



County of Humboldt

Humboldt Offshore Wind Community Engagement and Mapping

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COMPLIANCE AND FUNDING DISCLOSURE

This report has been prepared by Xodus Group exclusively for the benefit and use of County of Humboldt, County Workforce Development Board and Humboldt County Division of Economic Development. This report has been funded by Humboldt County's Economic Development Board (HCWDB). Xodus Group expressly disclaims any and all liability to third parties (parties or persons other than County of Humboldt County Workforce Development Board and Humboldt County Division of Economic Development) which may be based on this report.

This work was undertaken in compliance with the applicable requirements of the Federal Funding Accountability and Transparency Act, 2 C.F.R. Part 200, 2 C.F.R. Part 2900, and all relevant implementing regulations, policies, procedures, and standards in effect at the time of performance, as amended.

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APPENDIX A



1 INTRODUCTION

1.1 Humboldt & Redwood Coast Community Engagement Scope of Work

Xodus has been contracted by Humboldt County's Economic Development Division, on behalf of the Humboldt County Workforce Development Board (HCWDB) to develop a comprehensive local and regional supply chain, workforce, and community assessment of their current capabilities and ability to support the offshore wind industry in the future. In this case, Humboldt County is defined as 'local', and the wider Redwood Coast region, including Del Norte, Mendocino, and Lake Counties, as well as Tribal Lands, are collectively defined as 'regional' (Figure 1-1). This assessment required a comprehensive understanding of the priorities, concerns, and perspectives on the emerging offshore wind industry of local residents, including Indigenous populations, as they pertain to offshore wind development in the region.

The Community Engagement scope consists of several phased activities, defined further in section 2.4, the results of which will inform the supply chain assessment and workforce assessment. A Community Mapping scope was conducted in tandem with this work, which consisted of desktop research to compile a database of relevant entities in the study area, which assisted in informing initial engagement targets for this scope. While the Mapping portion of the scope seeks to identify key organizations, relationships, and information pathways in the region, the Engagement scope is more focused on providing additional insight and context to the ecosystem in the region.



Figure 1-1 - The four counties forming the study area. Tribal lands are shown in additional figures below.



1.2 Extent of Project Engagement

Xodus Group has prepared this study for the benefit and use of County of Humboldt, County Workforce Development Board, Humboldt County Division of Economic Development, and the community. This report has been funded by Humboldt County's Economic Development Board (HCWDB).

It is crucial to note that the scope of this project does not include the intense, multi-year engagement that is required in the region for the offshore wind industry to responsibly develop. Rather, Xodus's scope is meant to undertake engagement with the goal of informing the specific studies requested by the County, namely ecosystem mapping, supply chain, and workforce studies.

Mapping entails enough engagement to suitably understand the high-level relationships and interactions between major organizations and players in the region. This information will provide the County, its partners, and the public with an understanding of key influences in the region and how they may view and influence offshore wind industry development. It will also provide a picture of how information is disseminated through different groups and individuals in the region. This will be useful as the County develops their own strategy for how they can most efficiently manage their role in the regional development process and how to access or share information as needed in the future.

It is important to note that the term 'stakeholder' can be sensitive and inaccurate, particularly when referring to Tribal members, who may feel it disenfranchises them from their meaningful role as standalone governments and active stewards of the land and environment. As such, Xodus strives to use the term 'community engagement' or 'ecosystem mapping' where possible.

Xodus has engaged with many of the organizations and individuals who are active in the region to understand the following:

- Which organizations and individuals are currently active in the discussion around offshore wind development in the region?
- What are the perspectives and key concerns of these groups and community members?
- How is information shared on the subject in these communities (ex. Events, newsletters, reports, Facebook groups, etc.)?
- Who or what influences these individuals and broader community perception in regard to offshore wind development?

While the project team does intend to develop as extensive a list of organizations as possible, we do not intend to reach out to every organization, as this is not appropriate to the scope and purposes of the study. However, the team still wants entities to have the opportunity to engage in the mapping, and where relevant, the supply chain and workforce scopes; virtual surveys have been used to fill the gaps where 1-to-1 conversations are not practical. See **Error! Reference source not found.** for more information on the number of organizations engaged by focal area and engagement type.



While this scope of this study covers four counties in the region, it is clear that most of the organizations, jobs, and training opportunities would be localized in Humboldt County. This is due to the rural nature of the areas overall, as well as existing infrastructure and logistics in Humboldt (proximity to the port, existing industrial sites which could be repurposed, presence of the workforce, etc.). The studies will consider how opportunities established here could flow out to the surrounding counties.

1.3 Principles of Engagement

When undertaking community engagement efforts, there are a number of core principles that should be upheld as best practice. The Xodus team used the following principles to guide their engagement throughout the project:

1. Listen openly to the perspectives of participants and act as a neutral third party gathering information on behalf of the County.
2. Clearly communicate how information gathered during these conversations will be used. Likewise, as the team engages with organizations and asks more of them, the value of this study should be clearly articulated. Namely, an organization's inclusion in this study ensures that the County is aware of their role in the development of the industry and concerns or priorities they may raise. Additionally, the results of the supply chain and workforce assessments will serve to provide the County with strategic direction for development which may influence the localization of jobs and industry in support of offshore wind development.
3. Use available tools to make engagement more accessible, such as through hosting virtual meetings and deploying surveys to gather information with lower effort and time required from individuals.
4. Offer access to the team's expertise to those engaged through a willingness to answer questions and provide additional resources where practical.
5. Maintain open communication pathways with organizations and community members, for example, through sharing contact details for the study leads.

1.4 Regional Context

Each community and region has its own unique ecosystem and range of concerns, sensitivities, and political complexities. This section of the document provides some context on complexities throughout Humboldt and the wider Redwood Coast region, as identified through background research and ongoing community engagement.

Humboldt County and the greater Redwood Coast region have a history of boom-and-bust industrialization cycles. Having previously hosted major timber industries, followed by cannabis production, the region now sees offshore wind development on the horizon as a major industrial contributor. As such, there is naturally some hesitation and healthy scepticism regarding whether this industry will be like the others – i.e. short-term and potentially damaging – or whether it will have some sustained positive impact to the local economy and broader communities. Beyond this, the advent of large-scale offshore wind power generation technology also poses many questions and concerns regarding aspects ranging from how this technology will impact the environment to questions on visual impact and capacity



concerns for wraparound services in the region. With all of these uncertainties, understanding how information is flowing through the communities and which organizations have a larger share of the responsibility for this becomes increasingly important. Such pathways can become a tool to disseminate updates and address misinformation as it arises throughout the planning and development process.

Also important to note is that proper Tribal engagement is crucial for effective and equitable development of new industries in the region. With the historic crisis surrounding Missing and Murdered Indigenous People (MMIP), there is an additional pressure and responsibility to ensure that the voices of local Tribal governments and communities are being heard and that their suggestions for equitable and sustainable development are implemented. Tribal engagement for this scope was undertaken through in-person presence in the region, including at the 2024 POWER CA Summit and the 2024 Tribal Offshore Wind Summit, as well as through outreach to the Northern California Tribal Chairmen's Association and discussions with representatives from local Tribes, including Blue Lake Rancheria and the Hoopa Valley Tribe. Additional outreach was undertaken through local government, including Humboldt County, to discuss offshore wind development as it pertains to this scope. These engagement sessions provided an opportunity to listen and speak with Tribal representatives, whose perspectives have helped to inform this study. It is noted that offshore wind project-specific Tribal engagement should include in-depth outreach to all Tribes within the region to best determine each government's desired level and method of involvement in discussions moving forward.

On the ground, face-to-face engagement is critical in the Humboldt region. During the Partnering for Ocean, Wind and Energy Renewables in California (POWER CA) Conference and associated meetings, many community members emphasized the importance of meeting with people in person and directly asked how often the Xodus team would be visiting on behalf of the County. In response to this, the Xodus team arranged follow-up visits to meet more community members in person to allow for face-to-face engagement with contacts.

There are also concerns in the region regarding the frequency and intensity of engagement as it ramps up alongside offshore wind development efforts. Engagement fatigue can be a very real issue, especially for those entities that struggle to maintain the capacity necessary to engage on these issues in a meaningful way throughout the long planning phases. Additionally, with many different entities undertaking studies in the region, it is crucial to identify what work is being done so that teams can find synergies in their work and avoid duplication of efforts and the confusion that often accompanies it. The following sections highlight key initiatives and work being undertaken in the region in an effort to identify some of the leading entities in each focal area to support additional collaboration and conversations in the Redwood Region.

1.5 Humboldt County Government – Roles & Responsibilities

Much of the decision making and regulatory work to support offshore wind development happens at the state and federal level. However, there are some crucial areas in which County-level government can provide support and ensure that their community members are kept informed of industry updates and also presented with opportunities to directly benefit from this new industry work (Figure 1-2).



The most significant role at the County level will be through the Offshore Wind Liaison/Offshore Wind Lead position. This individual should be consistently engaged with relevant community members, organizations, industry leads, and state and federal government, as relevant. Public recognition of this role means that interested parties know who to reach out to as a first step in getting looped into relevant communication networks and initiatives. With a role having accountability for staying updated on offshore wind development efforts, there will also be greater opportunity to capitalize on existing programs and initiatives by ensuring that those involved are including the most relevant resources.

While some of the County-level departments will be needed to support day-to-day logistics of the industry (such as through permitting, and the provision of health, accommodation, and education services), many of the opportunities to lead on local benefit initiatives will flow through the Economic Development arm of County government. The Offshore Wind Liaison role will oversee initiatives happening within the Economic Development arm as well as those within other branches of the County government. For example, the Workforce Development Board and Headwaters Fund Board, assisted by external local Chambers of Commerce, non-profits, and community-based organizations, could identify programs to support targeted investment in local businesses, either through supply chain upgrades, training programs, or other educational initiatives. With direct connections to and participation from business leaders in the community, these groups will have greater insight into the shifting needs of the business landscape in the Redwood Region as development continues. Similarly, the Samoa Peninsula Enhanced Infrastructure Financing District (EIFD) will need to gauge and manage interest in the available real estate assets on the Peninsula, especially where right of ways and other relevant development logistics come into play. The Department of Public Works, Environmental Health and Planning and Building will need to be engaged as relevant through the development and planning process to support the assessment of development proposals put forth by the port and offshore wind developers.



Figure 1-2 - High-level overview of key responsibilities relating to offshore wind development across County government offices.



2 METHODOLOGY

The following section of this reports highlights the process for community engagement and mapping throughout the project study area. Importantly, it details the relationship between the ecosystem mapping and engagement portions of the study. Community engagement is one area that will never be ‘complete’; it is naturally an ongoing process and as such, this is a living document which will be managed adaptively as additional information becomes available through further conversation with community members in the region.

2.1 Engagement Focal Areas

For the purpose of this work, several key engagement categories were identified and are defined as follows; these definitions were primarily informed by previous experience and project work and knowledge of the region. They are used throughout the report to categorize and visualize the different sectors of organizations which are represented herein. Some organizations may fall into more than one category – where singular categories are required (for example, in the mapping visual later on), the most relevant category definition was used.

- **Research and Advocacy Groups** – include but are not limited to research institutions.
- **Educational Institutions** – include but are not limited to universities, colleges, community colleges, technical and vocational schools, and union training facilities.
- **Workforce (Labor, Trades, Unions)** – include but are not limited to unions, labor, trades, union training facilities, workforce development boards, and trade councils.
- **Government Agencies/Utilities** – include but are not limited to cities or counties, government offices, state agencies, and county agencies.
- **Indigenous Governments and Organizations** – include but are not limited to Tribal nations and Tribal associations.
- **Industry Associations/ Supply Chain** – include but are not limited to small businesses, local industry partners, Chamber of Commerce, local agencies (including economic development organizations), and database providers.
- **Offshore Wind Developers** – this can be any major developer, but will namely be RWE and Vineyard Offshore for this region.
- **Environmental Organizations** – include but are not limited to conservation organizations focused on specific environment subsets (marine mammals, birds, plastic pollution, etc.), broader coastal accessibility and environmental recreations groups, climate groups, and citizen scientists.
- **Port Operators and Port Associations** – include but are not limited to port development agencies and harbor agencies/harbor masters.
- **Community Organizations** – include but are not limited to community centers, foundations, agencies, boards and committees.
- **Fisheries & Mariculture Organizations** – include but are not limited to vessel owners, ports and harbor masters, commercial fishery organizations and associations, regional fishery organizations and associations relating to



catch, sale, production, marketing, or conservation of seafood sources, government entities focused on fisheries management, and sportfish and recreational fishing groups.

2.2 Community Engagement Meetings

In order to deliver a structured and useful engagement report, the Xodus team asked consistent questions establishing a baseline for current activity and perceptions in the region. Each formal engagement session took approximately 45 minutes, with the following 15 minutes to allow for finalization of minutes and reporting (1 hour total per meeting). The following agenda was suggested for each meeting, though there was flexibility to follow the natural flow of conversation in order to gather information outside the anticipated scope:

- 0-15 minutes – introductions and background on the project, how information will be used.
- 15-45 minutes – general discussion, led by the following questions:
 - What is your/your organizations perception of offshore wind development in the region?
 - Do you have particular concerns, interests, hopes regarding the industry locally?
 - How is your organization involved in the conversation around offshore wind?
 - Do you engage with other organizations involved in offshore wind (i.e. what is their focal area? workforce, supply chain, etc.)? If so, who? How often? What is your perception of those organizations' engagement in the topic (i.e. are they leaders, influencers, funders, proponents, opponents, beneficiaries, etc.)?
 - How do you get your information on offshore wind progress and development? What is your role in disseminating such information (i.e. do they share further with their members or others)?
 - Any other business (AOB).

Supplemental questions were often included for those entities with specific insight to inform the supply chain and workforce assessments directly. Further questions were also used for Tribal engagement conversations in line with capacity concerns and requests for more details. There are a number of interested Tribal parties in the region and engagement with many of them is still ongoing throughout the remainder of the project (Figure 2-1)

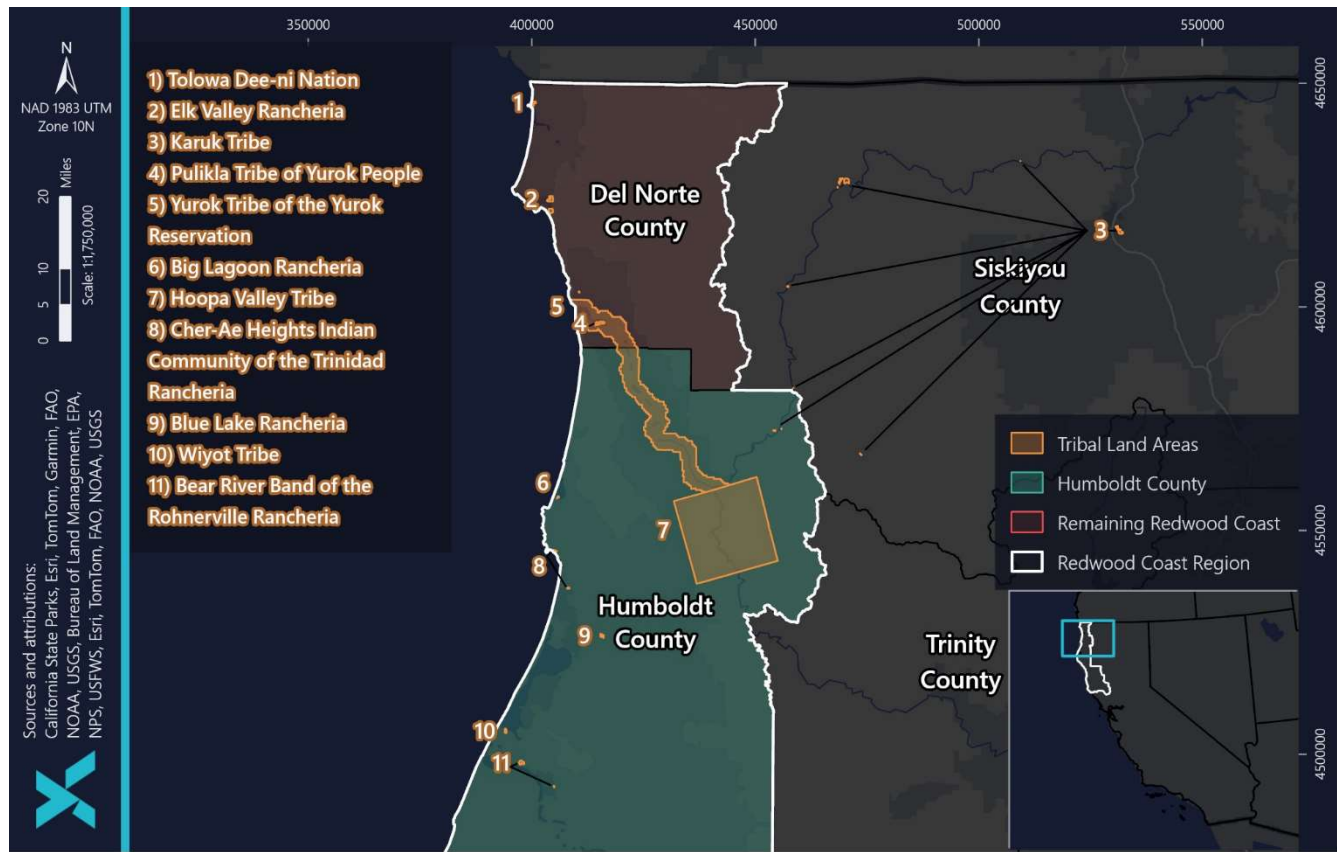


Figure 2-1 - Tribal Lands in the study region. It is noted that there are additional Tribes in Lake and Mendocino Counties. These 11 regional Tribes have been identified as most relevant and involved in offshore wind development conversations for the Humboldt lease areas and formed the basis of Tribal outreach for this study.

