

Pacific County Marine Services Final Report

CEP 460: Planning in Context

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Executive Summary

The Pacific County Marine Services Cluster Project aims to support the development of a robust marine industry cluster in Pacific County, leveraging education-industry partnerships, infrastructure, and policy insights to drive economic growth and workforce development. This project is spearheaded in collaboration with the Pacific County Economic Development Council and involves comprehensive research into best practices, case studies, and frameworks for successful industry clustering.

By aligning education, industry, and government stakeholders, the project seeks to create actionable recommendations that will empower Pacific County to build a thriving marine services sector. This effort is not only about creating economic opportunities but also fostering a vibrant, sustainable future for the community.

Our purpose was to give the Pacific County Economic Development Council recommendations, after doing our own research and producing actionable next steps for them to consider. Some of the areas we identified as needing the most focus for the progression of the cluster based on its current status include the following:

- The development of a specialized workforce.
- The integration of industrial and non-industrial activities
- The reinvigoration of highschool education

These recommendations are based on the information provided to our team through our literature review and interviews with various stakeholders in the project. They aim to support the development of the marine services cluster but can also be beneficial to the economic

development of Pacific County as standalone projects as well, making them beneficial to the community either way.

Introduction

This project was a collaboration between the Livable City Year (LCY) initiative and the Pacific County Economic Development Council (PCEDC) focussed on clustering marine services within Pacific County. Originally known for logging, Pacific County is a world famous location for the harvesting of oysters, and this industry is what the Pacific County EDC hopes to support through industry clustering, networking, and identifying useful resources for businesses in the aquaculture industry. The council aims to bring together marine and maritime dependent businesses along with various learning institutions within the county. Special attention is given to Port of Willapa Harbor properties as the hub for the activity of this aquaculture industry.

The objective of the work completed throughout the 10-week quarter allocated to us to work on this project was to propose recommendations and actionable next steps for Pacific County. There is an emphasis on creating meaningful relationships between industry stakeholders and sustainable economic development and action. The utilization of case studies and interviews with relevant stakeholders helped inform these recommendations and are presented in this final report.

Purpose and Scope

Our project served to provide insight for our clients into a portion of their economy that they were looking to learn more about—the marine services sector—and provide strategies to revitalize it to bolster existing commerce and bring new businesses in. We focused on the potential formation of a business cluster in Pacific County, first determining whether it would be beneficial to the local economy, then identifying the characteristics of successful clusters.

Though the scope of the project is focused on expanding businesses relating to maritime activities, we also found that many of the benefits of our strategies would extend to other sectors, particularly tourism and education. With this report, our team sought insight into growing the marine services sector into a cluster of businesses to build off each other to profit and ideally, bring more people and capital to the county at large.

Timeline

	TYPE	TASK	Wee k 1	Wee k 2	Wee k 3	Wee k 4	Wee k 5	Wee k 6	Wee k 7	Wee k 8	Wee k 9	Wee k 10
1	Project Concept and Initiation	- Team Bios - Work Plan										
2	Background Research	- History and Context Essay - Stakeholder Research										
3	Data Collection	- Stakeholder Interviews - Literature Review										
4	Project Close	- Final Report - Final Presentation										

Client

Our client this quarter was the Pacific County Economic Development Council (PCEDC). Established in 1986, the PCEDC is a nonprofit organization that supports the economic vitality of Pacific County (Pacific County Economic Development Council, 2024). The organization achieves this through partnerships with local businesses, promoting initiatives that preserve natural resources, advocating for local industries, and more. Our direct points of contact were Sue Yirku, the executive director of PCEDC, and Kelly Rupp, the managing

principal of Lead to Results, LLC. Sue and Kelly provided our team with valuable context and feedback throughout the quarter.

This project was also conducted in collaboration with Livable City Year (LCY), an initiative at the University of Washington that connects students with community partners (Livable City Year, 2024). The PCEDC is among several partners working with LCY this year to engage students on high-priority projects. Our primary point of contact at LCY was Sarah Whitney, the program manager. Through LCY's ongoing partnership with the PCEDC, our audience also includes future studio courses that will continue developing this project.

Finally, the broader audience for our project includes businesses and educators in Pacific County that are interested in PCEDC's marine service cluster plan. This includes, but is not limited to, the stakeholders we engaged with throughout the quarter.

Process and Methodology

Stakeholder Interviews

Our research consisted of interviews, literature review, and a survey to provide a comprehensive understanding of stakeholder perspectives and strategies for strengthening the marine services cluster in Pacific County. Our literature review allowed us to examine what had worked in the past in other cases, while interviews with stakeholders focused on current challenges, potential solutions, and mapping out resources already available to support economic development in Pacific County. By focusing on both of these aspects, we were able to create recommendations that were both evidence-based and also tailored to the specific context of Pacific County.

At the start of our project, we were provided a list of 12 stakeholders from Pacific County Marine Services, and so to begin our research, we conducted in-depth background research on

these stakeholders. We collected detailed information about each stakeholder's current operations, priorities, industry connections, past projects, and areas of expertise. Conducting this background research was essential for understanding the unique roles and needs of each stakeholder within the broader context of the marine services sector. This step allowed us to tailor our interview questions effectively, ensuring they were relevant and informed by each stakeholder's specific contributions to the industry. Additionally, this research provided a strong foundation for informing our interview questions.

To gather qualitative data, we conducted interviews with stakeholders, with each team member selecting two stakeholders to focus on. To ensure consistency and comparability across interviews, the team collaborated to design four general questions applicable to all stakeholders. While these questions would not be specifically asked in the interviews, they would be used as a framework for creating stakeholder-specific questions. When drafting our specific questions, each question would be an elaboration of the following questions:

- What is the role of your business or organization in the Pacific County marine services sector?
- How would you like your business or organization to be involved with the development of a marine services cluster?
- What resources or services would be most beneficial for your organization if they were available within Pacific County?
- Are there any concerns you have about the potential development of a marine services cluster in Pacific County?

Each team member developed three to four stakeholder-specific questions for each stakeholder they selected to interview. This helped us to dive deeper into each participant's

unique context and expertise. The full list of stakeholder-specific questions and interview answers can be found in *Appendix I*.

We each reached out to our selected stakeholders via email and included the interview questions. We also provided a link to an online survey with identical questions as an alternative option for those unable to participate in a live interview. By doing this, we hoped to have some flexibility in order to increase response rates and accommodate the schedules of our stakeholders.

During interviews, we aimed to have at least two team members present whenever possible. This allowed one person to ask questions while the other took notes, ensuring the accuracy and completeness of the data collected. In cases where only one team member was available, they handled both roles.

In the interview, we started by introducing ourselves and our roles in our project. We restated the purpose of our project and the significance of interviews and thanked our stakeholder for being there. We then started with interview questions. After each response, if there was a notetaker present, they wrote down important points of each answer and the interviewer asked any necessary follow-up questions. Once all questions were asked, we asked our stakeholder if there was anything else they would like us to know, and then concluded the interview by thanking them again and informing them that we would share our final results with them if they wished.

After each interview, we entered a detailed summary of notes and key takeaways from our interview into a shared Google drive called Stakeholder Interview Notes. We worked together to identify common themes across stakeholders' responses. One prominent theme was the critical role of education in supporting the marine services sector. Stakeholders consistently

emphasized the need for stronger connections between local education and industry, and we concluded that this could be an area of opportunity for the proposed marine services cluster.

