pamela.G.Castens@usace.army.mil
Regional DMMP Comment/Question Card – Pennie Opal Plant	I would like to see more information on sea level rise and why this project, which will take many years is still being considered. What happens to toxic dredged material? Where does it go? I absolutely oppose dredging so close to the Delta whose marine life is already at risk – the Delta smelt, an anchor species, has almost disappeared. How does dredging up toxins impact the Delta and life in the Bay? Will dredging the area in the East Bay make the water too toxic to fish in? To swim in?	The sea level rise analysis compared the effects of sea level rise in the future without project to future with project condition, and concluded there was no difference between the two. In other words, sea level rise scenarios would occur without implementation of this project. Implementation of this project would have no effect on sea level rise and additionally, sea level rise would have no effect on this project's design or functionality. The analysis followed U.S. Army Corps of Engineers (USACE) guidance in Engineering Regulation, ER 1100-2-8162 and Engineering Technical Letter (ETL) 1100-2-1. The dredged material is not expected to be toxic, and if the sediment has contaminated levels, Montezuma wetlands still accepts contaminated materials from the Bay-Delta. The sediment will be tested during the next phase of the project, once approved. The existing navigation channel is currently maintenance dredged every year, and to the current depth, does not have contaminated materials.
Regional DMMP Comment/Question Card – Anton Fulmen	We need to be drawing down fossil fuel use. A project to ease shipping oil is wrongheaded and harmful to the world and our nation. What you do with the dredged material is irrelevant – the project shouldn't be done at all.	Thank you for your comment.
Regional DMMP Comment/Question Card – Sara Greenwald	How will the dredging facilitate oil shipping to and from the north bay refineries and to and from the parks here in SF/Oakland?	The proposed increase in 3 feet within the existing navigation channel would increase efficiencies for the shipping vessels to more heavily load the ships along the same navigation channel.
Regional DMMP Comment/Question Card – Rochelle Towers	Don't want dreding. Bigger tanks more pollution, more oil, tar sands from Canada.	The proposed 3 feet of additional dredging in the existing navigation channel does not increase the size of the vessels traveling throughout the Bay. Please see Chapter 3 of the report and the Economics appendix that explains the benefits of the project.
Regional DMMP Comment/Question Card – Victoria Eley	Dredging does not make sense. At this time why would the continued use of fossil fuel be a viable option. We have many forms of alternative energy at our disposal. This plan uses public funding to continue to destroy the environment while privatizing profits. Dredging is not a viable option that the citizens do not want.	The Corps of Engineers navigation mission dates back to the commerce clause of the United States Constitution, and is to provide safe, reliable and efficient waterbourne transportation systems for movement of commerce, national security needs, and recreation. According to commodity forecasts from Annual Energy Outlook 2015, provided by the U.S. Energy Information Administration, projection for crude oil imports are estimated to be approximately 7.8 million metric tons in 2020 and 8.2 million metric tons in 2040. These volumes are projected in absence of the recommended plan, but assumed to be the same for the analysis in the report. Therefore, no increase in volume of commodities was assumed to occur as a result of the recommended plan. The plan would allow for a more efficient means to transport the commodities.
Regional DMMP Comment/Question Card – James Mazza	Thank you for providing the opportunity for public comment on the DMMP at your Dredge Material Management Plan Public Meeting Friday, July 19. Please accept this correspondence as part of your announced forum. I honor the Corps' mission to maintain safe and efficient navigation in our Bay and especially a plan for Bay maintenance that takes a regional approach. I work weekly with children in the heart of one of America's toughest inner-city neighborhoods, in the once-abandoned city parks in Richmond 's Iron Triangle neighborhood, to support rich, creative, outdoor play as a vehicle to spark and foster healthy child development. These are the children and families most affected by continued refinery flares.	Thank you for your comment.

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	On June 4, 2019 KQED News reported that Chevron' s Richmond refinery has experienced 17 malfunctions that resulted in the facility sending gases to its flares during the first five months of this year, already almost doubling the number of flaring episodes it committed in all of 2018.	
Lee Rudin	This alarming plan will pump up the production of petroleum products, multiply the risk of oil spills in our waters, threaten marine life, and increase greenhouse gas emissions and toxic pollution. And it will gift four refineries with a nearly $15 million annual subsidy from our tax dollars. Thank you, lee Rudin Daly City, CA	Thank you for your comment.