2.2.1 Timeline of Engagement

Beyond initial visits to the Humboldt region and attendance at several in-person events, a broad swath of semi-formal engagement occurred through two tranches. Over the course of the project, there were 4 visits to the region, with 34 engagement meetings held, and 25 organizations completing a survey to inform the study. More information can be found in Table 3-1 below. The engagement occurred largely across the months of July, August, and September 2024 (Figure 2-2), however engagement in the region began at the inaugural POWER CA conference in Scotia, California in May of 2023. As can be seen, Engagement Round 1 was conducted first, based off a priority list of engagement contacts, as informed by the team's research and the Client's input. This engagement round then informed the following round, as several additional contacts were identified or confirmed from earlier conversations.



Task	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10
Engagement Round 1										
Engagement Round 2										
Draft Mapping Report										
Issue Draft										
Continuous Engagement										

Figure 2-2 - Timeline for engagement scope The above represents the timeline for targeted engagement to inform this study but it is noted that engagement for offshore wind development in the region is ongoing, as is the County's role in the conversation.

2.3 Entities Selected for Engagement

While a large breadth of organizations and community entities have been identified for inclusion in the mapping scope, the engagement scope is designed to be more targeted. Rather than attempt to speak to every organization identified in the desktop research for mapping, the team identified strategic contacts most likely to be influencing the conversation around and development of the offshore wind industry in the Redwood Coast region based on experience with the industry in other regions and the local insights from working in the region. The goal of this portion of the study is to present a valuable narrative on local perceptions of offshore wind risks and opportunities, as well as identifying key organizations who are leading in the space. Furthermore, the Xodus team has identified key organizations who are actively receiving and disseminating information related to offshore wind; these will be critical contacts for the County to engage with and keep informed as they progress their goals in this space.

For the first round of semi-formal engagement, the team opted to include active organizations with a vested interest in staying abreast of offshore wind development in the region – this initial list of contacts was informed by the client team and supplemented with additional research and consultation in the region. As the team progressed through this round of engagement, they looked to understand from these organizations which groups and individuals they had been speaking with or gaining information from and who else they viewed as leaders in the conversation around this industry. These conversations helped to supplement and groundtruth targets for the second round of consultation.

Members of the project team were onsite in Humboldt on several occasions over the course of this study. Taking advantage of this time in-person, the team has followed up with several additional meetings and sessions to further inform this scope. Throughout email outreach and virtual engagement in the preceding weeks, those engaged were



made aware of the opportunity to meet with the team in-person, either as initial outreach or for follow-up conversations.

2.4 Ecosystem Mapping and Social Network Analysis (SNA)

Ecosystem mapping provides a method to visualize relationships and information pathways between community members. This can be useful for many assessments and allows the user to understand various factors for organizations within the map, including the degree of influence, connectivity, breadth of the network, etc. It can also highlight where there may be gaps in the connectivity between different sectors and entities which may otherwise have been expected to be more closely connected.

The first phase of the mapping process is research intensive, with the team working to compile an extensive list of as many entities as possible who might be active in or relevant to offshore wind development in the study region. This work included significant research online, delving into previous reports, meetings, websites, etc. to build out the baseline list. This list was then supplemented through in-person engagement and research, and was also provided to the Client team for comment to further expand and groundtruth the baseline research. This initial list included over 200 entities, not all of whom will share a high degree of relevance for information flow and involvement in the offshore wind development process.

The second phase of the mapping scope involved the use of Social Network Analysis (SNA) tools to find the most useful ways to visualize and assess the data on organizations and relationships. As will be seen in the following sections, there are many ways to demonstrate relationships and several interesting factors to study within the web that is the Humboldt and Redwood Region ecosystem. As mentioned above, more than 200 organizations were identified in the early mapping research. In order to ensure that the visualizations were useful and legible, the team decided to build the visualization organically, based on the following process. As organizations or individuals were engaged with (through 1-on-1 discussions, via email, or survey responses), they were added to the SNA figure. Any additional organizations they mentioned engaging with in some shape or form were also added, and connectors were included by specific relationship type to further characterize the interactions. This process allowed for multiple opportunities to continue to groundtruth the desktop research undertaken by the team, with each engagement conversation either reaffirming the expected involvement of other organizations or allowing for the identification of previously unknown entities, relationships, and initiatives.

Relationship type categories included the following: collaborate, inform, fund, manage, membership, discuss, aware, involved, convener, Memorandum of Understanding (MOU), Non-disclosure Agreement (NDA), affiliate, lessee, partner, and host. Many of the relationships identified were characterized as either 'discuss' or 'inform' depending on whether the relationship was observed to be two-way information sharing or one directional, respectively. Similarly, 'MOU', 'partner,' and 'collaborate' all refer to more formalized relationships, with 'MOU' being the most solid formalization, 'collaborate' or 'partner' representing teamwork on active initiatives, given wording from the consultees.



It is important to note that any such mapping will be biased to some extent by nature of the conversations which have informed it. While this was mentioned above, the team has tried to control for this as best as possible by ensuring that organizations and individuals from each of the study focal areas are included, as well as by allowing earlier engagement rounds to influence later engagement rounds. This has facilitated a more organic, localized map that has continued to spread and grow with each new conversation. As such, it is expected that the map would continue to grow given further conversations, and does not represent an absolute reflection of the complete community network at-hand. As engagement continues over the coming months, this map can be updated further to reflect the most up-to-date information available.



3 RESULTS & DISCUSSION

While 200 organizations were identified in the first component of the mapping process, 60 organizations directly contributed to the engagement report via engagement sessions or survey responses throughout this project, and 60% of those contacted through outreach responded to requests to participate in this study. Of those respondents, the following table shows the breakdown by focal area (Table 3-1); it should be noted that the counts represent the number of discrete organizations, and engagement and survey results often included input from multiple individuals within that organization (and occasionally with the intent of representing adjacent organizations as well).

Table 3-1 Number of entities engaged by focal area and engagement type. 'Engaged' means met for one-on-one conversation and 'Surveyed' means the organization was a respondent to the survey issued at POWER CA. Of the 25 organizations who were represented in survey responses; 9 were also represented through further engagement meetings.

FOCAL AREA	ENGAGED	SURVEYED
Research and Advocacy Groups	-	1
Educational Institutions	4	2
Workforce (Labor, Trades, Unions)	9	4
Government Agencies/Utilities	6	8
Indigenous Governments and Organizations	2	-
Industry Associations/ Supply Chain	11	5
Offshore Wind Developers	2	1
Environmental Organizations	1	-
Ports and Port Associations	2	1
Community Organizations	3	2
Fisheries & Mariculture Organizations	4	1
Total	44	25

3.1 Overview of SNA Results

The following figure shows a high-level overview of the SNA figure with all engagement conversations incorporated. Given this input, the complete SNA figure includes 132 total organizations, including not only those directly engaged by the Xodus team, but also those organizations mentioned in other engagement conversations as relevant in regional offshore wind development.





One of the simplest and clearest metrics that can be measured through the SNA is the degree of connectivity. Table 3-2 shows the connectivity observed for each of the 20 most connected organizations.

Some organizations had high degrees of connectedness due to their membership structure, such as the California Fishermen's Resiliency Association. Having a large membership alone did not influence the likelihood of inclusion as a key case study.

Table 3-2 - Top 20 organizations by degree of connectivity.

RANK	ORGANIZATION	DEGREE
1	Humboldt Bay Harbor District	44
2	California Fishermen's Resiliency Association	30
3	CORE Hub	24
4	RWE	24
5	Vineyard Offshore	23
6	CalPoly Humboldt	23
7	Blue Lake Rancheria	21
8	Humboldt County	21
9	Environmental Protection Information Center	15
10	Redwood Region RISE	14
11	Pacific Offshore Wind Consortium	13
12	Nor Cal Carpenter's Union	12
13	Schatz Energy Research Center	12
14	Redwood Community Action Agency	12
15	Crescent City Harbor District	11
16	Oceantic	10
17	Redwood Region Economic Development Center	10
18	Greater Eureka Chamber of Commerce	10
19	UMass Offshore Wind Certificate Program	9
20	IBEW	9



3.2 Ecosystem by Focal Area

3.2.1 Fisheries & Mariculture Organizations

Through initial ecosystem mapping efforts, and the engagement sessions that followed, the following organizations were recognized as being present or active in the study area across the topics of fisheries and/or mariculture (Table 3-3). It is clear that the Northern California region has strong ties to its maritime heritage, and in many ways relies on its active maritime economy to support the livelihoods of many of its residents. Key industries highlighted for inclusion in the study were commercial fisheries (especially crab and trolling), recreational fisheries, and commercial aquaculture (focused on both finfish and shellfish).

Table 3-3 - Organizations active in the Fisheries & Mariculture space in the Redwood Region. Highlights indicate organizations which were formally engaged to inform this study, while many of the other entities in this table were also engaged through more casual fora.

ORGANIZATION	COUNTY	DESCRIPTION
Caito Fisheries	Mendocino	Wholesale seafood dealer out of Crescent City, Eureka, and other locations.
California Coast Crab Association	Del Norte	Trade organization made up of commercial crab fishermen in the Dungeness crab industry with a goal of advocative for science-based management to support a sustainable fishery.
California Fishermen's Resiliency Association (CFRA)	Humboldt	A group consisting of commercial fishermen and industry associations to establish communication pathways between fishermen and regulatory agencies and industry developers, with the goal of minimizing and mitigating around offshore development. This is a key convening institution regarding commercial fisheries in Northern California.
Crescent City Commercial Fishermen's Association	Del Norte	Association consisting of commercial fishermen working out of Crescent City, California. Member of the CFRA.
Humboldt Fishermen's Marketing Association	Humboldt	This association assists commercial fishermen in Humboldt in marketing and securing sales of their product. This is a key convening institution regarding commercial fisheries in the Humboldt Region.
Nordic Aquafarms	Humboldt	Nordic Aquafarms is a commercial-scale aquaculture developer looking to build a facility in Humboldt to support a land-based yellowtail kingfish fish farm.



ORGANIZATION	COUNTY	DESCRIPTION
Pacific Seafood	Humboldt	Pacific Seafood is a large seafood processor and distributor based in Eureka, CA.
Salmon Troller's Marketing Association of Noyo	Mendocino	This association represents commercial salmon trollers operating out of Noyo Harbor. Member of the CFRA.
Shelter Cove Fishermen's Preservation, Inc.	Humboldt	This non-profit works to preserve the fishing heritage of Shelter Cove through educational initiatives and infrastructure projects that support access for commercial and recreational fishers. Member of the CFRA.
Trinidad Bay Fishermen's Association	Humboldt	This association represents commercial fishermen operating out of Trinidad Bay. Member of the CFRA.
Humboldt Bay Oyster Tours	Humboldt	This organization provides informational tours into some commercial oyster operations in the Humboldt area.
Ashley's Seafood	Humboldt	Ashley's Seafood is a local seafood processor and distributor that markets local products from the Humboldt fishing fleet.
Humboldt Area Saltwater Anglers (HASA)	Humboldt	HASA is focused on representing and advocating for sportfishing along the Northern California coast, including information sharing around applicable regulations and industry impacts. This is a key convening institution regarding recreational fisheries in the Humboldt region.
Hog Island Oysters	Humboldt	Commercial oyster farm active in Humboldt Bay.
Pacific Coast Shellfish Growers Association	Regional	This organization represents shellfish growers on a number of topics, including policy and regulatory issues, new technologies and industries, environmental issues, and others. This is a key convening institution regarding shellfish mariculture on the entire West Coast, but is looked to as the leading convener for those organizations within the study counties as well.

The project team engaged with several of the above organizations through the community engagement portion of this study (Table 3-1, Figure 3-2). The California Fishermen's Resiliency Association, with funding from the Ocean Protection Council and the Redwood Coast Energy Authority, has a wide membership through the region, with 13 member associations, including the Crescent City Commercial Fishermen's Association, Shelter Cove Fishermen's Preservation, Inc., and the Salmon Troller's Marketing Association of Noyo, which are all present and active in the study area. Their work as a convening institution provides an opportunity to solicit feedback and concerns around potential offshore wind development, and also provides a pathway to more effectively disseminate relevant information and updates to fisheries members. The CFRA leadership team also works closely with organizations outside of the direct study area, such as commercial fisheries organizations in Morro Bay, the Alliance for Communities for Sustainable Fisheries, and the



Responsible Offshore Development Alliance (RODA); these relationships help them to stay informed on developments and best practices in the industry on a broader geographic scale. They issue regular internal reports and progress updates to their memberships and other interested entities, such as government and community representatives. Key concerns for commercial fisheries at the moment include potential restriction or loss of access to fishing grounds, safety and vessel traffic risks stemming from increased construction traffic, and potential environmental impacts to the species and habitats on which they rely.

Similarly, the Humboldt Area Saltwater Anglers undertakes a convener role for the recreational fisheries space, including through the publication of a regular news issue on relevant stories and updates that may impact the group's members. As such, they represent a strong pathway to disseminate information to the recreational fishing community, as needed. Key concerns for their membership pertaining to offshore wind development include concerns around pollution of the Harbor area as port upgrades get underway (as this could impact the availability of baitfish in the area), the potential for invasive species to be present on vessels or in ballast water arriving for offshore wind work, and potential Coast Guard closures of the Harbor area. The HASA team is also well connected to other agencies conducting work and advocacy in this space, including at the state and federal government level.

Aquaculture entities, including both shellfish and commercial finfish farm operators, also have broad regional representation through organizations such as the Pacific Coast Shellfish Growers Association. The Humboldt Region is known for its oysters and there is a significant tourism draw in this regard, both from a culinary and a tourism perspective. With Nordic Aquafarms looking to localize commercial finfish aquaculture, there are multiple important perspectives and voices that should be included in ongoing engagement and outreach efforts.