Case Studies/Literature

In order to gain a better understanding of the project, our team conducted background research over three main categories that we identified as key components of the project. These categories include; rural and small town economic development, the connection between industry and education, and marine services clusters. Each team member researched at least three relevant sources. Our primary sources for finding our case studies include UW Library and Google Scholar. When analysing case studies, we ensured that we were keeping in mind how it would be applicable to Pacific County's unique situation, the current relevance to the overall field, and the basics such as when the paper was published.

Rural and Small Town Economic Redevelopment

The first topic area we focused on for our case studies was rural and small town economic redevelopment. This is a key interest for our project because the marine services cluster will require funding. Making the marine cluster a point of interest could help to attract the necessary investment. The marine cluster itself may also be a starting point for the redevelopment of the local economy, so finding out how to make the marine cluster both functional and economically productive through multiple avenues by looking at similar case studies is an important aspect of this project. The stakeholders most important to this project are aligned with the literature sourced. Our stakeholders keep a successful and positive economic redevelopment project as the primary goal of this redevelopment. This brings this topic to the forefront of the goals of our scope of work. It is also important to note that we made sure that we

looked at rural and small towns exclusively as cases in urban environments would not apply to the setting in Pacific County.

Some of the key topics covered in our sources include the importance of agglomeration, integration of recreational activities, NOAA's SMART approach for coastal economic development, industrialized economies and what we can apply from them to rural economic development, local food programs in Gloucester, Massachusetts and how they helped to develop the local seafood industry, how to use the unique aspects of rural areas in order to promote economic development, and the outcome of the implementation of a SMART growth plan in Madison County, New York.

Artz, G. M., Kim, Y., & Orazem, P. F. (n.d.). Does agglomeration matter everywhere? New firm location decisions in rural and urban markets. EBSCO.

<https://research-ebSCO-com.offcampus.lib.washington.edu/c/2onyl7/viewer/pdf/4dn5p54xsj?proxyApplied=true>

This article explains how agglomeration is important in both rural and urban contexts, arguing it supports both large firms and individual businesses in proximity to other related businesses. It also recommends implementing policy to make commuting easier and cheaper for workers to encourage skilled labor to come in from more distant locations; rural areas are disadvantaged in forming business clusters due to the distance barrier to finding labor. Artz et al. emphasizes the importance of policy making meant to encourage agglomeration to consider these barriers rural markets face to best grow the local economies.

Martin, A., Martin, B. S., & Wilkinson, A. (2004). Marine recreation and the process of rejuvenation of small ports and harbours. <https://oar.marine.ie/handle/10793/326>

This article discusses strategies of bringing new life to small ports and harbors through the integration of recreational activities. It emphasizes the importance of bringing leisure activities into harbors and describes it as a tool for fostering general economic development. Though this differs from the Port of Willapa Harbor's primary goal of expanding its marine services, it is still relevant to bringing economic growth to the somewhat rural location which in turn encourages industrial growth and makes the location more appealing to live and work in. This article specifically recommends clustering tourism and leisure infrastructure, creating an economy of scale and fostering an attractive business district. This report notably finds that surrounding existing small ports and harbors, leisure activities are very under-utilized and offer a large opportunity to draw in more recreational users.

National Oceanic and Atmospheric Administration. (2009). *Achieving sustainable growth in coastal communities: Smart growth strategies for disaster resilience, water quality, and habitat protection*. U.S. Department of Commerce. Retrieved from https://coastalsmartgrowth.noaa.gov/smartgrowth_fullreport.pdf

The National Oceanic and Atmospheric Administration (NOAA) has released this report in order to provide coastal communities guidance on how to foster economic opportunities and growth, overall development of the land, and preserve their sense of identity. They do this through the SMART approach, which includes ten elements tailored to waterfront communities. A few of the relevant SMART growth elements include mixed land uses, fostering distinctive and attractive communities with a strong sense of place, capitalizing on the waterfront heritage, and encouraging community and stakeholder collaboration in development decisions, ensuring that public interests and rights of access to the waterfront and coastal waters are upheld. The article goes into detail about each element and offers case studies on the elements, highlighting

key action options, and techniques for implementation of each action. While it is an older guide and is not as detailed in some topics as would be helpful for the project, it is helpful in giving a general sense of what could contribute to economic redevelopment, how it has worked out elsewhere, and can help to jumpstart ideas on areas that are important for the project.

Ryser, L., & Halseth, G. (2010). Rural Economic Development: A Review of the Literature from Industrialized Economies. *Geography Compass*, 4(6), 510–531.

<https://doi.org/10.1111/j.1749-8198.2010.00321.x>

Ryser and Halseth use industrialized economies as a reference for growing rural economies, and aim to name some commonalities and potential lessons that can be applied to rural locations. They name some major barriers to growing rural economies like shortages of skilled labor, and describe the need to diversify rural economies if they want to see the same stability and growth as industrialized economies. The authors describe how workers must travel long distances to prepare themselves for better-paid, higher-skill jobs, highlighting the need to bring education opportunities closer to rural communities to foster economic growth locally rather than seeing gradual population loss as people move to seek greater opportunities in urban centers.

Local initiatives are also brought to attention because they cater specifically to the needs of rural residents, and take advantage of the greater centralized knowledge to meet their own needs. This often involves the creation of “place-based economies,” which according to the authors, reinforce community cohesion and have the potential to add greater value than if the location relied more on importing goods and services.

U.S. Environmental Protection Agency. (n.d.). *Local foods, local places: Gloucester, Massachusetts*. EPA. Retrieved November 13, 2024, from

<https://www.epa.gov/smartgrowth/local-foods-local-places-gloucester-massachusetts>

The program that this article outlines: *Local Foods, Local Places*, is a federal initiative by EPA to support local communities with local food programs. It has helped Gloucester, Massachusetts, promote its local seafood industry (Cape Ann Fresh Catch) by leveraging the city's maritime heritage to support economic growth and sustainability.

Gloucester received assistance in 2016 to develop strategies that enhance the local food economy, particularly focusing on sustainable fishing practices. The city launched the *Gloucester Fresh* program to brand and market local seafood (funded by a \$151,000 state Economic Seaport Council grant), which has successfully attracted grants and boosted local business. The initiative emphasizes collaboration between local stakeholders, such as fishermen, policymakers, and community leaders, to strengthen the local food system. These efforts aim to promote healthier food choices, support economic development, and preserve cultural heritage within the community. A key finding from this source is that it is important to have a multifaceted approach to developing maritime industries, and that the process may be time-consuming.

This source is from the Environmental Protection Agency's website, and is sourced from interviews with Salvatore L. Di Stefano. Di Stefano is the senior economic development director at the City of Gloucester.

U.S. Environmental Protection Agency. (2015). *Competitive advantage for small and rural*

***towns* (EPA 231-R-15-003). EPA. Retrieved from**

https://www.epa.gov/sites/default/files/2015-05/documents/competitive_advantage_051215_508_final.pdf

“Competitive Advantage for Small and Rural Towns” by the Environmental Protection Agency provides guidance on how small and rural communities can leverage their unique local assets (historic sites, natural landscapes, and cultural identity) to stimulate economic growth, improve quality of life, and build resilience. It discusses strategies for revitalizing town centers, supporting local businesses, promoting walkability, and creating attractive, sustainable community spaces. Key areas that they cover include economic development, community engagement, and environmental sustainability. While this document didn’t directly focus on marine clusters, it provides case studies for similar industries like agriculture and timber.

