

# SWOT Analysis

This chapter synthesizes the findings from the previous chapters and community engagement efforts to identify the region's strengths, weaknesses, opportunities, and threats across various forms of capital (human, intellectual, social, physical, natural, and financial).

## SWOT Methodology

The RRRISE research team utilized a mixed-methods approach to assess the region's strengths, weaknesses, opportunities, and threats (SWOT). Employing a "concurrent nested approach" in this analysis, Collaborative members sought to ground-truth quantitative data via feedback from community members obtained during data walks. In addition, they conducted semi-structured interviews ("listening sessions"), a participatory SWOT exercise, and the aforementioned two rounds of surveying.

In total, SWOT data sources used for this analysis are:

- 1 Participatory SWOT exercise with Redwood Region RISE Collaborative members:** 50 members participated in person (Ukiah Conference Center, 9/16/23) and 71 other participants via Zoom.
- 2 Listening Campaign:** 144 participants<sup>156</sup> engaged in semi-structured, multipurpose conversations focused on key priorities, challenges, opportunities, partnerships, and interest in engaging with California Jobs First. Participants were from a broad range of organizations and sectors. In semi-structured interviews ranging in length from 30 minutes to two hours, conversations gauged perspectives on strengths, weaknesses, opportunities, and threats, focusing on topics driven by respondents' interests and priorities.
- 3 Surveys:** Two surveys were conducted in 2023, one during March–June 2023 (n=107) and the other during July 2023–May 2024 (n=161) that sampled from both Collaborative partners and the broader community, querying respondents on their priorities, challenges, and aspirations for the Collaborative. (Results from these surveys are reviewed in depth in the Partner Mapping report.)
- 4** Data found in other sections of Regional Plan Part I were synthesized and ground-truthed via community data walks (see Figure 8.1).

To better understand causal relationships and to ground-truth early quantitative findings, the RRRISE Collaborative held virtual monthly data walks and presentations, 11 in total, exploring the themes presented in Figure 8.1 below.

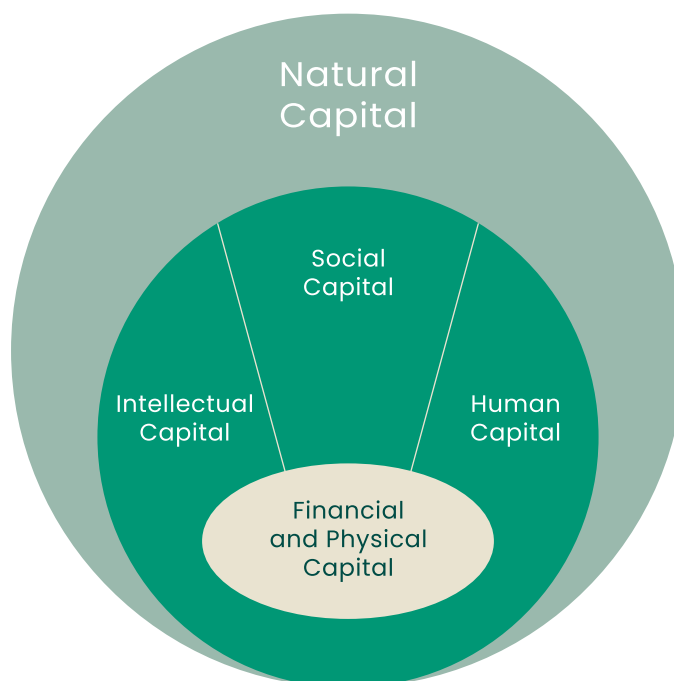
<sup>156</sup> An additional 355 listening sessions were completed with community residents; however this work was not completed in time for the SWOT analysis. See the Insights Report for more information.

Figure 8.1 Monthly Data Walks and Presentations

Data Walk/Presentation Theme	Collaborative Attendees
1. Demographic trends	73
2. Economic development inequities in the region	56
3. Public health	57
4. Employment and childcare data	112
5. Industry cluster and labor market analyses	87
6. Climate vulnerability and adaptation	107
7. Data review & Participatory SWOT	117 (50 in-person/ 67 over Zoom)
8. Workforce barriers and participation	107
9. Regional Summary and Barriers to Thriving	144 (in-person)
<b>Other Presentations and Trainings</b>	
Centering equity in economic development planning	117
Tribal ecorestoration	123
Cradle to career pathways	119

To provide structure to the analysis, RRRISE researchers used a composite framework loosely derived from different versions of the popular Five Capitals framework (Figure 8.2 ).<sup>157</sup>