By including these overarching convening entities in the dissemination of relevant new information, the County and other interested parties could broaden their reach and ensure as wide of uptake as possible, while still working to have those local one-on-one conversations with individuals associations and companies where useful.

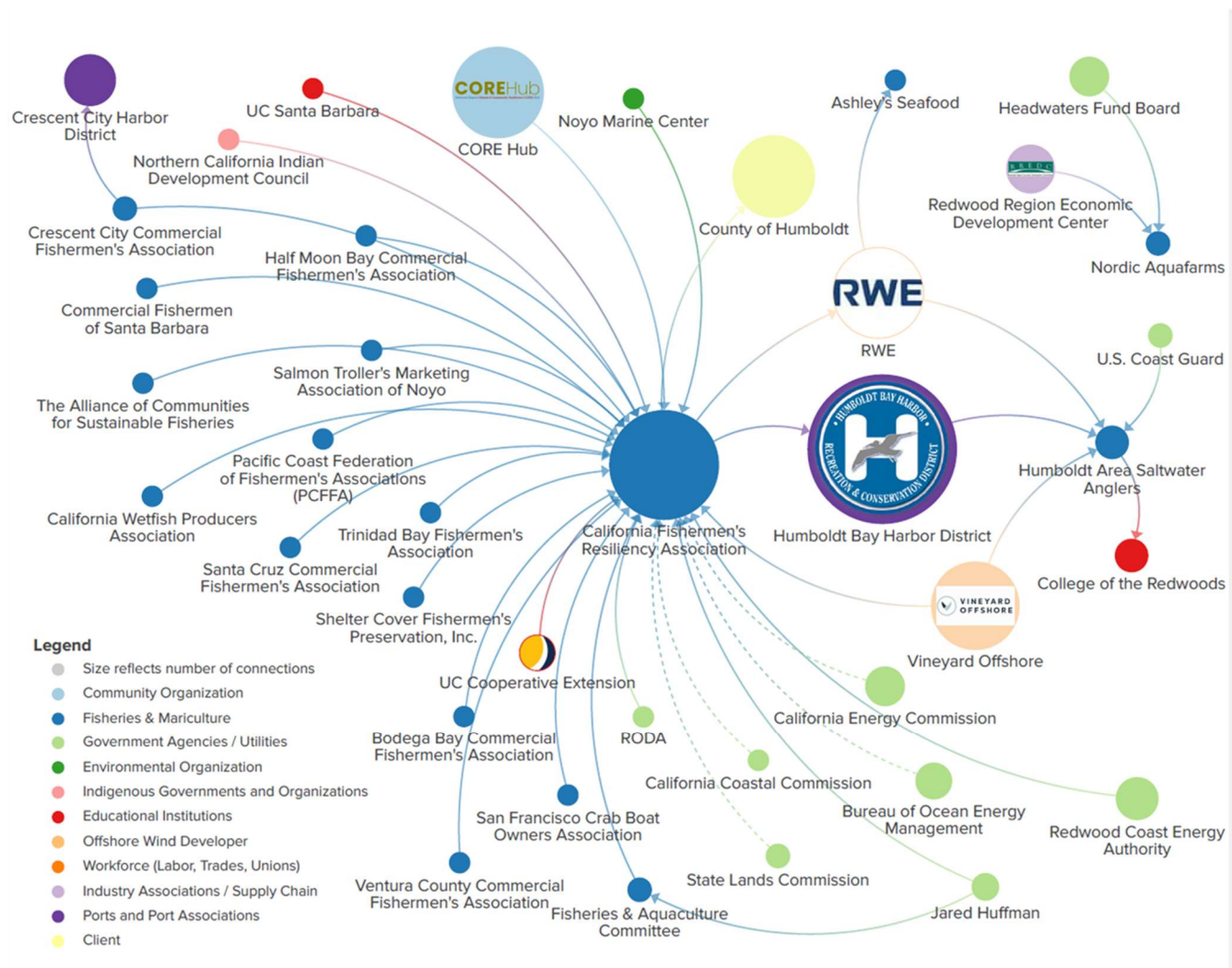


Figure 3-2 - Network of fisheries and mariculture organizations, including immediate connections, as informed by the engagement undertaken for this scope. Note: this figure does not purport to include an exhaustive list of those active organizations in the region within this focal area; this is a live mapping exercise being continually updated.

3.2.2 Educational Institutions

Through initial ecosystem mapping efforts, and the engagement sessions that followed, the following organizations were recognized as being present or active in the study area across the topic of educational institutions (Table 3-4, Figure 3-3). Local educational institutions have a critical role in contributing to community-focused conversations around offshore wind development and what that would mean for the local economy and workforce. These institutions provide an opportunity to pair local expertise with broader assessments of industry trends in order to understand and communicate how such impacts may be felt locally.



Table 3-4 – Educational Institutions active in the Redwood Region. Highlights indicate organizations which were formally engaged to inform this study, while many of the other entities in this table were also engaged through more casual fora.

ORGANIZATION	COUNTY	DESCRIPTION
Cal Poly Humboldt	Humboldt	Cal Poly Humboldt is building in-demand programs, expanding opportunities for hands-on learning, and providing students with the resources they need to succeed. This is a leading educational institution in the region, and is the broader umbrella organization over the Schatz Energy Research Center, which focuses their offshore wind work.
College of the Redwoods	Humboldt	College of the Redwoods is a public community college located in Humboldt County.
Humboldt County Office of Education	Humboldt	Humboldt County Office of Education aims to advocate for the needs of local districts and students, expand learning opportunities for both students and educators, promote student achievement through equitable practices, and support fiscal responsibility across local school districts.
Schatz Energy Research Center (at Cal Poly Humboldt)	Humboldt	Schatz Energy Research Center addresses climate change and improving human and ecosystem health through work that supports clean energy, climate-resilience, equity, and justice. This is a key research institution undertaking many relevant work scopes regarding regional offshore wind development, with prime foci on transmission infrastructure, workforce, and economic impacts.
UC Davis	Out of Region	UC Davis is a leading research institution; they are recognized as a global leader in sustainability and climate change research.
Ukiah Adult School	Mendocino	Ukiah Adult School offers academic programs to people aged 18 and above. The school provides classes in English, math, science, economics, and more.
University of California Cooperative Extension (UCCE)	Humboldt	UCCE is an extension of the University's Agriculture & Natural Resources division. It is dedicated to providing research-based information and educational programs to the local community. This is a key group at the confluence of education and workforce development, and includes ties to the Humboldt County Workforce Development Board.



Educational institutions have a key leading role in the Humboldt Region, and this is particularly apparent in the conversation around offshore wind development. Cal Poly Humboldt has been engaging in economic development efforts associated with offshore wind, largely focused on workforce opportunities and ensuring that workers are ready and able to capitalize on emerging opportunities in this space. Many view offshore wind as a “lifeline” for the Humboldt Region, with the potential to inject significant resources and funds into the local economy. Leaders at Cal Poly Humboldt currently work with the Multi-Craft Core Curriculum (MC3) workforce program, which hosts 18 members as they work towards certification in construction trades; the program also boasts 15 partnerships with local trade programs to connect members to local opportunities. Also highlighted as a resource for education and workforce development was the Humboldt Apprenticeship Readiness Program, focused on the building and construction trades unions. Key to establishing a local workforce pipeline will be understanding what specific roles will be available, and at what moments in time, so that workforce capability, availability, and demand are all properly aligned.

Within the educational ecosystem, further concerns were raised around the potential environmental impacts of offshore wind and the prevalence of misinformation in conversations surrounding these and other concerns. Education, both formal and informal, has been highlighted as critical in addressing both valid concerns and misinformation. The presence of Vineyard Wind in the region, and their track record with projects on the East Coast, was highlighted as a positive element for the community, especially when considering the potential to use data from ongoing East Coast projects as proxies for local West Coast workforce goals and targets. Those engaged in this educational ecosystem also highlighted the UMass Offshore Wind Professional Certificate, which has hosted many participants local to the Humboldt Region, as a key resource for those looking to increase their knowledge of the industry and associated challenges and opportunities.

Under the umbrella of Cal Poly Humboldt, the Schatz Energy Research Center is undertaking applied research and development efforts across renewable energy sectors. The team is well-connected and well-known in the region, having conducted many studies, particularly in the areas of transmission needs and planning, renewables workforce, and energy feasibility studies. They are at the forefront of novel research in the region and also lead the Pacific Offshore Wind Consortium. Specifically, the team leads extensive work in the workforce development, education, and training space, developing an in-depth understanding of what will be required and working to build curriculums that will fulfil these requirements, at both a university and professional level.

Recent studies have included the following:

California North Coast Offshore Wind Studies

- [Description of Study Assumptions](#) (2020)
- [Wind Speed Resource and Power Generation Profile Report](#) (2020)
- [Offshore Wind and Regional Load Compatibility Report](#) (2020)
- [Interconnection Feasibility Study Report](#) (2020)
- [Subsea Transmission Cable Conceptual Assessment](#) (2020)
- [Electricity Market Options for Offshore Wind](#) (2020)



- [Electricity Market Revenue Study](#) (2020)
- [Interconnection Constraints and Pathways](#) (2020)
- [Economic Viability of Offshore Wind in Northern California](#) (2020)
- [Economic Development and Impacts](#) (2020)
- [Coastal Infrastructure Co-Benefits Linked to Offshore Wind Development](#) (2020)
- [Electricity transmission policy analysis](#) (2021)
- [Existing Conditions and Potential Environmental Effects](#) (2020)
- [Feasibility of Potential Subsea Cable Corridor Scenarios](#) (2020)
- [Environmental permitting policy analysis](#) (2021)
- [Overview of geological hazards](#) (2020)
- [Anchoring technology risk assessment](#) (2020)
- [Export cable landfall](#) (2020)
- [Port infrastructure assessment report](#) – and report [appendixes](#) (2020)
- [Social impacts to other communities that experienced offshore wind](#): a literature review (2020)
- [Stakeholder benefits and concerns](#) (2020)
- [Subsea transmission cable stakeholder identification](#) (2020)
- [Military mission compatibility](#) (2020)
- [Summary report of the webinar series](#) (2020)

California Floating Offshore Wind: Evaluating Workforce Analyses and Assessing Professional Labor Needs

- [California Floating Offshore Wind: Evaluating Workforce Analyses and Assessing Professional Labor](#) (2025)

Seabirds in 3D: A Framework to Evaluate Collision Vulnerability with Future Offshore Wind Developments

- [Final report: Seabirds in 3D: A Framework to Evaluate Collision Vulnerability with Future Offshore Wind Developments](#) (2025)
- [Interim Project Report 1: Estimating Collision Vulnerability of the Seabird Community Across a Segment of the California Current System](#) (2024)
- [Interim project report 2: Assessing Tradeoffs between Seabird Density at Collision Risk Height and Wind Facility Performance](#) (2025)

Northern California and Southern Oregon Offshore Wind Transmission Study

- [Volume 1: Executive Summary and Main Report](#) (first pub 2023 – revised Jan 2024)
- [Volume 2: Appendices](#) (first pub 2023 – revised Jan 2024)



Transmission Alternatives for California North Coast Offshore Wind

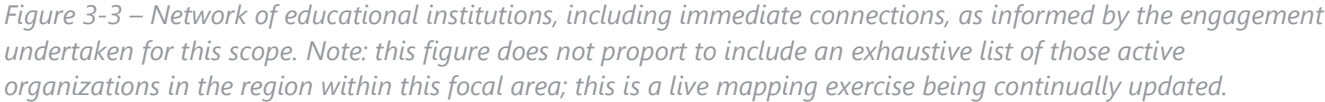
- [Volume 1: Executive Summary](#) (2022)
- [Volume 2: Description and Preliminary Analysis of Transmission Alternatives](#) (2022)
- [Volume 3: Transmission Analysis](#) (2022)
- [Volume 4: Cost-Benefit Analysis Report](#) (2022)

Additional wind reports (2021-2023)

- [Competitive Offshore Wind Leases on the U.S. Outer Continental Shelf: A Review of the Use of Multiple-Factor Auctions and Nonmonetary Credits](#) (2023)
- [California North Coast Offshore Wind Study: Wind Speed Resource and Power Generation Profile Augmentation Report](#) (2022)

The University California Cooperative Extension (UCCE) is also active in the offshore wind conversation and serves as a bridge between university students and local communities in which they can gain experience through full-time work placements. With a broad geographic range, this institution offers unique opportunities to connect interested students with opportunities in industry-associated transmission projects. A core focus of the UCCE is shifting away from the extractive model for use of natural resources, and towards more sustainable and environmentally just manners of using such resources. The UCCE has been undertaking an assessment of interest in offshore wind in the Redwood Region to understand who might need their assistance or partnership in localizing project benefits as they arise.

Throughout engagement with educational institutions and partners, repeated messaging centered around the need for greater information as a way to remove uncertainty from the equation for offshore wind workforce. Understanding the true scale of the opportunity, as well as the anticipated timeline, provides much needed detail to help such institutions prepare the local workforce and answer questions that arise as to the scale of associated benefits and validity of information circulating in the community.



Through initial ecosystem mapping efforts, and the engagement sessions that followed, the following organizations were recognized as being present or active in the study area across the topics of workforce and workforce development (Table 3-5, Figure 3-4). Given the likely intensity of workforce demand and the existing challenges of workforce supply and applicability within the Redwood Region, existing workforce entities and resources will be crucial to ensuring that local communities can extract maximum benefit from any upcoming development in the region. The below entities include unions, labor and trade groups, as well as workforce development and training institutions.



Table 3-5 – Organizations active in the Workforce space in the Redwood Region. Highlights indicate organizations which were formally engaged to inform this study, while many of the other entities in this table were also engaged through more casual fora.

ORGANIZATION	COUNTY	DESCRIPTION
Express Employment Professionals	Humboldt	Express Employment Professionals is a top staffing agency specializing in connecting job seekers with rewarding opportunities and helping businesses find skilled talent.
Humboldt and Del Norte Counties Central Labor Council	Humboldt and Del Norte	Humboldt and Del Norte Counties Central Labor Council are one of nearly 500 state and local labor councils of the AFL-CIO and are the heart of the labor movement. They are democratically elected bodies dedicated to representing the interests of working people at the state and local level.
Humboldt County Workforce Development Board (GoHumCo Economic Development)	Humboldt	Humboldt County Workforce Development exists to help in supporting the livelihoods and prosperity of all persons in all Humboldt County communities by administering programs and initiatives relevant to the County of Humboldt's Strategic Plan and Regional and Local Workforce Development Plans.
Nor Cal Carpenters Union	Out of Region	Nor Cal Carpenters Union is made up of skilled craftspeople servicing all of California. This union is very active in discussions around offshore wind development and related opportunities in the region.
North Coast Opportunities	Regional	North Coast Opportunities is a community leader that aims to establish economic justice and well-being for Northern California.
Redwood Coast Chamber Foundation (RCCF)	Regional	RCCF fosters inclusive economic and community development for California's North Coast. They are an affiliate of the Greater Eureka Chamber of Commerce. This entity is a signatory of the WindLINK MOU.
Redwood Region RISE	Regional	Redwood Region RISE is a coalition of member organizations engaging over a thousand residents across Tribal Lands, Del Norte, Humboldt, Lake, and Mendocino Counties, with the goal to bring sustainable, quality jobs to the region.
Humboldt Builders Exchange	Regional	The Humboldt Builders Exchange is a member association of businesses in the construction industry and related services. Their goal is to provide education, support services, and annual college scholarships.