Overall, this document is relevant to our project because it outlines federal resources and programs available to small communities. The paper offers pathways for funding and support for towns looking to implement the outlined strategies. This source is from the EPA, and was reviewed by experts in the environmental economics and community development fields.

U.S. Environmental Protection Agency. (2015). *Madison County, New York: Smart growth implementation assistance for rural communities* (EPA 231-R-15-004). EPA.

Retrieved from

https://www.epa.gov/sites/default/files/2015-07/documents/madison_county_sgia_071015.pdf

This article outlines the way the EPA tested a smart growth self-assessment tool for rural communities in three cities in Madison County: the small city of Oneida, the town of Brookfield and the village of Chittenango. It aims to address specific rural challenges, such as limited public transportation, the need for economic development, and preserving agricultural land and natural resources. The source outlines areas that rural communities can focus on when formulating development policies. One key finding from this article was the importance of collaboration

across different scales. Similar to previous sources, this paper also identified that small, incremental changes are often more effective for rural communities. This article is from the Environmental Protection Agency. One limitation is that the source focuses on a county in New York, so some aspects may not be as applicable to Pacific County.

Connection Between Industry and Education:

The second area subject we focused on was the connection between industry and education. This is a key subject for our project because our clients are interested in the educational and skills-building aspects of the marine services cluster. More specifically, they want to learn if these clusters emerge from apprenticeship opportunities within local businesses or from educational programs offered by institutions. The sources in this section focus on youth summer employment opportunities, as well as the connection between community colleges and industry clusters. This aligns with the curiosities with partners from Pacific County. Specifically, stakeholders in the aquaculture industry that are particularly intrigued by the possibility of classroom-to-career education programs. It is also personally intriguing to understand how educational programs are tied to the economic redevelopment of rural communities. It is an issue that requires the alignment of multiple stakeholders so it is important to best understand how this can be achieved.

Some of the key topics covered in this section include; a case study from Walla Walla, Washington looking at how their local community college supports the local wine industry, Advance CTE and how they support CTE and summer youth employment programs with case studies in various areas, the role of community colleges in regional development in Virginia, the

influence of community colleges on local industry clusters, and the overall benefits of summer youth employment programs.

Velluzzi, N. D. (2010). Community Colleges, Clusters, and Competition: A Case from Washington Wine Country. *Regional Studies*, 44(2), 201–214.

<https://www.tandfonline.com/doi/abs/10.1080/00343400903167888>

Velluzzi's (2010) article examines how community colleges influence industry clusters and competition, focusing on Walla Walla, Washington. It highlights the role of the Walla Walla Community College Center for Enology and Viticulture (the Center) in supporting the local wine industry. The Center supports this relationship through geographic proximity, vocational education, and experiential learning, preparing students for wine industry careers. Collaboration with industry is a cornerstone of its program.

Written by Nick D. Velluzzi, VP of Planning, Effectiveness, and Economic Development at Walla Walla Community College, the peer-reviewed article benefits from Velluzzi's expertise in economic geography and urban planning. However, the paper overlooks how the wine industry's unique characteristics shape education-industry ties and how these partnerships were initially established. Despite these gaps, the article offers valuable insights into how community colleges can strengthen industry clusters. It is particularly relevant for Pacific County, which seeks to strengthen connections between its education system and marine industry cluster. The strategies outlined could guide Pacific County in initiating education-industry partnerships.

Advance CTE. (2023). *Exploring summer youth employment as a gateway to postsecondary and career success*. National Association of State Directors of Career Technical Education Consortium. Retrieved from

https://careertech.org/wp-content/uploads/2023/09/FINAL_Exploring_Summer_Youth_Employment.pdf

This report from Advance Career Technical Education (CTE) makes a case for the effectiveness of summer youth employment programs (SYEP) as a pathway to career success by giving youth work experience and a space for skill building. They explain how summer youth employment programs should be more in line with work-based learning by creating career awareness, providing opportunities for career exploration, and setting students up for success through career preparation. The report gives case studies and examples of SYEPs in action at both a state and national level. The paper recommends how to implement SYEPs in conjunction with CTE programs and how they can be beneficial. This report was done for Advance CTE, a non-profit organization that represents the realm of CTE. One shortcoming of this source is that it is not very long, and does not directly address industry clusters. This source is still relevant to our project because CTE is closely tied in with industry clusters, and offering CTE credits to youth is something that our clients have shown great interest in.

Budd, E. Roy. 1996. "The Role of the Community College in Regional Economic Development in the Commonwealth of Virginia." *Economic Development Review* 14 (2): 43.

<https://research-ebSCO-com.offcampus.lib.washington.edu/linkprocessor/plink?id=41ac4cbf-1347-36c6-901a-c5d89ccddff1>.

Budd's (1996) article examines how community colleges contribute to regional development in Virginia through focus groups and interviews. It highlights the role of community colleges in supporting economic drivers and offering programs aligned with industry

needs. The article showcases successes in education-industry partnerships and provides solutions for creating effective vocational programs.

Published in the *Economic Development Journal*, a leading publication on economic development, this peer-reviewed study is a valuable resource. However, it is limited by its focus on Virginia's specific economic drivers and the global market influences of the time.

Additionally, the article's age may reduce its applicability to today's economic conditions.

Despite these limitations, the article offers valuable insights into how education can bolster local industries. It also provides recommendations for Virginia community colleges that Pacific County could adapt to their marine industry cluster. This case study offers a framework for understanding successful education-industry relationships and potential strategies to strengthen such partnerships in Pacific County.

Rosenfeld, S. (2000). Community College/Cluster Connections: Specialization and

Competitiveness in the United States and Europe. *Economic Development Quarterly*, 14(1), 51–62. <https://doi.org/10.1177/089124240001400107>

This paper explores how community colleges influence regional industry clusters, and vice versa. When community colleges target specific industry clusters, it can enhance students' quality of education, encourage informal learning, raise awareness of job opportunities, and more. Another key takeaway from this article is that community colleges can attract resources to clusters and benefit their development. This paper appears in *Economic Development Quarterly*, a peer-reviewed, academic journal. Additionally, the author is an expert in regional clusters and economic development strategy. This article has no outstanding biases, but one subject that was not explored was whether or not community college and industry cluster connections have any

disadvantages. This paper is valuable to our project because our clients have expressed interest in learning more about the role educational institutions could play in an industry cluster.

Fernandes-Alcantara , A. (2017). Background and Federal Efforts on Summer Youth Employment [Review of Background and Federal Efforts on Summer Youth Employment]. Congressional Research Service.

<https://crsreports.congress.gov/product/pdf/R/R44746/5>

This paper discusses the benefits of summer youth employment and the federal efforts being made to promote these job opportunities. Summer employment can help young people develop their skill sets and defer them from potentially harmful activities. One key takeaway from this reading is that summer youth employment does not necessarily lead to employment outcomes, mainly due to the short duration of most programs. This paper is from the Congressional Resource Service, which works directly with the U.S. Congress to provide policy analysis. The author, Adrienne Fernandes-Alcantra, is also a specialist in social policy. One potential shortcoming of this paper is that it was published in 2017. This means that the federal summer employment programs discussed are not up to date. This paper is valuable to our project because some maritime businesses in Pacific County already have established youth employment programs. For example, on our site visit we spoke with Kathleen Nisbet Moncy, the COO of Goose Point Oysters (GPO). Kathleen told us that although GPO has summer internships, many of the program's graduates end up working at larger ports like Seattle.