Figure 8.2 Five Capitals Framework for Sustainability



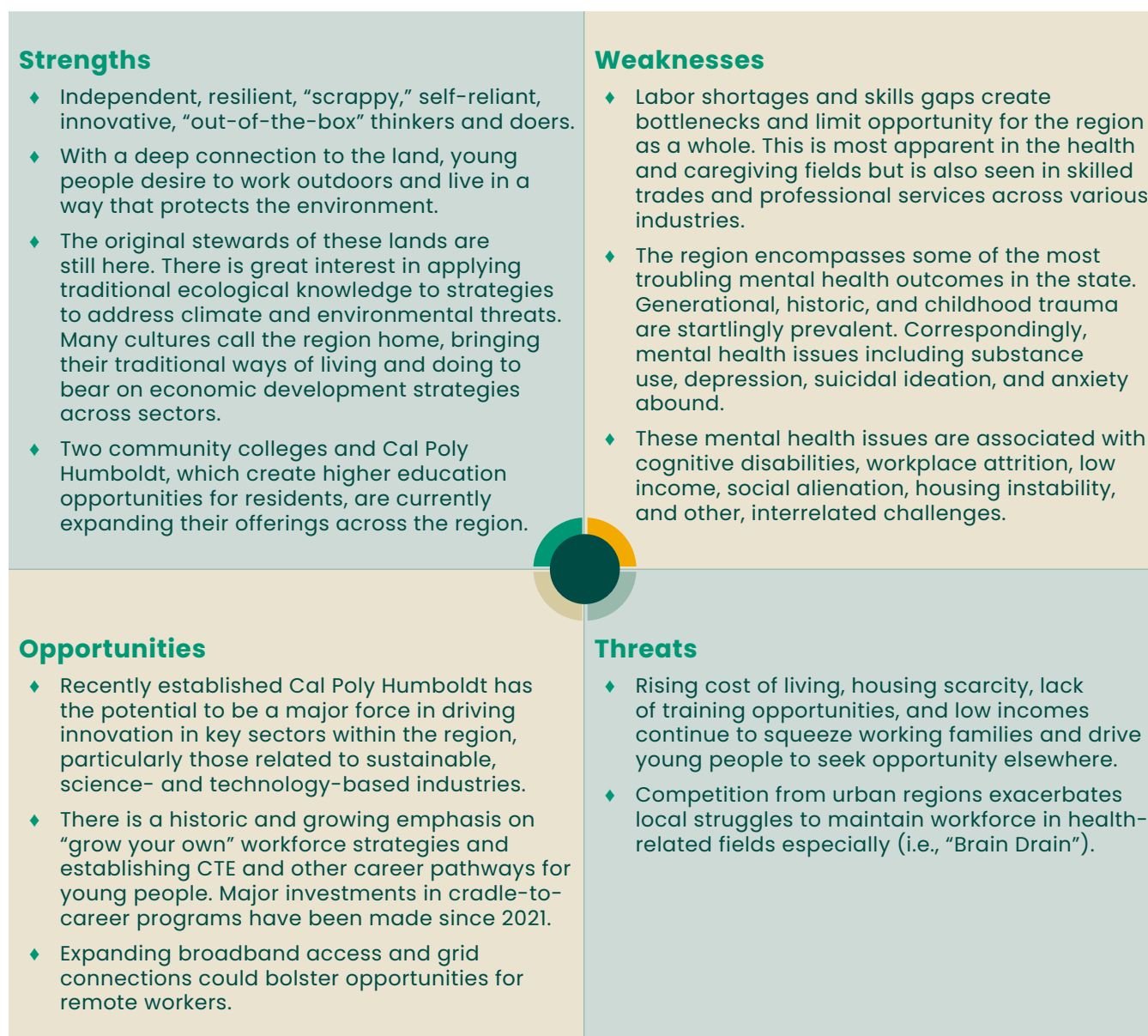
<sup>157</sup> See, for example, Maack, M. and Davidsdottir, B. (2015). Five Capital impact assessment: Appraisal framework based on theory of sustainable well-being, *Renewable and Sustainable Energy Reviews*, Volume 50, 2015, Pages 1338–1351, ISSN 1364-0321, <https://doi.org/10.1016/j.rser.2015.04.132>.