ORGANIZATION	COUNTY	DESCRIPTION
		This is key convening institution in assessing and driving opportunities for those in the construction trades and related businesses.
IBEW Local #551	Regional	IBEW Local #551 represents electrical workers in Marin, Sonoma, Mendocino, Lake, Humboldt, and Del Norte Counties.
Laborers United International Union North America (LiUNA) - Local Union 792, Local 324	Regional	LiUNA members are a skilled and experienced union workforce trained in the construction and energy industries. Members work in every area of the energy sector, helping to build solar plants, wind farms, and more.
Northern California Terrence J O'Sullivan Laborers Training Center (NorCalTC)	Regional	The NorCalTC provides construction laborers comprehensive quality training emphasizing safety, skills and knowledge to increase their marketability and value.
Operating Engineers Local 3 (OE3)	Humboldt	OE3 is the largest construction trades local in North America. OE3 members consist of heavy-equipment operators, surveyors, mechanics, inspectors, miners, Public Employees, state workers and more.
State Building and Construction Trades Council of California	State	The mission of the State Building and Construction Trades Council of California is to improve the health, jobs, safety and economic conditions of the members of its affiliates, and all working people in the construction industry.
The Humboldt and Del Norte Construction Trades Council	Regional	The Humboldt and Del Norte Construction Trades Council represents several union labor crafts in the region.
Other Unions in the Area:	Regional	AFSCME 1684 Boilermakers Local #549 Bricklayers, Tilelayers and Allied Crafts Local #3 Building and Construction Trades Council of Humboldt & Del Norte Counties Carpenters' Union Local 751 District Council 16 Elevators Constructors Local #8 (IUEC) Heat & Frost Insulators and Asbestos Workers Local #16 IBEW 9th District IBEW Local #1245 International Association of Heat and Frost Insulations and Allied Workers - Local 16 International Longshore and Warehouse Union (ILWU) Marine Engineers' Beneficial Association (MEBA) Operative Plasters and Cement Masons Local #300



ORGANIZATION	COUNTY	DESCRIPTION
		Sheet Metal Workers Local #104 Sprinklerfitters Local #669 Teamsters Local #137 UA Local 290 Plumbers and Steamfitters Underground Utility and Landscaping Local #355

Workforce development is an area of significant importance in the Redwood Region, especially as the community has navigated multiple boom-and-bust industrialization cycles and strives to create sustainable, long-term job opportunities for its residents. Workforce entities, including unions, community groups, and business groups, have drawn on ties with regional educational institutions to collaborate on workforce preparation and community knowledge sharing. The Humboldt County Workforce Development Board, sponsor of this study, provides a great example of this cross-sectoral collaboration, drawing on dozens of leaders from across companies and organizations in Humboldt to serve on its diverse Board of Directors. Similarly, the Board has developed strong partnerships with Cal Poly Humboldt, College of the Redwoods, and others. Such efforts are crucial to ensuring that the community has access to information necessary to increase awareness of the career opportunities available in local offshore wind work, from project management and engineering roles through to union labor and construction jobs, and more.

There are many active unions in the regions, as described in Table 3-5. These unions work closely with the existing training centers in California and are closely monitoring the potential demand for additional offshore wind-specific training as needed. While they acknowledge significant workforce opportunities around both the port development and large onshore transmission upgrades, workforce opportunities for offshore wind project development specifically are less apparent. The key will be in localizing some targeted supply chain companies to the Redwood Region; companies in tiers 2 through 4 are likely to be the best fit for establishing in the region, though there are still a number of logistical and infrastructure challenges to navigate for large-scale manufacturing. Unions in the region are already working closely with many of the Northern California Tribes and have developed partnerships around pre-apprenticeships and apprenticeship programs. All of these efforts lay the groundwork to supply skilled and capable workforce for the offshore wind industry, but clarity on the timeline and scale of industry development is still required to ensure the opportunity aligns with workforce supply and demand. Anticipated training for involvement on offshore wind projects can take as long as 5-6 years, so additional certainty in the timeline is crucial to maintaining interest from young people considering this as a career opportunity.

There are a number of other entities in the region also engaging in workforce development efforts, including staffing agencies, such as Express Employment Professionals and non-profits, like the Humboldt Builders Exchange. General input across the workforce ecosystem highlights offshore wind as a potential significant opportunity for the region's workforce. There is a desire to localize as much benefit as possible and a clear need for a more detailed path forward as to how best to achieve this. At the core of the conversation remains the need for more clarity on project and industry development timelines. Within the Redwood Region workforce ecosystem, there are significant resources for local businesses, including the above entities. As unions and labor groups focus on developing the workforce supply,



there is also the demand piece to be managed from the business side – within the Redwood Region, this focus primarily falls to small business entities. As they look to assess the scale of offshore wind opportunities for their own companies, the ability to rely on local partners to help understand complex government contracting, fill employment gaps, and capitalize on community awareness of these opportunities is key. Ensuring the presence and capacity of adequate wraparound services (such as housing, childcare, and healthcare) will also be crucial, and this is addressed in later sections of the report.

As considerations of the workforce opportunity for Humboldt develop, individuals are once more looking to proxy projects on the East Coast to better understand project demand and timelines. Particularly, Vineyard Wind 1 and its impact on New Bedford is being studied as comparable in some ways as to what might be expected for the Redwood Region. While there are differences between these two cases, including technology type, project timelines and broader domestic appetite, there are also similarities in the local demographics and traditional industries.

Also active in this sector, Redwood Region Resilient Inclusive Sustainable Economy (RISE) is a regional community coalition focusing on developing sustainable jobs for the region through several key initiatives, including the California Jobs First program. Renewable and resilience energy is one of RISE's four key sectors, and the organization is well connected to a number of other community groups in the region. As indicated by the frequency of 'convening' connections, many community organizations look to RISE as a central information hub.

Redwood Region RISE has recently published part 1 of their Regional Plan detailing the strengths, weaknesses, opportunities, and threats for economic development in the Redwood Region. While not focusing exclusively on offshore wind development, the report does cover some of the opportunities and feasibility challenges associated with such efforts. This, along with other studies being produced in the Redwood Region, has been helpful in identifying some of the key concerns tied to proposed offshore wind development in the area. When considered alongside studies that dictate likely timelines for industry and project development, such efforts can highlight the key barriers to localizing investment and assist the region in targeting areas for investment and focus in different stages of project development.

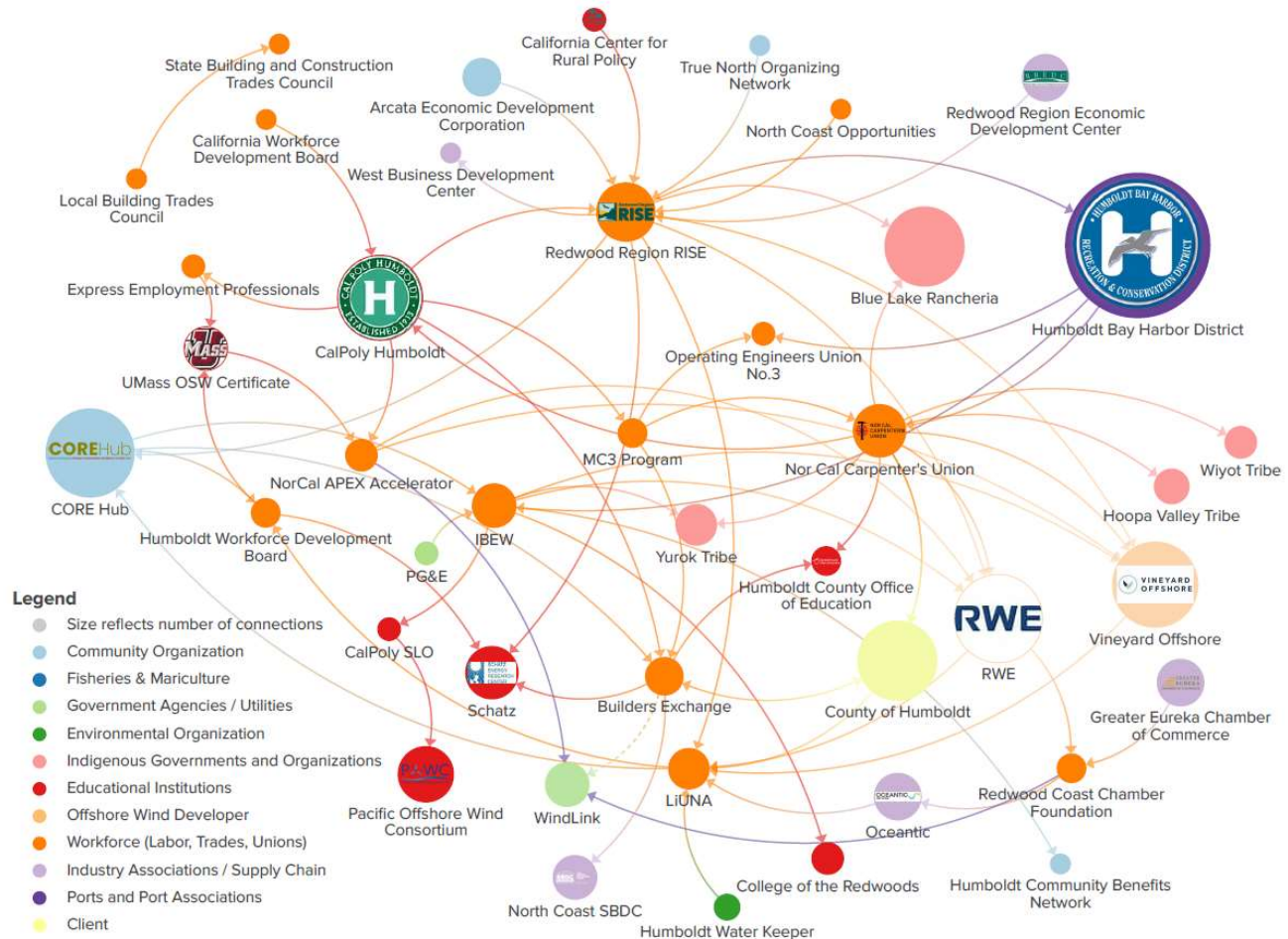


Figure 3-4 – Network of workforce organizations, including immediate connections, as informed by the engagement undertaken for this scope. Note: this figure does not purport to include an exhaustive list of those active organizations in the region within this focal area; this is a live mapping exercise being continually updated.

3.2.4 Government Agencies / Utilities

Through initial ecosystem mapping efforts, and the engagement sessions that followed, the following organizations were recognized as being present or active in the study area among government entities and utilities (Table 3-6, Figure 3-5). With much of the offshore wind industry development efforts still hinging on high-level planning, permitting, and infrastructure development, such entities continue to have an outsized leadership role in determining the timeline of upcoming projects.



Table 3-6 – Government Agencies and Utilities active in the Redwood Region. Highlights indicate organizations which were formally engaged to inform this study, while many of the other entities in this table were also engaged through more casual fora.

ORGANIZATION	COUNTY	DESCRIPTION
County of Humboldt	Humboldt	Humboldt County is located in northern California. There is a Wind Energy Area located 20 miles offshore. The Wind Energy Area will be broken into two lease areas that will be auctioned off by BOEM.
Governor's Office of Business and Economic Development (GO-Biz)	Regional	GO-Biz, serves as the State of California's leader for job growth, economic development, and business assistance efforts in the world's fifth-largest economy.
Headwaters Fund Board	Humboldt	The Headwaters Fund in Humboldt County is designed to support economic development through grants and loans aimed at increasing economic opportunities for residents.
Manila Community Service District	Humboldt	The District's mission is to contribute to the quality of life of the community by providing effective and efficient services, stewarding District-owned public facilities and natural resources, and providing for recreational opportunities through access to parklands, beach and bay properties.
Pacific Gas and Electric Company (PG&E)	Regional	The Pacific Gas and Electric Company is an American investor-owned utility.
Redwood Coast Energy Authority (RCEA)	Humboldt	Redwood Coast Energy Authority is a local, nonprofit agency that procures electricity. They are Humboldt County's Community Choice provider.
Samoa Enhanced Infrastructure Finance District	Humboldt	The EIFD was created to facilitate infrastructure projects that create jobs, enhance the quality of life for visitors and residents, support existing and emerging industries, and help mitigate the impacts of climate change.
Samoa Peninsula Community Services District	Humboldt	The District is focused on providing access to community services on the Samoa Peninsula.

Humboldt County has been active in establishing its role in conversations around offshore wind development through several fora, including through undertaking work on the County's Strategic Plan, Regional Climate Action Plan, and studies such as these being conducted by Xodus Group. The County has funded 12 community members to go through the UMass Offshore Wind Professional Certificate program and also organized 40 community members to visit New Bedford to observe the offshore wind development happening there. As detailed in Section 1.5, there are a number of important roles and responsibilities which fall to different branches of the County government. Studies such as this aim to provide additional context to the County as to how they can most effectively participate in and influence



conversations in the region, supporting strong partnerships and ensuring that relevant information is being kept up to date and is widely accessible.

In terms of ongoing impact and initiatives, the County's involvement in the funding and formation of the WindLink (a strategic partnership offering various resources to local businesses, including networking opportunities, education and training, technical assistance, and more) and accompanying MOU has been mentioned several times throughout the engagement to support this study. It is clear that many organizations are eagerly looking to WindLink to provide some information and guidance on offshore wind development in the region. The existing MOU between the County and the developers has also been highlighted through engagement for this study.

A number of these government and quasi-government entities are focused primarily on economic development opportunities for the region. One such entity is the Headwaters Fund, managed by Humboldt County, that provides rotating loans to support projects and economic development efforts in the region. As offshore wind opportunities become clearer, it is anticipated that funds from this source may be utilized to support local community groups and businesses in their efforts to capitalize on these opportunities. Seed funds from this program were also utilized to support early feasibility studies for the redevelopment of the Port of Humboldt Bay, which were then able to be leveraged into securing millions of dollars from the state and federal government to further support such development efforts.

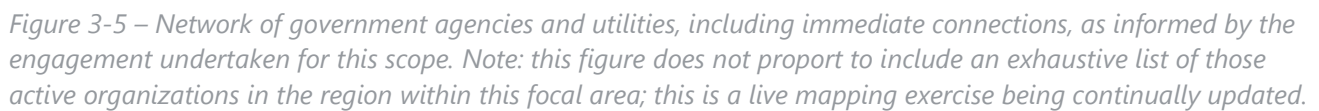
Additionally, some of these entities are focused more on the provision of requisite wraparound services that will support the development of any industry in the region. One such group is the Samoa Peninsula Community Services Department. Primarily staffed by volunteers, the entity focuses on the provision of safety, recreation, and sanitation services to communities on the Samoa Peninsula. Recreation is a large focus in terms of land use on the Peninsula, and as such, conversations linking to offshore wind development primarily focus on potential impacts of offshore wind development in the region (such as maintaining public access and safety on Peninsula resources) and associate mitigation efforts. All of these efforts will be critical to ensuring that the offshore wind industry can develop responsibly, maintaining both a physical and social license to operate.

While this study presents local government entities and utilities as most relevant to the offshore wind ecosystem in the Redwood Region, there are also several relevant state and federal entities engaged in offshore wind development (Table 3-7). In many cases, the local entities within the Redwood Region hold close working relationships with these state and federal entities, so they are included here for informational purposes and to provide context as to broader industry development efforts.



Table 3-7 – State and federal agencies relevant to the development of offshore wind infrastructure in the region.

ORGANIZATION	COUNTY	DESCRIPTION
Bureau of Ocean Energy Management (BOEM)	Federal	BOEM is responsible for all OCS leasing policy and program development for offshore wind and oil and gas.
California Coastal Commission (CCC)	State	The Commission is committed to protecting and enhancing California's coast and ocean for present and future generations. It does so through careful planning and regulation of environmentally-sustainable development, rigorous use of science, strong public participation, education, and effective intergovernmental coordination.
California Department of Fish and Wildlife (CDFW)	State	CDFW is responsible for managing the state's diverse fish, wildlife, and plant resources. Its mission is to ensure the ecological values of these resources and to promote their use and enjoyment by the public.
California Energy Commission (CEC)	State	The CEC is leading the state to a 100 percent clean energy future for all. As the state's primary energy policy and planning agency, the CEC plays a critical role in creating the energy system of the future.
State Lands Commission (SLC)	State	SLC oversees sovereign land granted in trust to about 70 local jurisdictions, predominantly prime waterfront lands, coastal waters, and the lands underlying California's five major ports. Through its actions, the SLC secures and safeguards the public's access rights to navigable waterways and the coastline and preserves irreplaceable natural habitats for wildlife, vegetation, and biological communities.
Statewide Supplier Diversity Program	State	Through the Statewide Supplier Diversity Program the state aims to connect a portion of utility expenditures with certified minority, disabled veteran-owned, and other qualified businesses.