Marine Service Clusters

The sources in this section are focused on the clustering of industry clusters with an emphasis on clusters in rural communities. There is also a focus on how marine services specifically face unique challenges and benefits as an industry to be clustered in a rural

community. These papers also lay out the benefits and disadvantages to community members and employees of having a clustered industry a part of their economic process. This is an integral aspect to consider when clustering an industry.

This is an important topic for our project because the Pacific County Economic Development Council is hoping to facilitate the creation of a marine service cluster in their county. These sources will help further our understanding of marine service clusters and the benefits they can provide to a region. Additionally, having case studies of marine service clusters can help us better understand how they develop and evolve overtime. This is important to ensure that Pacific County can be accounting for the future while dealing with current economic troubles. These resources will inform our project by allowing us to provide our clients with case studies and detailed recommendations. This will help provide Pacific County with constructive recommendations.

Chrisinger, C. K., Fowler, C. S., & Kleit, R. G. (2015). Industry Clusters and Employment Outcomes in Washington State. *Economic Development Quarterly*, 29(3), 199-210.

<https://doi-org.offcampus.lib.washington.edu/10.1177/0891242415571126>

Chrisinger et al. (2015) examined the relationship between industry clusters and employee wages using Washington State Employment Security Department data on quarterly earnings and hours worked from 2003 to 2010. Employees were categorized into three groups: those not employed in cluster sectors, those employed in cluster sectors but outside cluster counties, and those employed in cluster sectors within cluster counties. The study found that employees in cluster sectors within clusters earned higher average and median wages but experienced greater employment volatility. Interestingly, wage growth was higher in non-cluster

scenarios. The study acknowledged the potential effects of the 2007–09 financial crisis and broader economic trends.

Published in *Economic Development Quarterly*, a reputable journal, the study is highly credible. The authors, including experts from the University of Oregon, Pennsylvania State, and Ohio State University, bring strong academic credentials. However, the article’s findings are limited by its inability to account for demographic factors like education, race, age, and gender across counties.

This research is relevant to Pacific County, offering insight into how industry clustering impacts wages and employment. Understanding these dynamics will be crucial to ensuring satisfactory wages and the overall success of the county’s marine industry clustering initiative.

Lagoudis, I., Madentzoglou, E. M., Theotokas, I. N., & Yip, T. L. (2019). Maritime cluster attractiveness index. *Maritime Business Review*, 4(2), 169–189.

<https://doi.org/10.1108/MABR-11-2018-0044>

This article talks about the creation of the Maritime Cluster Attractiveness Index, which is a theoretical framework to evaluate and compare marine clusters based on attractiveness. The attractiveness index itself is composed of four key categories which include policy and regulatory framework, institutional structure, man power, and tax and financial tools. The article then goes on to test the framework on one case study, which may be limiting, and breaks down the factors of each category in the attractiveness index. The article relates to our project because the Maritime Cluster Attractiveness Index may be used as a benchmark for the services cluster, as well as help to outline some goals. The framework is intended to be used globally, but typically marine services clusters are at a much larger scale and deal with shipping like the case study that is used in the article. This could be a potential drawback.

Zhang, W., Siu Lee Lam, J. (2017). An empirical analysis of maritime cluster evolution from the port development perspective – Cases of London and Hong Kong.

Transportation Research Part A: Policy and Practice, 105, 219-232.

<https://www.sciencedirect.com/science/article/abs/pii/S0965856417304998>

This study discusses symbiosis theory and Lotka-Volterra models, using those concepts as a framework to examine the evolution of maritime clusters. The research focuses on London and Hong Kong, two cities that have advanced maritime services. While London is already considered an established international maritime service center, Hong Kong is still progressing towards that point. This research paper illustrates that marine clusters with a port connection can also foster development in other sectors. This article is relevant to our project because it shows potential links between maritime services and other local industries for economic growth. One consideration of this research is that Pacific County's ports operate at a smaller scale than those in London and Hong Kong, and do not have as many international connections. This research comes from a peer-reviewed journal and its authors are experts in maritime policy.

Li, M., & Luo, M. (2020). Review of existing studies on maritime clusters. *Maritime Policy & Management, 48(6), 795–810.* <https://doi.org/10.1080/03088839.2020.1802786>

This article looks at the past 20 years of research surrounding maritime clusters, which can also be referred to as marine industry clusters. It discusses the ways that marine clusters can bring together resources and innovators, and help improve businesses operations and the economy. The reviews found discussions around factors for clustering, specific industries involved, research methodologies, and examples of established maritime clusters. This research can help inform our goals of bolstering the Pacific County marine services sector cluster by encouraging collaboration between businesses such as oyster farmers, marine services, tourism,

and more. It would also help us to focus on the needs of the local community and economy as opposed to some other articles which highlight international economic growth via port connections.

Chang, Y.-C. (2011). Maritime clusters: What can be learnt from the South West of England. *Ocean & Coastal Management*, 54(6), 488–494.

<https://doi.org/10.1016/j.ocecoaman.2011.03.005>

This article talks about the concept of maritime clusters, using Southwest England as an example of their potential economic and operational benefits. Similarly to the Li article, this study shows how marine clusters can bring about collective innovation, allowing different organizations and businesses to share resources. One key finding from this source is that it is important for marine clusters to facilitate collaboration between ports, research institutes and higher education. This article was published in *Ocean & Coastal Management*, which is a peer-reviewed journal that focuses on the sustainable development of oceans and coastal regions. The author, Yen Chiang Chang, is a professor and researcher at a maritime university. A limitation of this article for our research purposes is that it focuses on marine clusters at a larger scale than the ports in Pacific County. The marine clusters studied in this article are more established than Pacific County, so some findings might not be as applicable.

Shi, X., Jiang, H., Li, H., & Xu, D. (2020). Maritime cluster research: Evolutionary classification and future development. *Transportation Research Part A: Policy and Practice*, 133, 237–254. <https://doi.org/10.1016/j.tra.2020.01.015>

This article provides a critical review of existing literature on maritime clusters, offering a systematic framework to categorize research topics into three dimensions: descriptions of maritime clusters, their impact on regional and industrial development, and their formation and

evolution. The authors synthesize diverse scholarly perspectives on themes such as governance, competitiveness, and policy innovation, highlighting key gaps such as the lack of a consensus definition for maritime clusters and challenges posed by limited data availability. By identifying emerging research areas like disruptive innovation and global spillover effects, the study sets a forward-looking research agenda while addressing significant methodological and theoretical challenges in the field.

<https://www.sciencedirect.com/science/article/pii/S0964569111000287#sec1>

ENOW. (2024). *Economics: National Ocean Watch Explorer*. Noaa.gov.

<https://coast.noaa.gov/enowexplorer/#/employment/tourism/2021/53049/>

ENOW provides comprehensive economic data on six key ocean-dependent sectors: Living Resources, Marine Construction, Marine Transportation, Offshore Mineral Extraction, Ship and Boat Building, and Tourism and Recreation. This resource offers insights into jobs, wages, and gross domestic product (GDP) associated with these sectors at local, state, and national levels. ENOW is invaluable for researchers and policymakers aiming to quantify the economic contributions of coastal and ocean activities and assess their sustainability. This resource is critical to understanding the feasibility of maritime industry clusters, as it supplies empirical data on the economic weight and workforce capacity of maritime sectors.