## The Region's Strengths, Weaknesses, Opportunities, and Threats

### Human and Intellectual Capital

Community members celebrate the independent spirit of the North Coast, noting the cultural richness, “scrappiness,” and deep connection to the land and environment. However, an aging population, brain drain, lack of opportunity for youth, and skilled workforce shortages were pain points brought forward in listening sessions. Better channels to connect young and marginalized people to their aspirations are all desired. In particular, creating opportunities for fulfilling careers in environmental fields is seen as a way to celebrate the traditional ecological knowledge held in the region by tribal cultures, diversify away from natural resource extraction, and uplift eco-innovation, which is a strength of local educational institutions and entrepreneurs.

Figure 8.3 SWOT Analysis – Human and Intellectual Capital



“We need to address two things: the shortage of educated individuals and the scarcity of positions that don’t require extensive education.”

## Workforce Shortages and Skills Gaps

Workforce shortages are prevalent in the region. Exacerbating these is a lack of access to training within the area. Higher education attainment lags behind the rest of the state, contributing to an unprepared workforce having few advanced skills (though high school graduation rates are higher than state averages). Those with the highest education and in the highest skilled occupations face the widest wage gap.

“I feel like in some ways there could have been a mentor or something like that, like to meet with you and see how you’re doing and see if you need help or what you need help to further you in your career.”

“All the [employment] support came from people I know and less from any kind of system.”

“I’m in the under-employment tango.”

With respect to prospective industries such as offshore wind and aquaculture development, preliminary data analysis indicates that labor shortages for occupations like electricians and construction workers number in the 1,000s. Listening session participants often emphasized “grow your own” workforce strategies that would enrich and expand training opportunities existing within the region rather than increasing access to external programs, which are viewed as a source of attrition of regional workers, particularly in the trades occupations.

“When they are doing their training they can make more money in places like Santa Rosa, so they don’t come back.”

**Medical and Caregiving Occupations.** Shortages of medical personnel in virtually every specialization and profession within the region are acute—primary care, specialists, behavioral health, dental, and more. While pathway approaches are being created and strengthened, the struggle to retain recruits is problematic. A recent report on the region’s behavioral health workforce noted that 1,900 individuals are currently employed, 950 short of the number required to meet the region’s mental health and substance use treatment needs.<sup>158</sup> Additionally, 990 behavioral health workers are anticipated to leave the field in the next five years via retirement, career change, or outmigration. The region produces an average of 89 registered nurses (RNs) annually, slightly below the projected 99 RNs needed per year. However, an average of 31 licensed vocational nurses (LVNs) do graduate each year, meeting the forecasted demand. Community colleges (CR and MC) graduate an average of 21 dental assistants annually, which is only half of the 42 openings projected per year, indicating a significant gap in training. From 2022 to 2027, the Redwood Region is projected to require an additional 485 mental and behavioral health professionals annually to replace retiring workers and address unmet needs. Current graduation rates from Cal Poly Humboldt are insufficient to meet

<sup>158</sup> 2023 North Coast Behavioral Health Workforce Needs Assessment.

this demand, with an average of 50 students in social work, 11 in counseling psychology, and eight in school psychology at the master's level (See Chapter 7, Labor Market Analysis).

"I took a major pay cut because they were only hiring entry level... I decided it was worth it because I had no other option besides leaving here. So, I took a \$20,000 pay cut..."

In the Redwood Coast, the scarcity of accessible childcare has become an acute concern for many families, posing significant challenges for parents balancing work and caregiving responsibilities. Approximately six out of 10 do not have access to certified childcare facilities due to the lack of available space. This situation is more pronounced in Lake and Mendocino Counties, with seven out of 10 children lacking access. Residents have spoken out about their difficulty finding a licensed provider and have reported that, if they cannot find childcare, they leave their children with a relative or bring them with them to work.

**Career Technical Education and Career Pathways.** Over and over, Collaborative members expressed anxiety that the region is not a place of opportunity for young people. Participants in listening sessions noted insufficiencies in skills building, career technical education, and workforce development in high schools that cause local educational institutions to not adequately prepare students for the workforce, especially industries of the future.

"There needs to be more work readiness... A lot of high schools around here don't have those programs that really uplift kids to have trade skills that they want to go into."

Projections indicate a need for 203 new teachers annually across elementary, middle, and high school levels, but Cal Poly Humboldt graduates an average of only 96 teaching-credentialed students yearly. In Del Norte County, 100% of newly hired teachers are teaching at least one subject without the necessary certification, while in Mendocino County, the figure is 48%, significantly higher than the state average of 34% (from the Labor Market analysis).