Through initial ecosystem mapping efforts, and the engagement sessions that followed, the following Tribal governments and organizations were recognized as being present or active in the study area (Table 3-8, Figure 3-6). As state and/or federally recognized Tribes and communities in the Redwood Region, these entities have a role in assessing, disseminating, and responding to potential opportunities and challenges arising from proposed offshore wind developments. As has been mentioned previously, there are a number of strong partnerships and connections between several of the Tribes and additional workforce and educational institutions within the Redwood Region, which is further explored in the section below.



Table 3-8 – Indigenous Governments and Organizations active in the Redwood Region. Highlights indicate organizations which were formally engaged to inform this study, while many of the other entities in this table were also engaged through more casual fora.

ORGANIZATION	COUNTY	DESCRIPTION
Bear River Band of the Rohnerville Rancheria, California	Humboldt	The Tribe is located in Northern California on the Pacific Coast in Loleta, California. Bear River has 619 Enrolled Tribal Citizens, based on residency on the Rohnerville Rancheria and being a lineal descendant of those residents.
Big Lagoon Rancheria, California	Humboldt	The Big Lagoon Rancheria is a federally recognized tribe of Yurok and Tolowa Indians. They are located in Humboldt County, California, and their tribal headquarters is in Arcata, California. The population was 93 at the 2010 census.
Blue Lake Rancheria, California	Humboldt	The Blue Lake Rancheria is a federally recognized Native American Tribe in northwestern California, near the cities of Eureka and Arcata. Blue Lake Rancheria is one of several Tribes in the region highly active in ongoing conversations around offshore wind development and related initiatives. They are also a contributor to the North Coast Offshore Wind website and FAQ page.
Cher-Ae Heights Indian Community of the Trinidad Rancheria, California	Humboldt	The mission of the Cher-Ae Heights Indian Community of the Trinidad Rancheria is to preserve and promote cultural and traditional beliefs; create positive partnerships; protect the environment, and more.
Elk Valley Rancheria, California	Del Norte	The Elk Valley Rancheria is geographically located in Tolowa ancestral territory, close to Yurok lands. Tribal membership includes people of Tolowa, Wiyot, Yurok, and Hupa descent. As a Tribe, they are deeply committed to preserving their culture, and restoring their lands.
Hoopa Valley Tribe, California	Humboldt	The Hoopa Valley Tribe is dedicated to protecting and promoting the interests of the Hoopa Valley people, and cooperating and collaborating with Federal, State, and local Governments.
Karuk Tribe of California	Regional	The aim of the Karuk Tribe is to promote the general welfare of all Karuk people, to establish equality and justice for the tribe, to restore and preserve Tribal traditions, customs, language and ancestral rights, and to secure to ourselves and our descendants the power to exercise the inherent rights of self-governance.



ORGANIZATION	COUNTY	DESCRIPTION
Northern California Indian Development Council (NCIDC)	Regional	The NCIDC is a non-profit organization that develops and administers social and economic development programs with a focus on Tribal communities. This is a key institution progressing workforce development opportunities and support services related to economic development.
Northern California Tribal Chairmen's Association (NCTCA)	Regional	The NCTCA is an association of Tribal Leaders from Tribes in Northern California focused on collaboration and advocacy for issues relating to federally-recognized Tribes in the region.
Pulikla Tribe of Yurok People (previously Resighini Rancheria)	Del Norte	The Tribal Citizens of the Pulikla Tribe of Yurok People remain on the lands and waters where their ancestors have survived.
Tolowa Dee-Ni' Nation	Del Norte	Located in the most northwestern corner of present-day California, the Tolowa Dee-ni' Nation consists of over 950 acres of tribal-owned land and has over 1900 Tribal Citizens.
Wiyot Tribe	Humboldt	The Wiyot Tribe's goal is to exercise their tribal rights and promote their welfare, develop their lands and resources, safeguard their aboriginal rights as Wiyot people and more.
Yurok Tribe of the Yurok Reservation, California	Humboldt and Del Norte	The Yurok Tribe of the Yurok Reservation is located on the Northern California Coast. They value self-governance, cultural and spiritual preservation, waters, and other natural endowments, balanced social and economic development, individual rights, and more for all persons living within the jurisdiction of the Yurok Tribe.



Several of the Tribes in the Redwood Region have been increasingly involved in conversations around offshore wind development, including the Blue Lake Rancheria, which since 2002 has been working towards achieving zero-carbon sustainability and resilience within its community. Representatives from the Tribe have been increasingly engaged in the offshore wind development ecosystem, attending conferences such as American Clean Power, contributing to North Coast Offshore Wind (an informative website for offshore wind fact-checking), and spearheading numerous relevant initiatives within the local community. Among such initiatives are environmental baseline studies, advisory relationships with POWC, and partnerships with local entities like the Schatz Energy Research Center. The Blue Lake Rancheria are also heavily engaged at the state and federal levels, speaking with representatives from relevant agencies. Additionally, Jana Ganion, who previously held the role of Director of Government Affairs and Sustainability at the Blue Lake Rancheria, now serves as Senior Advisor for Offshore Wind with the California government, further solidifying their close ties to state-level policies and efforts.

They also have a close working partnership with the Hoopa Valley, Wiyot, and Karuk Tribes as they develop a tribally co-designed pre-apprenticeship program with electricians in the region. Having been in discussions with the developers, the Harbor District, educational institutions, and workforce programs, the Blue Lake Rancheria team is well-informed and thinking strategically about how best to support their Tribal members in finding opportunities to get involved. As the regional offshore wind strategy develops, more regular engagement from the County of Humboldt, and in particular a dedicated Offshore Wind Liaison, could be beneficial in supporting and maintaining this awareness and development.

As engagement efforts and offshore wind-related initiatives continue to be undertaken by the Blue Lake Rancheria and other Tribal governments in the Redwood Region, continued engagement with appropriate government representatives (county, state, and federal) as well as direction and resourcing from developers where possible will be further support targeted and strategic initiatives. For the Tribes, this focus falls largely on strategically preparing to engage on workforce opportunities for Tribal members and also making significant contributions to the body of work and decision making around the local environmental baseline data and potential impacts of commercial-scale offshore wind development in the region. The importance and value of integrating Traditional Ecological Knowledge should not be understated and continued partnerships between Tribes and environmental and research institutions in the region represent a strong foundation for advancement of this work.

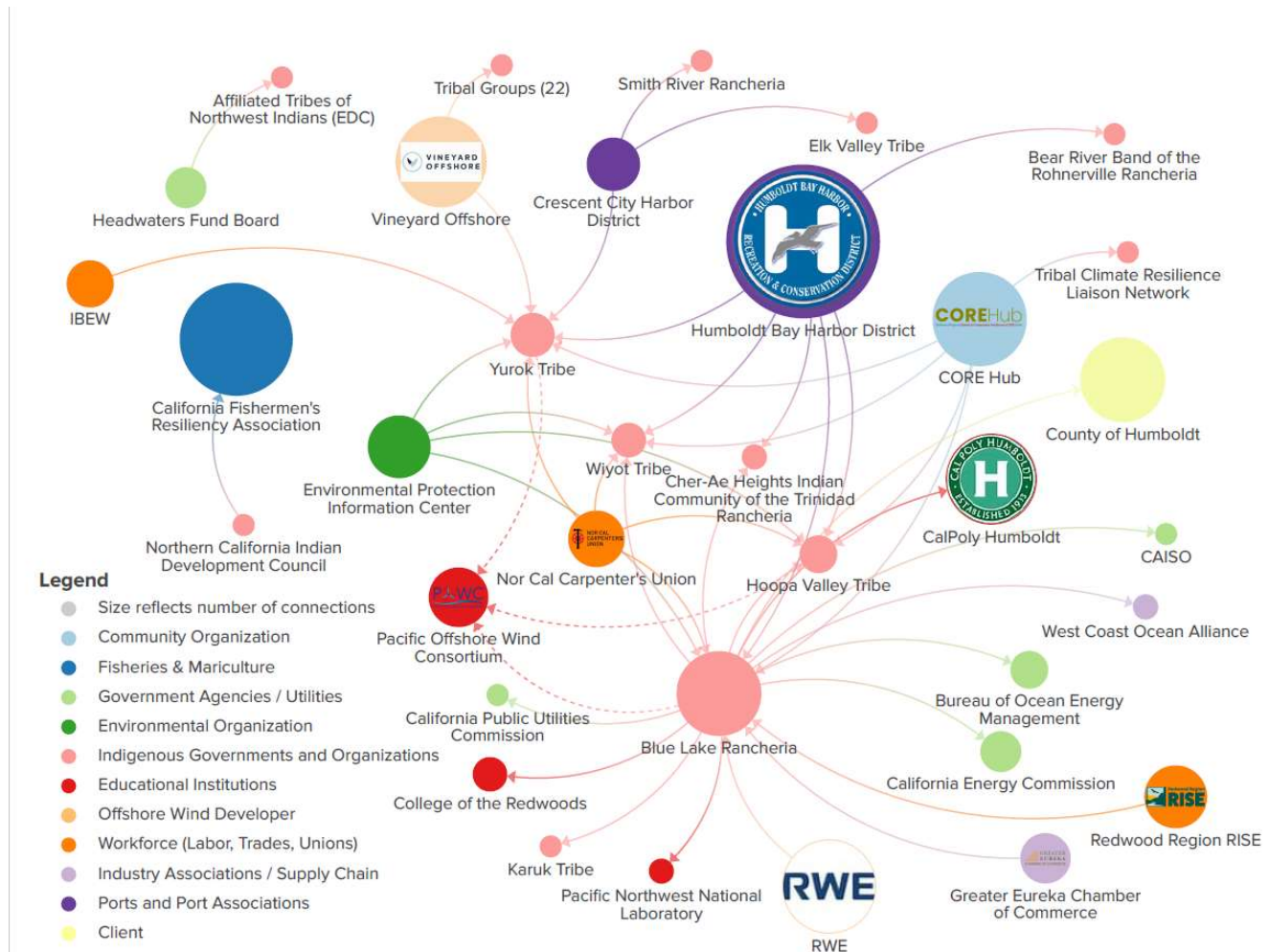


Figure 3-6 – Network of indigenous governments and organizations, including immediate connections, as informed by the engagement undertaken for this scope. Note: this figure does not purport to include an exhaustive list of those active organizations in the region within this focal area; this is a live mapping exercise being continually updated.

3.2.6 Industry Associations and Supply Chain

Through initial ecosystem mapping efforts, and the engagement sessions that followed, the following organizations were recognized as being present or active in the industry associations and supply chain focal area (Table 3-9, Figure 3-7). This area primarily includes local chambers of commerce, local and federal offshore wind industry groups, and other non-governmental agencies engaged in economic development efforts.



Table 3-9 – Organizations active in the Industry Association and Supply Chain space in the Redwood Region. Highlights indicate organizations which were formally engaged to inform this study, while many of the other entities in this table were also engaged through more casual fora.

ORGANIZATION	COUNTY	DESCRIPTION
Arcata Chamber of Commerce	Humboldt	The Arcata Chamber of Commerce assists in economic development for businesses and members in Arcata, CA.
ACP – California	Regional	ACP announced the establishment of the California Council of Offshore Wind Leaseholders (CCOWL), a council within ACP-California dedicated to fostering the emerging California floating offshore wind market and advancing the state's first projects.
Central California Joint Cable/ Fisheries Liaison Committee	Regional	The Committee facilitates inter-industry communication, coordination, and cooperation between the Commercial Fishing Industry of Central California and Undersea Fiberoptic Telecommunications Companies operating in Central California.
Del Norte Energy Alliance	Del Norte	Del Norte Energy Alliance's goal is to determine interest in offshore wind energy development off the Del Norte County Coast.
Greater Eureka Chamber of Commerce	Humboldt	The Greater Eureka Chamber advances the economic vitality of our community by serving as a catalyst for business growth, a convener of leaders, a champion for development and an advocate for a thriving place to work and live. This Chamber is a very active participant in offshore wind conversations in the region and is a signatory to the WindLINK MOU.
Green Diamond	Humboldt	Green Diamond is a forest stewardship company that owns and manages working forests in nine states throughout the western and southern U.S. They are a major landowner on the Samoa Peninsula and hold land parcels as part of the port redevelopment that is underway.
Joint Oil / Fisheries Liaison Office (JOFLLO)	Regional	JOFLLO works as a mediator, helping the oil and fishing industries address many critical conflicts. They have also inspired new collaborative efforts, for example, they were approached by international seafloor fiber optics cable companies when they were looking to operate in California.
Lake County Chamber of Commerce	Lake	The Lake County Chamber of Commerce is a private, not-for-profit organization of over 400 businesses that have come together to advance the financial, industrial and civic interests of Lake County.



ORGANIZATION	COUNTY	DESCRIPTION
Norcal APEX Accelerator	Regional	Norcal APEX Accelerator provides free assistance to businesses who want to sell their products or services to city, county, state, or federal agencies. This is a key support institution for small businesses in accessing greater supply chain opportunities and is a signatory to the WindLINK MOU.
North Coast Small Business Development Center (SBDC)	Regional	North Coast SBDC is proud to be a part of the greater NorCal SBDC network and work together to support local entrepreneurs and small businesses with the tools and insights to start, grow, and pivot their businesses. This organization is a signatory to the WindLINK MOU.
Oceantic	National	The Oceantic network is a collaborative network that advances the offshore renewable energy market and builds a robust supply chain of local companies.
Redwood Region Economic Development Commission (RREDC)	Regional	RREDC is a collaboration of Humboldt County communities dedicated to expanding economic opportunity in Humboldt County. They create opportunities and support the growth of local businesses, leading projects of regional significance, making loans, and offering business consulting through their partner, the North Coast Small Business Development Center. This organization is a signatory to the WindLINK MOU.
Security National Properties	Humboldt	Security National Properties is a commercial real estate firm, with operations in downtown Eureka. They also hold land on the Samoa Peninsula.

Interest in supply chain opportunities in the offshore wind industry has been growing in the Redwood Region as there is significant potential for highly lucrative contracts for those companies which can partner with Tier 1 and 2 contractors and for those economic development entities aspiring to localize major manufacturing interest in the region. As mentioned previously, especially in relation to leadership on the part of the County, the WindLINK initiative has been launched in the Redwood Region to support the local business and economic development community in understanding and harnessing the supply chain opportunities that are likely to development to support these offshore wind projects. Signatories to the WindLINK MOU include the County of Humboldt Economic Development Division, Redwood Region Economic Development Commission (RREDC), Redwood Coast Chamber Foundation, Greater Eureka Chamber of Commerce, Northern California Small Business Development Center (SBDC), and NorCal APEX Accelerator. Working with offshore wind developers, these agencies are assessing how best to bring resources to the broader business community in the Redwood Region to support supply chain development efforts.



Among the Chambers of Commerce in the region, both the Arcata and Greater Eureka Chambers of Commerce have expressed significant interest in strengthening their supports for local businesses interested in expanding into the offshore wind sector. Stable, good-paying jobs and modernizing local infrastructure remain key drivers for local development, with recognition that this major commercial industry could lead to a notable boom for the broader local economy. As the community awaits greater visibility on permitting and transmission development, which will allow for greater solidity in project-specific timelines, there is additional work to be done in understanding the potential workstreams and appetite for offshore wind supply chain work in the Redwood Region. As a resource for business growth and advancement, Greater Eureka Chamber of Commerce offers five programs for companies and individuals looking to further their professional development, including programs for women in leadership and their Leadership Redwood Coast program. The Chamber is also engaged in supporting a number of workforce development programs, through partnership with entities including Humboldt County and the Blue Lake Rancheria.