Zhou, Y., Yuen, K. F., Tan, B., & Thai, V. V. (2021). *Maritime knowledge clusters: A conceptual model and empirical evidence*. *Marine Policy*, 123.

<https://doi.org/10.1016/j.marpol.2020.104299>

This paper discusses the concept of marine knowledge clusters (MKCs) and the impacts they have on maritime firms. The article explains that MKCs positively benefit businesses by enhancing economic performance, increasing collaboration, and promoting the sharing of

specialized labor and information. Another key finding from this source is that MKCs can have positive effects at the global level, and maritime companies should be encouraged to form partnerships with firms in other countries. This paper appears in *Marine Policy*, which is a peer-reviewed journal. Additionally, the authors are experts in the maritime studies field and serve as faculty members at Nanyang Technological University in Singapore and RMIT University in Australia. One potential shortcoming of this article is that the researchers' survey was only conducted within the context of Singapore's maritime industry. While the paper is more focused on theoretical aspects of MKCs, there still may be instances where the findings don't translate as well into the context of Pacific County's maritime industry. This document is helpful for our project because it provides an overview of MKCs and the benefits they can provide at local and global levels.

Marine Business Cluster Studies

The following case studies have been included in order to offer insight into contemporary marine cluster examples from a holistic lens. Two key examples were identified for this purpose, the *Iceland Ocean Cluster* in Reykjavik, Iceland, and the *New England Ocean Cluster*, in Portland, Maine.

The *Iceland Ocean Cluster* offers a compelling example of harnessing natural resources and innovative practices to create a thriving marine industry cluster. Central to Iceland's success is its robust integration of education, industry, and government policy, which has turned its marine sector into a cornerstone of the national economy.

Iceland's marine cluster is built around its fishing and seafood industries, which have been elevated through the use of advanced technology, sustainable practices, and coordinated research and development. The country's emphasis on innovation is supported by institutions

such as the Iceland Ocean Cluster, which acts as a hub for collaboration among businesses, research institutions, and startups. The cluster promotes resource efficiency, particularly through the "100% Fish" initiative, which aims to maximize the use of each fish caught by developing new products from byproducts like fish skin and bones.

Education has been another critical factor in Iceland's success. Universities and technical schools partner with marine-focused businesses to offer training programs and research opportunities tailored to the industry's needs. This creates a pipeline of skilled workers while fostering innovation through applied research. Iceland's ability to integrate high-tech solutions, such as data analytics for fisheries management and advanced processing technologies, further cements its marine cluster's competitive advantage.

Portland, Maine, has successfully adapted elements of Iceland's marine cluster model to revitalize its local marine economy, creating a dynamic and sustainable industry cluster centered on its maritime resources. The New England Ocean Cluster underscores the potential for smaller coastal communities to leverage innovation, education, and collaboration to enhance economic growth and resilience.

Drawing inspiration from Iceland's "100% Fish" initiative, Portland has focused on value-added processes to reduce waste and maximize resource use in its seafood industry. Local businesses have embraced advanced processing techniques and diversified product development, transforming byproducts like shells and fish skins into marketable goods such as supplements, fertilizers, and pet treats. These innovations have helped local firms stay competitive while contributing to sustainability goals.

Collaboration among local stakeholders is another hallmark of Portland's approach. Educational institutions, including the University of Southern Maine and Southern Maine

Community College, have partnered with marine businesses to offer specialized training and research opportunities. Portland has also benefited from public-private partnerships, with local governments and nonprofits supporting marine cluster development through funding and policy initiatives aimed at sustainable practices and workforce development. The Gulf of Maine Research Institute serves as a central hub for the cluster, mirroring Iceland's Ocean Cluster House. It facilitates connections between businesses, researchers, and policymakers, fostering a culture of collaboration and innovation.

For Pacific County, Portland's experience demonstrates the value of adapting global best practices like Iceland's model to local contexts. By prioritizing resource efficiency, fostering industry-education partnerships, and creating a collaborative ecosystem, Pacific County could emulate Portland's success in building a vibrant marine services cluster tailored to its unique assets and challenges.

Recommendations and Next Steps

Development of a Specialized Workforce

A key takeaway from our work is the importance of passing down technical skills to younger generations in order to maintain a strong workforce, particularly in more rural areas such as Pacific County. Keeping the marine services workforce consistent will regulate the market and keep the businesses going strong, disincentivizing said workers from having to leave to search for better jobs. Once high-skill jobs in a given sector cease to be filled consistently, the risk of an economic collapse goes up substantially—it is vital to maintain the technical skills required for things like boat services and oyster farming in Pacific County to ensure local work. Ensuring a proper labor force is also further exacerbated by the extreme seasonality of the work. The county should take measures to counteract this effect.

First, we recommend the building of a network with local community colleges or technical skill centers to create a strong connection between businesses and students; by providing students with strong experience and a foothold into a potential career, and by giving businesses a steady supply of potential employees, both parties benefit. This also gives colleges an improved capacity to understand the current job market, allowing curriculums to be updated to fill any potential gaps in learning. By adding new components to their curriculum, colleges better prepare their students for the workforce and businesses looking to hire will find a more competent pool of applicants. In the case of Pacific County, a simple step would be reaching out to Grays Harbor College and starting the conversation about what the college would like to see come out of the marine services cluster, what kind of support they might need, and how they could benefit the cluster.

Integration of Industrial and Non-Industrial Activities

Another recommendation informed by our research is the integration of industrial and non-industrial activities, which will be an essential part of encouraging stronger connections within the community and will ultimately strengthen both sectors. This can look like the creation of connections between industry and recreation, encouraging collaborations between industry partners and residents, and building pride in the aquaculture industry.

Based on our interviews and case studies, we recommend beginning research on potential connections between local businesses and the marine services sector. Additionally, it will be highly beneficial to develop strategies for identifying job opportunities for employees in seasonal work during the off-season as this will help to stabilize the workforce and increase economic resilience. It is also important to make sure to facilitate relationships between industry partners,

local residents and tribes, which helps build trust in the community and contributes to the longevity of all three groups.

Reinvigorating High School Education

Reinvigorating high school education in Pacific County is essential for strengthening local workforces and fostering a connection to the region's marine culture. Initiatives such as internships, summer programs, and Career Technical Education programs (CTE) provide students with practical experiences and career readiness. Collaborations with community colleges further enhance these efforts by offering a seamless transition from classroom learning to professional development.

It is also worth noting that it would be extremely advantageous to leverage community networking opportunities to strengthen these connections and transitions. Highlighted in this project's research was the work of Harbor Young Professionals and Entrepreneurs (HYPE) a facebook group that builds social capital through directly connecting maritime workers and business owners with each other and prospective entrants into the industry.

Moving forward, it is recommended that outreach efforts be expanded to engage local high school students, gaining insights into their career aspirations and interests. Facilitating connections between high schools, local businesses and community colleges will create a robust support network that bridges education and employment. These steps will ensure a pipeline of skilled individuals that will contribute and strengthen the county's marine service cluster.

Investments in Newer, Stronger Resources and Equipment for the Marine Service Industry

Another next step our team has identified is creating an inventory of existing infrastructure in Pacific County that could support marine clustering. This inventory could include information about current maritime businesses and services, as well as vacant properties

that could be remodeled. This database could be used to identify key services that are missing in the county. Additionally, it could help in defining the niche that Pacific County, and the four ports within it, serve. The inventory could be made in Excel, or on a digital mapping software like ArcGIS. One advantage of using ArcGIS, or a similar geographic information system (GIS) software is that it would allow for easier visualization of services and vacancies.