Also members of WindLink, the RREDC and North Coast SBDC are both working to support local businesses, whether that be through offering small business loans, sharing information on offshore wind opportunities, or identifying lessons learned from communities engaging in offshore wind development on the East Coast to set the Redwood Region up for success. Additionally, the North Coast SBDC also offers business development opportunities relating to new industries and adjacent community needs, such as their Grow and Scale Efficiently course and their Childcare for Business course. As project timelines and scale begin to solidify, these support resources can be more effectively deployed for specific offshore-wind related opportunities in the Redwood Region.

Within the Redwood Region, much of the information on project timelines and detail comes directly from developers, though broader industry groups, such as the Oceanic Network and American Clean Power, are also able to provide information on broader federal and state policy that influences project development timelines. Additionally, such groups can be a source of information on items of policy that directly influence supply chain financing, such as the Inflation Reduction Act and resulting tax credits available to support offshore wind supply chain build out.

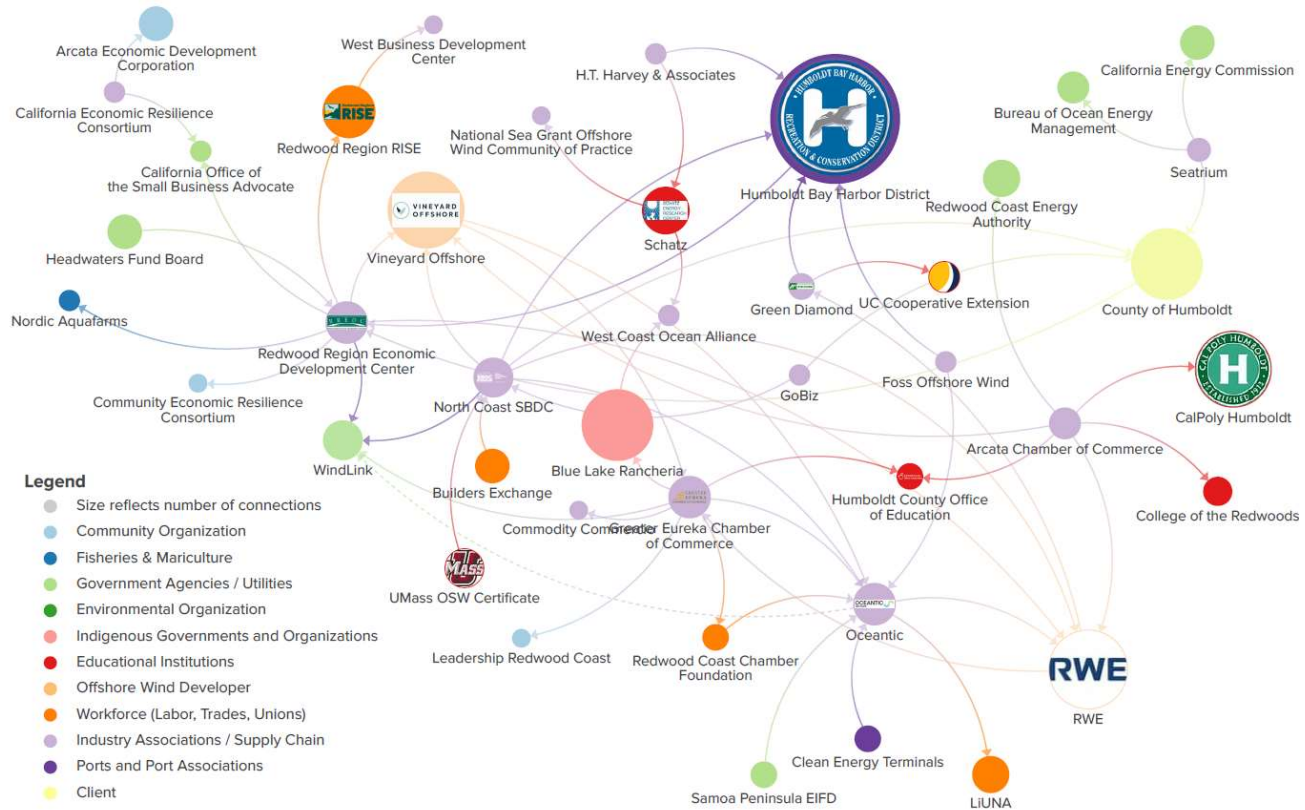


Figure 3-7 – Network of industry associations and supply chain organizations, including immediate connections, as informed by the engagement undertaken for this scope. Note: this figure does not purport to include an exhaustive list of those active organizations in the region within this focal area; this is a live mapping exercise being continually updated.

3.2.7 Offshore Wind Developers

There are five offshore wind developers that have secured offshore wind lease areas in California – RWE, Equinor, Invenergy, Ocean Winds, and Vineyard Offshore (Copenhagen Infrastructure Partners). RWE and Vineyard Offshore have each secured one of the lease areas in the Humboldt Wind Energy Area (Table 3-10, Figure 3-8). Although it is still early in the project development phase, both developers have been very active in the Redwood Region, as exhibited through the number of partnerships discussed in this study. The developers continue to be the primary source of information for many of the entities in the community.



Table 3-10 – Offshore Wind Developers that are active in the Redwood Region. Highlights indicate organizations which were formally engaged to inform this study, while many of the other entities in this table were also engaged through more casual fora.

ORGANIZATION	COUNTY	DESCRIPTION
RWE	Humboldt	RWE is one of the world’s leading companies in offshore wind, active across the entire value chain, from project conception and development to construction, operation, and maintenance. For over 20 years, we have built and now operate 19 offshore wind farms globally. RWE is the holder of a commercial offshore wind lease area in Humboldt.
Vineyard Offshore	Humboldt	Vineyard Offshore is building a robust energy future by advancing offshore wind projects that strengthen America’s energy independence, create thousands of good-paying jobs, and support local economies. They have acquired four lease areas in the US, three on the east coast and one on the west coast. Vineyard Offshore is the holder of a commercial offshore wind lease area in Humboldt.

While neither of the developers are signatories to the WindLINK MOU, they have still very much been involved in early conversations and certainly stand to benefit from the development of a strong regional supply chain to support their projects. As exhibited in the ecosystem mapping, both developers have formed a range of core partnerships across many focal areas, including industry and supply chain, workforce development, community group, and Tribal governments. Notably, both developers and the HCWDB supported the development of the Pacific Offshore Wind Consortium is a collaboration between several leading educational institutions in the region, including CalPoly SLO, the Pacific Marine Energy Center at Oregon State University, and Schatz Energy Research Center.

Both developers have also been engaging with the Tribal governments and entities present in the region, not all of whom are captured in this figure. There are few organizations on the map who are not common across both developers’ networks, and those that are (including some of the tribes, CORE Hub, Green Diamond, Redwood Coast Chamber Foundation, etc.) may very well only be listed as such due to inadvertent exemption during our engagement discussions. It is anticipated that many more discussions are being undertaken by the developer teams on the ground in the region.

Given their presence in the region and capacity to undertake continued engagement, developers have a strong position for information sharing. Naturally, many of the key updates which will be relevant in the region will come from



decisions their own companies are making, resulting in them being key information holders. Additionally, a common theme throughout engagement for this scope has been the potential of East Coast projects to serve as a proxy for what might be expected in the Redwood Region, with links anticipated to range from example contracts, economic benefits, workforce numbers, and vessel traffic numbers. This link is especially strong when considering that one of the only commercial-scale offshore wind projects delivering power to the grid is Vineyard Offshore's Vineyard Wind 1 project. With over 40 individuals from the Redwood Region having travelled to New Bedford to witness and learn from this development for themselves, it is natural for the community to want to understand in greater detail in which areas New Bedford's experience may serve as an accurate proxy for the Redwood Region. It is important to note that the respective offshore wind projects do have significant differences, including the technology time, geography of the region, and local demographics, all of which must be considered when attempting to make accurate predictions for workforce numbers and anticipated economic benefits in the Redwood Region.

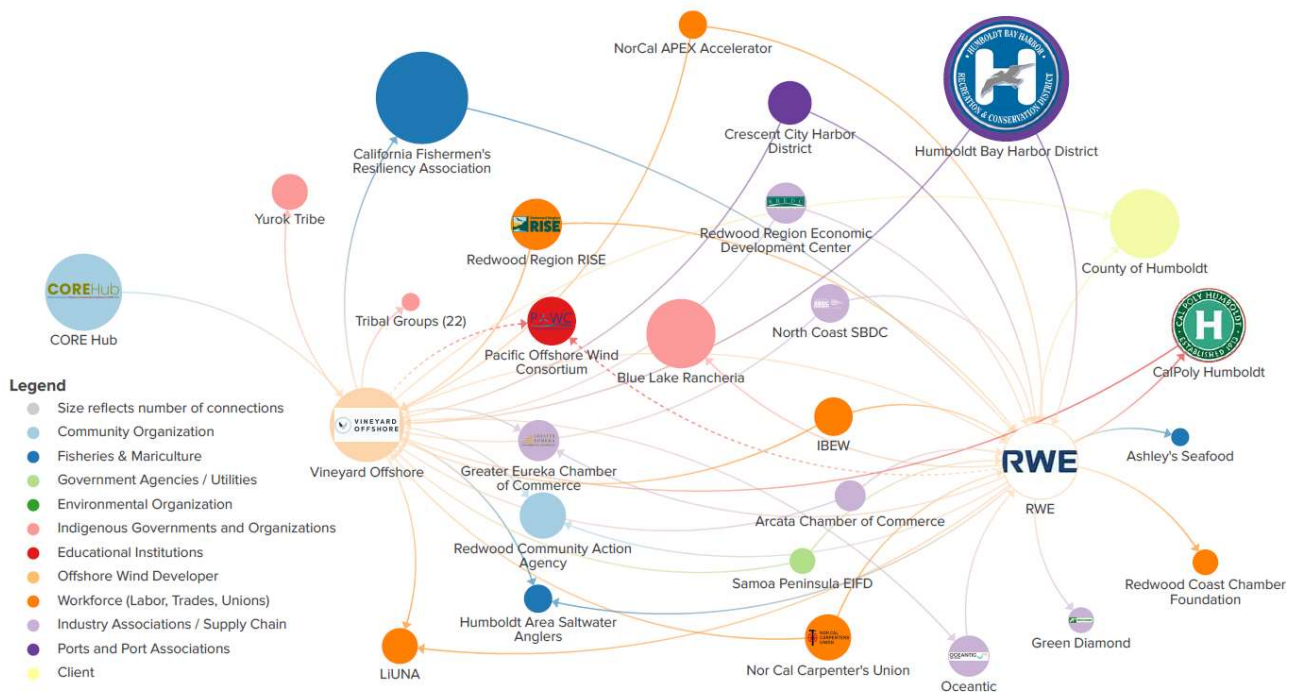


Figure 3-8 – Network of offshore wind developers, including immediate connections, as informed by the engagement undertaken for this scope. Note: this figure does not purport to include an exhaustive list of those active organizations in the region within this focal area; this is a live mapping exercise being continually updated.

3.2.8 Environmental Organizations

Through initial ecosystem mapping efforts, and the engagement sessions that followed, the following organizations were recognized as being present or active in the environmental organization focal area (Table 3-11, Figure 3-9). While



many of these organizations are highly engaged in broader community conversations as well, their environmental focus provides a unique lens through which to assess the development of offshore wind projects in the Humboldt region.

Table 3-11 – Organizations active in the Environmental space in the Redwood Region. Highlights indicate organizations which were formally engaged to inform this study, while many of the other entities in this table were also engaged through more casual fora.

ORGANIZATION	COUNTY	DESCRIPTION
350 Humboldt	Humboldt	350 Humboldt has a goal of keeping fossil fuels in the ground and reducing the amount of greenhouse gases in the atmosphere, while maintaining a just, low-carbon economy.
Citizens Protecting Humboldt Bay (CPHB)	Humboldt	CPHB is a group of local residents who believe sustainable development can be accomplished while providing protection of our natural heritage. CPHB has challenged a fish farm facility in California state court while working with local organizations to build a coalition to ensure all projects are held to the highest standards.
Environmental Protection Information Center (EPIC)	Humboldt	EPIC is a grassroots non-profit environmental organization that advocates for the science-based protection and restoration of Northwest California's forests, rivers, and wildlife with an integrated approach combining public education, citizen advocacy, and strategic litigation. EPIC is one of the entities behind North Coast Offshore Wind, which maintains an informational website and FAQ with information on offshore wind development in the Redwood Region.
Friends of the Dunes	Humboldt	Friends of the Dunes is a non-profit organization dedicated to conserving the natural diversity of coastal environments in northern California through community supported education and stewardship programs.
Humboldt Waterkeeper	Humboldt	Humboldt Waterkeeper aims to safeguard our coastal resources for the health, enjoyment, and economic strength of the Humboldt Bay community through education, scientific research, and enforcement of laws to fight pollution. Humboldt Waterkeeper is a contributor to North Coast Offshore Wind.
Marine Applied Research and Exploration (MARE)	Humboldt	MARE's mission is to explore and document deep-water ecosystems to assist in their conservation and management. MARE works collaboratively with state and federal agencies,



ORGANIZATION	COUNTY	DESCRIPTION
		academic institutions, and other non-governmental organizations. To date, MARE has documented over 2,700 km of seafloor off California's coast.
Northcoast Environmental Center	Humboldt	Northcoast Environmental Center aims to conserve and protect terrestrial, aquatic, and marine ecosystems in northern California and southern Oregon.
NOYO Center	Mendocino	The NOYO center is advancing ocean conservation through education, exploration, and experience.
Redwood Region Audubon	Humboldt	Redwood Region Audubon is a volunteer, nonprofit organization with over 850 members that relies on the energy and commitment of its members to be a strong and effective local conservation organization.
Surfrider Foundation	Regional	The Surfrider Foundation is leading efforts at the federal, state, and local levels to protect our shorelines on every coast. They aim to protect oceans and the coastlines.

There is a strong legacy of environmental action and activism in Northern California, and community members tend to look to local environmental groups for clarity around potential environmental impacts of new developments. With all of the misinformation surrounding offshore wind, and especially its potential environmental impacts, it is especially crucial to have well-established, well-respected, and well-informed environmental organizations providing accurate information to the public.

The Environmental Protection Information Center (EPIC) is assuming a role in this space, collaborating with Humboldt Waterkeeper, CORE Hub, and Blue Lake Rancheria to form North Coast Offshore Wind – a webpage developed to inform local residents and interested parties about the details of potential offshore wind project development in Northern California. Specifically, they have developed a list of frequently asked questions (FAQs) covering a range of topics, including the following:

- Potential environmental impacts, such as those linked to electromagnetic frequencies (EMFs), impacts to marine mammals and fish populations, and impacts to avian species;
- Potential environmental benefits, such as reduced greenhouse gas emissions and reduced climate harm;
- Potential community impacts, including those linked to the Missing and Murdered Indigenous People (MMIP) Crisis, potential increased migratory workforce, and increased vessel traffic; and
- Detail on project development and permitting timelines, to the extent they are known.

North Coast Offshore Wind is very open about the limitations on what we know regarding plans for offshore wind development in Northern California, and the FAQ site is framed as a live page intended to be updated as more information becomes available. The extent of misinformation in circulation regarding offshore wind development can



make it very difficult to assess what is and isn't true and realistic; having a site such as this, backed by trusted environmental and community organizations, aids significantly in building public awareness of the projects and realistic expectations for the type and extent of potential environmental impacts.