Conclusion

The Pacific County Marine Services is a potential example of how the transformation of aligning the avenues of industry, education, and community could create a thriving, sustainable economy. Throughout this project, which included engaging with the stakeholders through interviews and surveys, as well as case study analysis from other successful examples in both the local area and the global landscape, our team has identified critical needs and opportunities for this area. Ultimately, this ranges from functional improvements like core infrastructure investment and marketing to visionary future improvements like fostering collaboration between local businesses and educational institutions for workforce opportunities.

To specify our key recommendations resulting from our findings and research, this includes creating and strengthening industry-education partnerships to cultivate this skilled workforce necessary to revitalize the industry, addressing infrastructure gaps to support marine services in a practical and efficient way, and utilizing Pacific County's unique cultural identity to attract investment. In addition, these strategies could be used to build a robust marine services industry cluster that could not only revitalize the local economy but also preserve the county's historical and cultural legacy for potential recreational and tourism benefits.

However, the success of these initiatives depends on efforts from a lot of different angles, including stakeholders, the community, and potential external support. Collaboration, flexible

thinking, and a shared vision will ensure that Pacific County's marine services sector curates to become an example of both sustainable economic growth and community pride. By continuing to adapt and refine these strategies, Pacific County will have the opportunity to emerge as a leader in marine industry development, a bustling rural economy, and an example of a successful collaboration between education and industry, setting a standard for other regions to follow.

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Appendix I: Unedited Interview Notes

Darrin Raines

Date: 11/19/24

CEO of Greater Grays Harbor Inc.

General questions:

1. What is the role of your business or organization in the Pacific County marine services sector?

Summary: The Grays harbor econ development council helps to promote any industry work in the county and has the ability to advocate for any industries that provide jobs.

2. What resources or services would be most beneficial for your organization if they were available within Pacific County?

Summary: They get a lot of support from the Department of Commerce which they can use to help the maritime business industry. They get the services from the government, such as workforce training, and then distribute them.

3. Are there any concerns you have about the potential development of a marine services cluster in Pacific County?

Summary: No concern, it will be a critical industry that will help pacific county grow all along the bay and river. The development of this area is crucial for the future of the economy.

4. How do you see local education fitting into the marine cluster?
 - a. Is there a way you see education collaborating with your organization?

Summary: They work very closely with Grays Harbor community college and it would be a great program to help within the industry as they need the formal training that Grays Harbor can offer.

Stakeholder specific questions:

1. As someone with a lot of experience in economic development, what do you see being the main economic driver of this proposed marine services cluster?

Summary: The proximity of the bay and river to open water creates much opportunity for shellfish, seafood, and shipping. Need more assistance with advocacy and training.

2. How can you see the port of willapa harbor and proposed marine cluster fitting into the bigger picture within pacific county. Economically

Summary: It could be the heartbeat of Pacific County, much like the timber industry, and everything could blossom out from there, especially concerning jobs and the economy of the county.

Key Takeaways:

- They Grays Harbor Economic Development Council helps advocates for industry
- Get support from the Department of Commerce
- Distribute Government services(trainings)
- Already work closely with Grays Harbor Community College
- Proximity to open water creates lot of opportunities (shipping potential)
- Could be heartbeat of PC

David Beugli

Date: 11/22/24

Executive director of WGHOGA

Willapa Grays Harbor Oyster Growers Association

General questions

1. What is the role of your business or organization in the Pacific County marine services sector?
 - a. How would you like your business or organization to be involved with the development of a marine services cluster?

Summary: WGHOGA is a non-profit that is funded by grant dollars. David deals with permitting issues, infrastructure, promoting industries, and advocating for their needs. Work with companies such as south bend boats, where they made a request and secured for the funding for its purchase

Followup: Talk more about haul outs and their significance?

Summary: Haul outs currently can only happen in south bend boats and that was made in the 30-40's and it is an over water structure. There is a need for a newer, larger, and more functional haul out and the organization will work with the port to secure the funding for that haul out. They need the new haul out near part retailers, and open, and inclusive workspace for specialists.

2. What resources or services would be most beneficial for your organization if they were available within Pacific County?

Summary: There is a need for all basic ship maintenance in a centrally located, common shipyard where there can be welders, fabricators, boat designers, diesel engine mechanics, and prop workers.

3. Are there any concerns you have about the potential development of a marine services cluster in Pacific County?

Summary: The biggest concern is cost of entry, housing, and the current infrastructure. Also the need for more regulated containment systems for boats so that they can follow regulations.

Internships are lacking as well, the older gen is phasing out and their expertise has not been passed down so they will not be replaced

4. How do you see local education fitting into the marine cluster?

a. Is there a way you see education collaborating with your organization?

Summary: They work with Sea Grant and they are the largest part of education outreach currently. They also work with MERTS in Oregon but afterwards most people do not stay in the area.

Followup: Would it be beneficial if a program is in the area?

Summary: A need for a brand new system is not necessary, more so just need better promotion and then have the infrastructure for people to work locally afterwards. There is much opportunity for work, it just needs to be organized and promoted. Some things like contractors or consultants are also work opportunities. It is all about getting the people to run things.

Stakeholder specific questions:

1. How has WGHOGA managed stakeholder relationships with other marine-based industries, and what insights could be valuable for building a more integrated marine services sector?

Summary: They look at their needs and their stakeholders' needs and look for how they can collaborate for a stronger ask when they go in together on a request. This includes coordinating letters of support, and coming up with a needs assessment. They get a good outlook on the industry as a whole.

2. Have you heard of any good ideas for expanding alternative use for oysters or byproducts of oyster farming that we should explore?

Summary: Surplus shell, recycling plastics.

3. General integration of the services sector into the county?

Summary: There are two different ports in the area and neither has everything that is needed. There is a lot of issues for demand with limited capacity into the ports as well which creates long waits. Most specialty workers are mobile based right now, which is fine for the west side, it is more remote, but a more permanent infrastructure in an area like south bend. Mostly experienced workers are in the specialty fields and there are no replacements in the workforce.

Key Takeaways:

- Work with and support businesses to assess their needs and secure funding so that they can meet those needs.
- Huge need for a haul out.
- Should be near part retailers, and open, and inclusive workspace for specialists.
- Need for all basic ship maintenance in a centrally located, common shipyard
- Welders, fabricators, boat designers, diesel engine mechanics, and prop workers.
- Concern for housing, working infrastructure, and cost of entry
- Remote specialty workers is fine for west side, but permanent, central infrastructure is needed
- The older generation has not passed down expertise due to lack of internships, when they phase out their work will be hard to be replaced
- Work with sea grant and MERT in oregon
- Need to promote MERT program better and create infrastructure for work afterwards
- contractors/ consultants are work opportunities

- Look into recycling plastics
-

K.C. Johnson

Date: 11/14/24

Superintendent of Raymond School District 116, originally from Raymond

General questions:

1. How do you see local education fitting into the Pacific County marine services cluster?

Summary: Had a tridistrict program with Valley, Raymond, and South Bend. Where they had aquaculture classes which were popular. They had a joint CTE program where they put a million dollars into the port where they had welding, plumbing, and other CTE classes. Budget cuts took those away. They also used to have a Sea Scouts program where kids had the opportunity. There are also many Chinooks in the oyster industry with a long history there and it could be good to see how they can get involved as well.

2. What resources or services would be most beneficial for the school system if they were available within Pacific County?

Summary: Opportunities to learn a trade skill. Could learn aquaculture, the oyster business, willapa hatchery, possibly lead students through the process of starting their own farm.

3. Are there any concerns you have about the potential development of a marine services cluster in Pacific County?

Summary: Pacific County was known as the Oyster Capital of the World, would like to see that culture make a comeback and really flourish. The community is slowly coming back to life and this is an opportunity for growth.

4. What is the role or potential role of the school district in the Pacific County marine services sector?

Summary: Can see them as partners. Would like to offer CTE credits, possibly collaborating with the south bend school district, they have in the past and could get a teacher that could lead the program for both districts.

6. Do you feel as though the local community would be interested in opportunities within the marine service sector?

Summary: It would be a big deal for the community, especially if they bring back CTE programs. They have a lot of the existing tech needed for it to come to life and they have invested in it in the past. They are wanting Grays harbor college to join at some point and could possibly offer adult classes in the evening and there would likely be interest in both adults and children.

Key Takeaways:

- There used to have CTE courses and opportunities for students to be involved with the industry, budget cuts took it away
- Used to be collaboration on these programs with south bend and valley
- Wants to see Chinook involved
- Want to see opportunities to learn a trade for the kids.
- Would like to see the culture of the Oyster Capital of the world make a comeback and really flourish.
- Would like to partner with the marine cluster and offer CTE credits
- Very open to collaboration with south bend and grays harbor
- They have a base in tech from previous investments
- Possible to offer adult classes at night for grays harbor.

Jim Sayce

Date: 11/15/24

Manager - Port of Willapa Harbor

- Role of business in the marine services sector is to provide moorage, dock access, repair facility for boats
 - Moorages are where boats are launched/moored
 - Services like dock or heavy truck access are related
 - Think of marine services as recreational and commercial side
 - Tokeland basin serves both
 - South fork industrial park serves mostly commercial
 - Main dock serves both large and small vessels
 - Bendickson mostly oyster/commercial vessels
 - Tokeland about 80% commercial
 - Anchor boats, transfer product over water moorage
 - Repair side is south bend boat facility
 - Does not build boats
 - Could be complex as major hull welding/wood repair
 - Could be regular annual maintenance like repairing props/checking
 - This facility pulls up to 65 tons and 65 feet long
 - Typical oyster harvester about this size
 - Repair isn't like going to dry dock or transporting boat out of water
 - On a traveling system that pulls boat out of water
 - Repairs usually quick, often less than a week but major hull reconstruction may take more than a month

- Technical skill in-county is lacking for computer engine management, electronics reconstruction, mapping systems, machine tools for turning shafts or replacing bearings, unable to rebuild hydraulic pumps
 - Receive report by SeaGrant identifying what is needed, machine tooling is lacking
- Operated like parking lot with good gas station, most regular fixes are possible and efficient
 - More sophisticated repairs are outsourced to Tacoma, Pierce County, Seattle, Oregon, Clark County, Astoria, etc. because skill level is not present in Pacific county
- Good services for “maintaining the fleet”, 60-70 vessels for annual maintenance

Short or long term?

- Short term is usually hull maintenance like repainting and cleaning to make boat more efficient and safe
 - Zinc repair another annual maintenance,
 - prevents rusting on hull of metal boats,
 - zinc on propulsion system, protects shaft and prop from falling into disrepair
 - Navigational repair, keeping rudder from corroding
 - Associated repairs like fixing and re welding cracks
 - Wood boats only 10%, rest are metal, fiberglass or steel
 - Wood takes more time and wood is more difficult to source
- Power systems, major repairs
 - e.g. pulling engines out and replacing, 4-5 days and specialists required
- May not do major hull repairs involving fuel tanks
- Electronics done by contracted outsourced labor

- Components are sometimes removed and shipped to another firm to be repaired, Willapa harbor removes them
- Jet drive repairs are common, require regular maintenance
 - Packaged unit taken out and repaired

How do you see your org involved in the development of a marine services cluster?

- Trailer towable boat, 1-6 tons is a growth sector
 - Stored out of water, no moorage fees, can be repaired in a garage
 - Facility for sale in south end of county, businessman expressed interest in using this space to do engine repairs, currently developing business strategy for this
- In 50 mile radius, about 24-30 boat launches in misc spots like parks, ports
 - This market needs high quality services that are dependable, including outboard repair and trailer repair and often requires certified mechanics by the companies
 - BIG potential sector to expand upon
- High quality restoration of wood vessels another place to expand, may even bring in wood boat owners coming in from far away because services are so good
- Oyster market is stable but ultimately lacks growth
 - Power barges are growing?
- Check to see wooden repairs in Seattle, see how much competition there would be
- Currently able to pull boats quickly in repairs, get boats back in water in matter of hours in certain cases

Anything else to share or know for the project?

- Future may involve marine services robots?
- Marine services also dredging services, very unique services to dredge basins out; very costly thing to do including dredge, pipelines, service boats, etc
- Potential marine services market is Bendickson high dock
 - Identified this spot as a potential service site for “above the water line work”

- If you want to rebuild the wheelhouse, can just have crane reach over and make changes with boat still in the water, can serve very large boats
 - Winches, electronics, cranes, engine management systems, are services that could be performed here
 - Site could likely be improved upon
 - Moorage site could be pre-staged and queued at Bendickson for south bend work
 - Later down the line, acquiring more property could put in marine travel lift, complementary to South Bend boat shop
-

Kevin Decker

Date: 11/14/24

Coastal Economist at Washington Sea Grant

1. Given your experience with marine spatial planning, how do you think a service cluster approach could help streamline or enhance resource management on Washington's coast?

Summary: A marine service cluster is more of a stationary project in a fixed place while marine spacial planning is more fluid. Could be a conflict of interest for industries that move through vs. those that are fixed as they would be competing for spaces and access. On the other hand, they could come together and speak out on certain issues such as environmental concerns, in which case they would be stronger together.

2. In your experience, how valuable are local networking groups for the growth and resilience of a marine services cluster? Are there similar opportunities for building social capital here in Pacific County?

Summary: Staying connected with local people can foster a mutually beneficial exchange in knowledge and create a support system that benefits the industry. Local representation and local voices will be best suited for addressing local needs and issues. They can also be a good way to maintain communication between similar and adjacent industries so that they can find shared interests, resources, and opportunities.

3. In your experience advising Grays Harbor and Pacific Counties' Marine Resource Committees, what are some key economic challenges and opportunities specific to the marine sector in this area?

Summary: There are a lot of low-skill, low-wage jobs that are not being filled locally, which creates a demand for migrant workers to fill these positions. On the other end, there are highly skilled, highly specific jobs that are also difficult to fill because of their difficulty, such as welders, divers, and mechanics. These jobs are very labor intensive, potentially dangerous, and require a lot of time away with inconsistent hours. With the industry being so difficult to work in, it is hard to maintain a workforce to sustain the industry. "Grain of the fleet" is another problem. Essentially, commercial fishing is a hard industry to get started in. You have to buy a boat, buy the gear and the bait, find and pay deckhands, and find and pay for a quota in your fishery of choice, all before you can start to make money. For aquaculture, there are only so many tidelands available, causing a constraint on resources. The seasonality of the industry is also a problem; people are only there for a certain amount of time in the season.

4. How do you envision local education and existing facilities/resources playing a role in the development of a marine cluster in Pacific County?