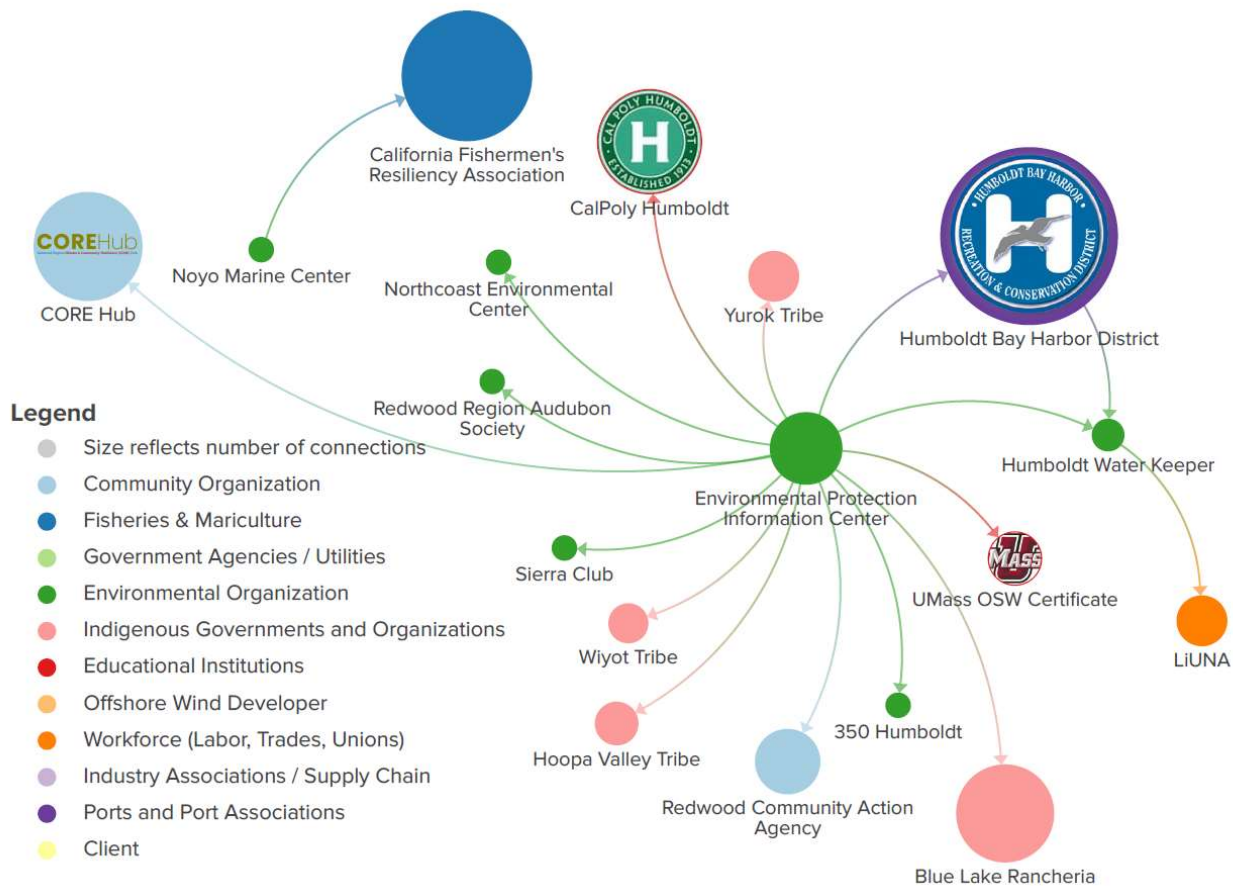


Figure 3-9 – Network of environmental organizations, including immediate connections, as informed by the engagement undertaken for this scope. Note: this figure does not purport to include an exhaustive list of those active organizations in the region within this focal area; this is a live mapping exercise being continually updated.

3.2.9 Port Operators and Port Associations

There are several key entities among port assets and port development in Northern California (Table 3-12, Figure 3-10). These entities hold a great deal of responsibility in the conversation regarding offshore wind development as establishing the proper scale of port infrastructure is crucial before additional detailed project planning and timing can proceed. While this study intends to assess impacts relating to the build out of the offshore wind industry in the region (excepting the redevelopment of the Port of Humboldt Bay and that of significant transmission infrastructure as outside



the bounds of this study), it is still crucial to understand the roles played by port entities in the region, especially as they pertain to community engagement and information sharing.

Table 3-12 – Organizations active in the Ports space in the Redwood Region. Highlights indicate organizations which were formally engaged to inform this study, while many of the other entities in this table were also engaged through more casual fora.

ORGANIZATION	COUNTY	DESCRIPTION
California Association of Port Authorities (CAPA)	State	CAPA is comprised of 11 major deepwater port authorities across California, including the Port of Humboldt Bay.
Clean Energy Terminals	State	Clean Energy Terminals invests in and develops the port infrastructure that is needed to deploy offshore wind projects. They are reshaping how offshore wind ports are financed and developed, bringing private capital and expertise into early-stage port projects and working in partnership with public port authorities, harbor districts, and local municipalities.
Crescent City Harbor District	Del Norte	Crescent City Harbor a newly rebuilt, state-of-the-art marina managed by the Harbor District. The Crescent City Harbor District may play a role in future offshore wind projects through the provision of overflow and/or vessel support services, especially during the O&M phase.
Humboldt Bay Development Association (HBDA)	Humboldt	HBDA hosts quarterly meetings, allowing the public to speak to the Board of Directors.
Humboldt Bay Harbor, Recreation and Conservation District (HBHRCD, the Harbor District)	Humboldt	HBHRCD was created to oversee all development, conservation, recreation, and natural resources of the harbors and ports within Humboldt Bay. The tidelands, bays, and estuaries of Humboldt County have unique and diverse management needs, which HBHRCD aimed to address these needs. Humboldt Bay is the only deep-water port on California's North Coast, serving as a major transportation link between the Pacific Northwest and the rest of the world. As California's second largest natural bay, Humboldt Bay is overflowing with a wide range of natural resources, recreational activities, commercial fishing opportunities, and conservation programs. The Harbor District is undertaking significant port redevelopment efforts to support a full staging and integration port out of Humboldt Bay. They are heavily engaged in related community



ORGANIZATION	COUNTY	DESCRIPTION
		engagement efforts in support of the port redevelopment work and represent a key source of information for many community members.

The Humboldt Bay Harbor District exhibited the highest degree of connectivity observed in this study, with 44 discrete direct connections. Not only is the Harbor District actively engaged with a relatively high number of government agencies as they work towards developing the port area, but they are also engaged with a number of community organizations, Tribes and Tribal Organizations, workforce entities, and others. Active engagement with such groups includes, but is not limited to, the Hoopa Valley Tribe, Blue Lake Rancheria, and Yurok Tribe, both offshore wind developers, the Norcal Carpenter’s Union, local IBEW chapters, RISE, CalPoly Humboldt, and others. This breadth of connections was observed not just in conversation directly with the Harbor District but also in the broader engagement undertaken – many other organizations mentioned the Harbor District as a key source of information for them, especially referencing the recent in-person and virtual sessions which have been held showing plans for the port’s development. It is clear that the Harbor District is viewed as a key pillar in the development of the region and is expected to remain at the forefront of the conversation as the port development precedes that of the wind projects.

As mentioned, port development necessarily feeds into broader offshore wind development plans and timelines. The presence of a redeveloped port capable of undertaking the scale of commercial floating offshore wind development is crucial for project feasibility, especially given the anticipated seasonality of offshore wind construction timelines. Floating offshore wind turbines currently have to be assembled in port and then towed offshore to the project site where they are then anchored to the seabed. To make such logistics feasible, a floating offshore wind port will need to have the quayside space and wet storage space necessary to ensure that they can keep turbine assembly going on a rolling basis so that installation vessels can work efficiently during the calmer summer seasons and between any other seasonality requirements that may relate to environmental concerns, such as periods of high activity for whales.

While port development is crucial in the broader industry development process, there is much separate industry development work that needs to be undertaken. Equally as relevant to the Redwood Region is the development of the broader offshore wind supply chain. While provision of products and services for port redevelopment is also recognized as supply chain contribution, this study focuses on the potential extent of supply chain development to support project build out directly, such as through contributions to major manufacturing, whether through localization of such contracts or through that of contracts to support the lower tier suppliers feeding into this process. *The Humboldt Supply Chain Assessment* dives deeper into the proposed areas of opportunity for the Redwood Region in this industry.

While the Humboldt Bay Harbor District has certainly been recognized as a leading voice in offshore wind development in the region, especially given the state and federal funding they have been able to secure, it is also important to keep in mind that the offshore wind industry more broadly will be considering how best to support a diversified ports network on the West Coast. With five commercial lease sites awarded, there is potential overlap in project development



and installation timelines, further putting pressure on any ports that would be capable of providing staging and integration services for floating offshore wind turbines, especially as they likely could only assemble a couple of turbines at any given time. As such, the industry is looking to the broader region for additional capable assets on the West Coast. In California, this includes the Port of Long Beach in addition to that of Humboldt Bay. There is also the potential for some development and support out of the Port of Coos Bay, and even for some smaller support vessels to work out of the Port of Crescent City. Collaboration between port assets is encouraged to the extent possible in order to ensure that projects can be built out quickly and efficiently, limiting the extent of any disruption to local communities through changes in vessel traffic, quayside construction, etc.

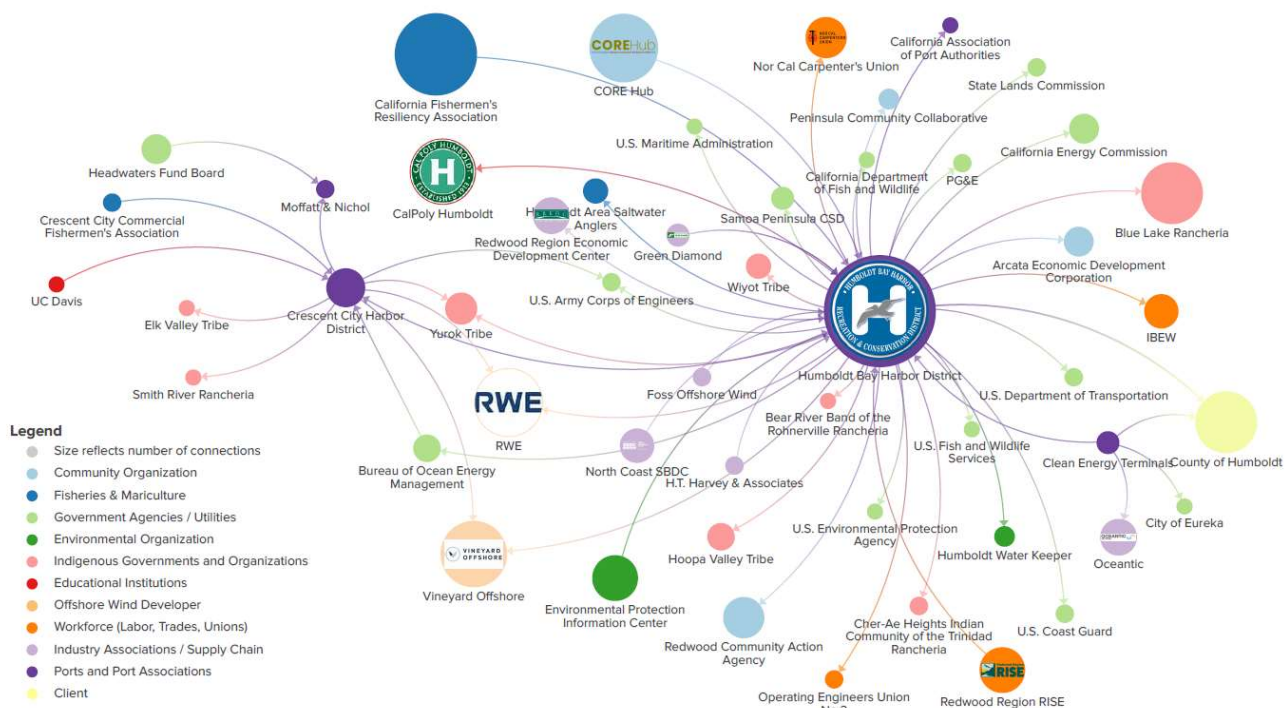


Figure 3-10 – Network of port operators and port associations, including immediate connections, as informed by the engagement undertaken for this scope. Note: this figure does not purport to include an exhaustive list of those active organizations in the region within this focal area; this is a live mapping exercise being continually updated.

3.2.10 Community Organizations

Through initial ecosystem mapping efforts, and the engagement sessions that followed, the following organizations were recognized as being present or active in the community organization focal area (Table 3-13, Figure 3-11). Understanding the ecosystem connectivity of these organizations is important for the County to be able to capitalize on existing information pathways and initiatives already underway in the community.



Table 3-13 – Community Organizations active in the Redwood Region. Highlights indicate organizations which were formally engaged to inform this study, while many of the other entities in this table were also engaged through more casual fora.

ORGANIZATION	COUNTY	DESCRIPTION
Changing Tides Family Services	Humboldt	Changing Tides Family Services offer a wide range of childcare, behavioural health, disability, and community services for working families.
Humboldt Area Foundation (HAF)	Humboldt	HAF's vision is to enable and empower this unique region to thrive as a just, healthy, and equitable place for current and future generations. The HAF is a key funding source for many initiatives and organizations in the region.
Humboldt County Community Foundation	Humboldt	The foundation was established to improve the quality of life in Humboldt County by initiating programs, coordinating resources, and supporting organizations that enhance education, community betterment, arts and culture, health, and human services.
Leadership Redwood Coast	Regional	LRC is a regional fellowship centered on empowering 30 diverse individuals annually throughout Del Norte, Humboldt, and Tribal Lands. A master class on the unique issues they face as a region, LRC equips participating fellows with the skills, relationships, and insights they need to effect innovative and equitable change in their work and communities.
Peninsula Community Collaborative	Humboldt	The collaborative is bringing Peninsula community members together to share ideas, develop solutions, seek support, and put our plans into action to improve safety and well-being. This is a key convening organization for community members on the Samoa Peninsula.
Redwood Coalition for Climate and Environmental Responsibility (RCCER)	Humboldt	RCCER's mission is to ensure that local elected officials and government agencies on California's North Coast take robust, just, and equitable actions to address the climate crisis and other key environmental issues.
Redwood Coast Regional Community (RCRC)	Regional	RCRC provides support for individuals with developmental disabilities in Lake, Mendocino, Humboldt, and Del Norte Counties.
Redwood Community Action Agency (RCAA)	Humboldt	Redwood Community Action Agency is a non-profit that provides a range of services including affordable housing,



ORGANIZATION	COUNTY	DESCRIPTION
		financial support, energy efficiency services, youth services, and more.
Redwood CORE Hub	Humboldt	The CORE Hub supports transitions to decarbonized and resilient communities by helping convene dialogs and sharing resources to the communities. CORE Hub is a key convening institution within the community and is relied upon for dissemination of information around offshore wind updates and opportunities, as well as a resource for collating and responding to public comment and other engagement opportunities. They are also a contributor to the North Coast Offshore Wind website and FAQ page.

The Redwood Region Climate & Community Resilience (CORE) Hub is a self-described convening organization focused on community engagement to support a diverse and equitable ecosystem of local parties in their efforts to contribute to development and decision-making regarding climate resilience initiatives. CORE Hub receives funding from a variety of sources, including the Humboldt Area Foundation and Wild Rivers; the organization also strives to tap into other initiatives to support its engaged community where possible, such as through work with the federal Tribal Climate Resilience Liaison Network, which provides technical assistance, capacity support, and facilitates relationships with offshore wind working groups. In conversations with several CORE Hub team members, the project team explored their role in working with Tribes and Tribal organizations to better manage capacity challenges and effectively share information. These efforts are key in the region, especially with the frequency and intensity of project development and information sharing across both the offshore wind projects themselves and the port redevelopment that is also underway. CORE Hub has also been leading conversations in the community and with offshore wind developers around what potential community benefit agreements (CBAs) might look like in the future for their respective projects.