Summary: Some schools have a marine-focused curriculum, which teaches marine-focused skills but through a different lens. There are Training programs out there, and Jess is looking at the

pipeline into marine industries. One of these is the Sea Fair program. Trying to get people's hands-on experience is best so that you can see the reality of the industry. It is also important that pathways counselors are knowledgeable about the specifics of the industry so that they can help people interested. There are currently limited formal education opportunities and no Fisherman programs, which would be helpful for people to get experience and foster interest in the field. There are a lot of opportunities for apprenticeships.

5. Are there case studies or similar initiatives you've encountered that exemplify effective clustering or community-based economic development within marine and coastal settings?

Summary: Clusters are a lens for looking at something. We have to really define what we are looking for to better search for case studies. Anytime resources are pumped into something, you will get some sort of positive outcome. The marine economy is tricky because of many different factors and a lot of consolidation. You also have the tribes as Co-Managers to consider as well. The marine industry as a whole is in a general decline. This is because of the consolidation and capital-labor substitution. You are getting fewer and bigger boats with fewer people employed overall that can stay out longer and catch more fish with fewer people servicing the boats. This causes small local marine clusters to struggle to stay afloat because these bigger boats need even more specialized care and are migrating towards larger, more urban areas where that care can be provided. Willapa Bay 's identity is built around fishing and aquaculture, and it is important to maintain this culture and identity. One of the bigger picture questions is whether or not it is worth it to maintain these local industries, and Kevin says that it is. Hanging onto a sense of identity and peacekeeping is crucial, especially for the local economy, as tourism and recreation

are kept alive by keeping these identities alive. If you lose the industry that supports the identity, the whole community starts to fall apart.

Key Takeaways:

- Local representation and local voices will be best suited for addressing local needs and issues.
- Could be a conflict of interest for industries that move through vs. those that are fixed as they would be competing for spaces and access
- Need to fill both low skill and high skill jobs
- Grain of the fleet (Barriers of access to the industry)
- Need to maintain a workforce to maintain the industry
- Industry is highly demanding on the body.
- limited formal education opportunities for the industry
- Hands-on experience is best to see the reality of the industry
- Need to foster interest
- Opportunities for apprenticeships
- Tribes are Co-Managers
- Capital labor substitution
- Marine industry as a whole is in decline
- Need to maintain the identity of the place
- Placekeeping

Tracy Lofstrom

Manager - Port of Ilwaco

Date: 11/8/24

- Role of business or organization:
 - Commercial, recreational, sport, & charter fishing
 - Tourism!
 - 1 seafood processor
 - A couple of restaurants and art galleries
 - 2 hotels
- What resources or services would be beneficial:
 - Money!
 - Need funding for dredging maintenance
 - In the past things haven't been maintained as well as they could of, which makes maintenance costs even more expensive
 - Would be nice to have more property like Westport does
- Jurisdictional constraints that limit the Port's expansion:
 - Zoning not too much of an issue, didn't mention coast guard presence as an issue
 - Permitting process is horrible
 - Port cares a lot about sustainability, but some of the rules & regulations make it difficult to expand
 - Permitting process has to go through 6 different entities
 - Since covid the permitting process has gotten even slower
- General thoughts on marine services cluster:
 - Loves the idea of the ports working together more

- Doesn't want to the Port of Ilwaco to lose clients to other seafood processors (sees this more of a current issue, not necessarily something that would be caused by a marine services sector)
- Could be nice to have ports specialize in different things
- Wants Port of Ilwaco to still be self-sustaining
- Other notes:
 - Seafood processor
 - Would like to see another seafood processor at the port
 - Current seafood processor isn't as busy as it used to be, unsure of exact reason why, not necessarily covid related
 - Current processor takes in different types of seafood than it used to
 - Dredge spoils currently take up good areas at the Port
 - If removed, could be replaced with something more beneficial to tourism, like a hotel
 - Recently applied for RCO grant, but did not get funding
 - Told application was too related to commercial fishing, not enough emphasis on recreational fishing
 - Several properties are vacant and undergoing remodeling
 - Remodeling process taking a couple of years
 - Ilwaco landing (seafood processing facility) burned down earlier this year (Jan 2024)
 - Need for more seafood processors

Appendix II

List of stakeholders provided by Sue and Kelly that our team was not able to contact due to time constraints:

- Carli Schniffner (President of Grays Harbor College)
 - Email: carli.schiffner@ghc.edu
- Chinook Marine Repair
 - Phone:(360) 777-8361
 - Website:Chinookmarine.com
- Derek King(Shoalwater Bay Tribe Seafoods Farm Director)
 - Phone: (360)-268-7613
 - Website: [Shoalwater Seafood | oysters](#)
- Eric Petit (Port of Willapa Harbor Commissioner)
 - No contact information available
- James Hovis (Department of Ecology)
 - Boatyard general permit writer
 - Email: james.hovis@ecy.wa.gov
 - Phone: (564)-999-3244
- Jessika Tantisook (Member of the Economic Recovery Corps)
 - Spent five years as Executive Director of the nonprofit North Coast Food Web
 - Recommended by another stakeholder
 - Linkedin: [jtantisook](#)
- Kathleen Nisbet Moncy (Goose Point Oysters)
 - Email: kathleen@goosepoint.com

- Kurt Englund (Englund Marine)
 - Email: kenglund@englundmarine.com

The following stakeholders have been identified as pivotal collaborators in efforts to design and sustain a successful industry cluster. Their expertise and insights will play a crucial role in fostering innovation, driving economic growth, and ensuring the long-term viability of the cluster:

- Chinook Indian Nation
 - Email: Office@ChinookNation.org
 - Phone: (360) 875-6670
 - Website: Chinooknation.org
- Jovon Vaughn (Executive Director of the Willapa Harbor Chamber of Commerce)
 - Useful to understand needs of other industries and businesses. Can also help uncover other stakeholders that could be supportive of the mission of the PCEDC.
 - Email: info@willapaharbor.org
 - Phone: (360) 942-5419
- Lester Burkes (Dean of Trades, Transportation, and Apprenticeship at Clover Park Technical College)
 - Although CPTC is outside of Pacific County, interviewing Lester could still provide insights into how the school of trade connects with local businesses.
 - The School of Automotive and Trades at CPTC offers a welding program, which is most relevant to the services needed in Pacific County.
 - Email: <https://services.cptc.edu/directory/form.aspx>
 - Phone: (253) 589-5771

- Martin Fujishin (Director of Enology and Viticulture at Walla Walla Community College)
 - Program referenced in case study
 - Useful to understand connected between education and industry
 - Email: martin.fujishin@wwcc.edu
 - Phone: (509) 524-5170

Patrick Arnold (Co-founder and CEO of the New England Ocean Cluster)

- Interviewing Patrick could provide context for how the New England ocean cluster developed, and the steps they took to establish collaboration with the university of southern maine
- LinkedIn: [LinkedIn](#)
- Safe Coast Seafood (Port of Ilwaco)
 - Largest employer in Ilwaco and they state that they are “a hub of economic activity in the community”
 - Company email: info@safecoastseafoods.com
 - Company phone: (888) 909-6889
 - Website: <https://safecoastseafoods.com/about-us/>
- Martin Fujishin (Director of Enology and Viticulture at Walla Walla Community College)
 - Program referenced in case study
 - Useful to understand connected between education and industry
 - Email: martin.fujishin@wwcc.edu
 - Phone: (509) 524-5170