Capacity issues were a recurring theme heard throughout the engagement supporting this study, and the issue appears to be particularly potent for those Tribes wanting to continue to engage on offshore wind development. As work progresses in the region, it will be crucial to try to support Tribal capacity for continued involvement in these discussions, both by finding funding sources to enable sustained engagement and also by reducing the initial burden where possible (for example, by providing fewer and combined updates).

With their role as a trusted convener across a diverse range of community groups, CORE Hub can be a strong resource for sharing information and connecting relevant people in the community to continue valuable conversations. Many organizations mentioned attending meetings or discussions facilitated by CORE Hub on a frequent basis. Additionally, the organization helps to collate responses to public comment opportunities, ensuring that respondents' thoughts are included in the official engagement records and considered against the draft documents available. CORE Hub also flags the importance of potential workforce opportunities for community members in the Redwood Region, emphasizing the potential for members of local Tribes to undertake work in ecosystem monitoring, adaptive management, and net-

The Redwood Community Action Agency (RCAA) and Peninsula Community Collaborative are also active in ongoing conversations around offshore wind development in the region. They've met with developers to discuss the potential for CBAs and related topics and have highlighted local concerns around the potential impact to transportation and related safety with the anticipated increase to traffic due to construction and operations of the wind projects.

Legend

- Size reflects number of connections
- Community Organization
- Fisheries & Mariculture
- Government Agencies / Utilities
- Environmental Organization
- Indigenous Governments and Organizations
- Educational Institutions
- Offshore Wind Developer
- Workforce (Labor, Trades, Unions)
- Industry Associations / Supply Chain
- Ports and Port Associations
- Client

Document Number: B-400092-S00-R-REPT-001



3.3 Relevant Initiatives

As shown in the previous sections, there are many organizations actively involved in the conversation around offshore wind development in Humboldt and the broader Redwood Region. Throughout the engagement process supporting these studies, the project team has kept a running list of initiatives underway in the region; some of the key programs are outlined below (Table 3-14).

Table 3-14 - Key initiatives related to offshore wind development in the Redwood Region.

ORGANIZATION(S)	INITIATIVE	DESCRIPTION
Redwood Region RISE	Regional Plan	A document detailing a strengths, weaknesses, opportunities, and threats (SWOT) analysis for economic development in the Humboldt Region. Part 1 has already been published: https://ccrp.humboldt.edu/regional-plan-part-1
Humboldt County Economic Development Division, Greater Eureka Chamber of Commerce, Redwood Region Economic Development Center, Northern California SBDC, Redwood Coast Chamber Foundation, Norcal APEX Accelerator	WindLINK	WindLINK has been established with an MOU between the counterparties with the goal of providing a convening organization to manage information and development activities relating to offshore wind development in the Redwood Region.
Schatz Energy Research Center (Cal Poly Humboldt), Pacific Marine Energy Center (Oregon State University), Center for Coastal Marine Sciences (Cal Poly San Luis Obispo)	Pacific Offshore Wind Consortium	A consortium established to foster resource sharing, collaboration across best practices, and support innovative research for West Coast offshore wind development. More information available here: https://powc.us/
Redwood CORE Hub	Community Benefits Agreement	CORE Hub was requested by local, Tribal, and federal governments, agencies, and community organizations to facilitate community engagement sessions to shape a Community Benefits Agreement for the region in anticipation of the offshore wind industry.
Many entities, including all survey respondents	POWER CA	This conference, held in Humboldt County, brings together interested parties to discuss renewable energy development in the region, with a large focus on how to drive offshore wind development in the Redwood Coast region.



ORGANIZATION(S)	INITIATIVE	DESCRIPTION
	Tribal Conference	
Blue Lake Rancheria, Karuk Tribe, Hoopa Valley Tribe, Wiyot Tribe	Tribally co-designed pre-apprenticeship program	This program, in active development, will provide an opportunity for interested Tribal members to partake in onsite training pre-apprenticeships to prepare for participation in the OSW workforce and adjacent projects.
Schatz Energy Research Center	Workforce Initiative and Research Project	Ongoing studies to address upcoming workforce needs related to the development of the renewable energy sector. Looking at professional programs required to build up Schatz and other curriculum in the region to support upcoming opportunities related to offshore wind development and other renewable energy sectors. The intention of the study is to inform University strategies of curriculum requirements.
Attendees include North Coast SBDC, Express Employment Professionals, Redwood Community Action Agency, UC Cooperative Extension, Humboldt Social, Humboldt Workforce Development Board, CalPoly Humboldt, Norcal APEX Accelerator, and the Environmental Protection Information Center, Wiyot Tribe, College of the Redwoods, Schatz	University of Massachusetts Offshore Wind Professional Certificate	This year-long program, designed for full-time working professional and/or students, provides a comprehensive offshore wind education. This baseline education is useful to many different backgrounds, from those looking to gain a peripheral understanding to those looking to supplement their day-to-day work in this space. The county was able to send 12 people through this program. This Initiative was funded by the HCWDB through a \$1.5 million Offshore Wind planning grant.
Environmental Protection Information Center, CORE Hub, Humboldt Waterkeeper	Offshore Wind FAQ	This website has been developed to provide information in response to the most Frequently Asked Questions about offshore wind development in the Redwood Region, including on timelines, environmental impacts, logistics, and more. http://northcoastoffshorewind.org/

Other initiatives led by the Humboldt County Economic Development Division, including the Comprehensive Economic Development Strategy and local and regional development plans, are actively feeding into offshore wind development planning in the region and will continue to be part of the planning process as timelines solidify. Given these varied initiatives in the region, it is apparent that responsible offshore wind industry development is a priority for the community. With so many studies and efforts underway, this list provides an overview to support the County in understanding how they can best be involved while also limiting unnecessary duplication of work and resources. It is valuable to understand how organizations conducting similar studies might be able to collaborate and create more efficient outputs while also lowering the burden placed on communities, especially given existing capacity constraints that have already been identified and communicated.



4 CONCLUSION & FINDINGS

Although the Humboldt offshore wind areas are still very much in the early days of development, conversations and relevant studies are well underway, with community members from a broad range of focal areas actively taking part. During these early planning stages, efforts are expected to focus on development to support the capabilities of the local supply chain and workforce to assist in the rollout of offshore wind. This early development supports efforts to localize as much economic benefit (through both jobs and contracts) to the region as possible. The extent of both workforce and supply chain opportunities are explored further in *Humboldt Offshore Wind Workforce Assessment* and *Humboldt Offshore Wind Supply Chain Assessment*, while the outcomes of this report include key themes from initial engagement conversations in the region.

The following themes have been included due to their relevance and importance in crafting a strategy for efficient development actions in both the Humboldt and wider Redwood Region. It is important to note that the themes below should not be taken as universal amongst those entities that engaged with the team for this study, as no community is a monolith. They are meant to characterize the broad sentiment present in the region at this moment in the development process.

Key Themes from Engagement



In general, there appears to be a fair amount of **support, excitement and optimism** about what offshore wind development may mean for the Redwood Region. The new industry appears to be perceived as a much-needed chance to revitalize the local economy, and while enthusiasm is certainly tempered, **scepticism appears to be healthy and focused on finding solutions** to outstanding problems.



The largest, **consistent concern** throughout engagement was regarding **misinformation** in the local communities. Participants referenced concerns for whales, human illness due to turbine noise, and technical complexity as the most frequent topics around which misinformation has been observed. **Social media was identified as a key source** for the dissemination of these **misinformation campaigns** (namely Facebook and other online forums).



Several participants raised concerns from themselves or their networks of the **readiness of floating offshore wind technologies**, particularly considering the **unique parameters** of the California offshore lease areas (water depth, sea state, etc.). It is apparent that **additional information on technical justifications**, advancements, and successful case studies could support conversations around this topic.



There is a definite desire to understand the reality of what the required workforce will be for these projects. The local community wants to **understand what a realistic scenario** might look like so that they can work to be best prepared to **localize those jobs that are practical**. There appears to be a solid understanding that not every job will be filled by a local person, but that there may be several areas in which the local workforce can support these projects, both in the construction phase and beyond. There were also several questions as to how an influx in external workers may **impact wraparound services**, including housing, healthcare, and childcare.



The perception of the **Project Labor Agreement (PLA)** that has been signed for the development of the port appears to be mixed, with some participants expressing praise for the agreement and noting that there are exceptions which open the door for more local participation and others expressing concerns that this will make participation more difficult for local small businesses given the **requirements of unionization** and the wages, etc. that come along with that.



Throughout the engagement process, several participants raised **concerns over capacity** for themselves and others. It was widely acknowledged that the development of this new industry in the region presents a **significant amount of information** to stay up to date with, much of it highly technical. For participants to feel well-informed, they expressed a need to spend much more time keeping up with the news in this space. In particular, capacity concerns for the Tribes in the region were raised consistently, with several organizations suggesting the formation of some sort of **capacity draw-down fund** to support meaningful and consistent engagement.



The developers appear to be well connected in the local community, not only through the SNA, but also as was mentioned several times throughout the engagement process. Several participants mentioned **one-on-one meetings with developers as key sources of information**, as well as some of the **ongoing community events** they have hosted.



There is a need for a trusted and centralized source for information sharing in the region. This would directly affect the capacity, misinformation, and development points discussed above. Potentially, an initiative like WindLink could serve this purpose. There is a strong desire in the region to get WindLink up and running to **serve as a consensus building initiative**, providing more information to the relevant communities and crystallizing some of the individual participants' efforts. Overall, the **MOU is looked upon very favorably** and people are eager to keep moving forward with the initiative.



Several participants mentioned **New Bedford as a proxy** in some context – some recounting recent visits hosted by Vineyard Offshore and others expressing familiarity with some of the initiatives that have arisen there. There is a clear desire to understand and learn as much as possible from other proxy developments, but it is important to note that **development in New Bedford differed significantly from that in Humboldt**. Humboldt presents a more complex case, not only because of the



floating technology (compared to fixed in New Bedford), but also due to its rural location, smaller population, and distance from key manufacturing hubs.

Conclusions

Throughout the engagement conversations, the Xodus team also asked about information and resource gaps, with the goal of identifying ways for the County or other organizations to facilitate others to more effectively do their work. While there were certainly continued requests for open information sharing as more updates become available, the most commonly heard refrain was a general need for more time and energy to spend on this topic, echoing the capacity concerns raised earlier in this report. Several participants mentioned that they just do not feel they have enough time in their day to stay abreast of all the updates and relevant information on this topic. While capacity funding may provide a solution for some of the organizations in this network, another useful solution would include the establishment and upkeep of a dedicated webpage collating relevant information and updates for interested parties in the region. There are a number of discrete resources available at the moment, such as the EPIC FAQ, but having links or references to such documents all in one place could go a long way towards making information more accessible. This last point is especially important when it comes to the inclusion of general community members and non-technical parties who want to be involved and gain an understanding of this potential development in their community, but do not necessarily have the time or energy to dedicate to more in-depth research.

There are various ways in which the County can continue to support the ongoing conversations and initiatives in the region, but perhaps the most effective will be to continue the establishment of WindLink and ensure that it is effectively serving the needs of the broader community in this space. Further recommendations, including specifics off the back of the supply chain and workforce assessment results, will be provided in the follow on reports.

As a final note on this portion of the study, not all organizations and community members are represented herein. There are other relevant perspectives, opinions, and ideas in the Humboldt region, and it is anticipated that future engagement efforts by the County and others in the region will expand on this and continue to adapt as new information becomes available. It is this adaptability in and of itself that enables a healthy network like that in the Redwood Region to make the most of novel opportunities for their local communities.



APPENDIX A

The table below includes a list of all those organizations who engaged in some way throughout this project. The table also includes the names of organizations who were contacted for input, but did not respond and have therefore not had their perspectives captured in this study.

Table 4-1 – Organizations contacted, engaged, and/or surveyed to inform this study and their primary focal area. Note that an organization may be applicable to multiple focal areas – for the below table, only the primary focal area has been listed.

ORGINIZATIONS	FOCAL AREA(S)
Arcata Chamber of Commerce	Industry Associations / Supply Chain
Blue Lake Rancheria	Indigenous Governments and Organizations
Builders Exchange	Workforce (Labor, Trades, Unions)
Building and Construction Trades	Workforce (Labor, Trades, Unions)
Cal Poly Humboldt / Schatz	Educational Institutions
California Fishermen's Resiliency Association (CFRA)	Fisheries & Mariculture
City of Arcata	Government Agencies / Utilities
City of Eureka	Government Agencies / Utilities
College of the Redwoods	Educational Institutions
CORE Hub	Community Organization
County of Humboldt Economic Development Division	Government Agencies / Utilities
Crescent City – Del Norte Chamber of Commerce	Industry Associations / Supply Chain
Crescent City Harbor District	Port Operators & Port Associations
Environmental Protection Information Center (EPIC)	Environmental Organization
Express Employment Professionals	Workforce (Labor, Trades, Unions)
FOSS	Industry Associations / Supply Chain
Greater Eureka Chamber of Commerce	Industry Associations / Supply Chain
Green Diamond	Industry Associations / Supply Chain
Humboldt Harbor District	Port Operators & Port Associations
Headwater's Fund Board	Government Agencies / Utilities
Hog Island Oysters	Fisheries & Mariculture



ORGINIZATIONS	FOCAL AREA(S)
Hoop Valley Tribe	Indigenous Governments and Organizations
Humboldt Area Saltwater Anglers	Fisheries & Mariculture
Humboldt Bay Yacht Club	Community Organization
Humboldt County Workforce Development Board	Workforce (Labor, Trades, Unions)
Humboldt Fishermen's Marketing Association	Fisheries & Mariculture
Humboldt Waterkeeper	Community Organization
IBEW	Workforce (Labor, Trades, Unions)
International Longshore and Warehouse Union (ILWU)	Workforce (Labor, Trades, Unions)
Laborers United International Union (LiUNA)	Workforce (Labor, Trades, Unions)
Lake County Chamber of Commerce	Industry Associations / Supply Chain
Lost Coast Wind	Indigenous Governments and Organizations
McKinleyville Chamber of Commerce	Industry Associations / Supply Chain
Mendocino Coast Chamber of Commerce	Industry Associations / Supply Chain
Moffatt & Nichol	Industry Associations / Supply Chain
Northern California Indian Development Council (NCIDC)	Indigenous Governments and Organizations
Northern California Tribal Chairmen's Association	Indigenous Governments and Organizations
Norcal Carpenters Union	Workforce (Labor, Trades, Unions)
Norcal APEX Accelerator	Industry Associations / Supply Chain
Nordic Aquafarms	Fisheries & Mariculture
North Coast Small Business Development Center (SBDC)	Industry Associations / Supply Chain
NOV	Industry Associations / Supply Chain
Oceantic	Industry Associations / Supply Chain
Operating Engineers Local 3 (OE3)	Workforce (Labor, Trades, Unions)
Pacific Coast Shellfish Growers Association	Fisheries & Mariculture
Principle Power	Industry Associations / Supply Chain
Redwood Community Action Agency	Community Organization
Redwood Region Economic Development Center (RREDC)	Industry Associations / Supply Chain



ORGANIZATIONS	FOCAL AREA(S)
Redwood Region RISE	Community Organization
RWE	Offshore Wind Developer
Samoa Peninsula CSD	Community Organization
Seatrium	Industry Associations / Supply Chain
Security National Properties	Industry Associations / Supply Chain
Sheet Metal Workers Local #104	Workforce (Labor, Trades, Unions)
Southern Humboldt Chamber of Commerce	Industry Associations / Supply Chain
UC Davis Cooperative Extension	Educational Institutions
Vestas	Industry Associations / Supply Chain
Vineyard Offshore	Offshore Wind Developer