The region's demand for teachers in specialized fields such as special education, mathematics, science, bilingual, and career technical education is high. However, credentialing output is low, with an average of 24.8 graduates per year in special education, 4 in mathematics, 7.2 in science, and only 0.2 in career technical education over the past five years.

Alongside critical labor shortages, these trends signal an opportunity for the region. Expanding career technical education (CTE) was a recurring theme offered by residents, and some momentum is growing to establish K-16 and other cradle-to-career programs in the region. Increasing trade and vocational training opportunities and apprenticeships are seen as a two-pronged strategy aimed at retaining young people in the area. Partners from building trades careers noted that, in the past, local high schools had hands-on learning opportunities in the local high schools, and many have the infrastructure necessary to revive that curriculum. However, respondents from both Del Norte and Humboldt Counties noted that finding instructors to teach CTE classes caused high schools to abandon these programs. Tribal members expressed support for creating training centers, especially for heavy equipment operators. (One such center is proposed for the Orick area with the Yurok Nation in the lead.)

"I would hope for a community center with classes so people could learn... including life skills."

The region's community colleges may need more training capacity for skilled trades. For example, the EDD projects an annual need for 91 carpenters, but, over the past five years, an average of only 13 students have graduated with carpentry qualifications from the region's community colleges (sourced from the Labor Market Analysis above).

## Innovation and Technology

"If you have tech innovations developed and applied locally it helps support the local workforce, and if they can be exported then it helps the economy grow."

Figure 8.4 Innovation Index Ranking Among Similarly Rural U.S. Counties

	Del Norte	Lake	Mendocino	Humboldt	
Headline Innovation Index	670	323	192(T)	102	Headline Innovation Index
Business Dynamics	536(T)	132	394	170	Establishment Dynamics
	652(T)	170	312(T)	196(T)	Business Dynamics
	719(T)	265	229	278(T)	Establishment Formation
Business Profile	183	288(T)	6(T)	219	Proprietorship
	434(T)	507	22(T)	65(T)	Business Profile
	463	463	83	83	Venture Capital Dollar Measures
	463	463	116	122(T)	Venture Capital Count Measures
	526	526	230	228(T)	Foreign Direct Investment Attractiveness
Economic Well-Being	353(T)	89	82(T)	265(T)	Compensation
	340	401	435(T)	176(T)	Residential Internet Connectivity
	643	543	402	352(T)	Economic Well-Being
Employment and Productivity	362(T)	171	152(T)	261	GDP
	542(T)	172(T)	209	226(T)	Patents
	522(T)	257	251(T)	232(T)	Employment and Productivity
	70	666	87	790(T)	Industry Cluster Performance
	770(T)	635	428	317(T)	Industry Performance
Human Capital and Knowledge Creation	446(T)	135	131	5	Educational Attainment
	580(T)	259(T)	426	77	Human Capital and Knowledge Creation
	761	764	250(T)	186(T)	STEM Education and Occupations
	660(T)	518(T)	626	335(T)	Knowledge Creation and Technology Diffusion

Rank / 805	<span style="background-color: #008000; color: white; padding: 2px;">Top 25% (Strength)</span>	<span style="background-color: #d3d3d3; color: black; padding: 2px;">Middle 50% (Fair)</span>	<span style="background-color: #ffcc00; color: black; padding: 2px;">Bottom 25% (Weakness)</span>
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Note. Data sourced from StatsAmerica. For each indicator, the Redwood Region is ranked out of 805 U.S. counties with similar Indices of Relative Rurality (IRRs) compared to that of the Redwood Region.<sup>159</sup>

<sup>159</sup> This includes counties with  $0.5 \leq \text{IRR} \leq 0.53$ . [REF]

In 2023, the region’s only four-year university became the state’s third polytechnic—Cal Poly Humboldt. Residents associated this development with possible upskilling of the region’s workforce and also with attracting “new minds” to it. Many Collaborative members wanted to see Cal Poly, particularly its applied science departments, create more positions for students in the community, through, for instance, hands-on learning and apprenticeships. Participants also suggested creation of opportunities to create stronger pathways for students connecting Mendocino College, College of the Redwoods, and Cal Poly Humboldt to emerging industries. They also expressed optimism about the University’s expansion, the new opportunities to commercialize ideas that will result from research conducted there, and possible leveraging of its innovation engine to benefit the region as a whole. The Education Services, Health and Social Assistance, and Leisure and Hospitality sectors are expected to account for nearly two-thirds of projected job growth over the current decade (see the Labor Market Analysis section).

## Mental Health and Well-Being, Soft Skills Development

The mental health and well-being of the region’s residents are both a product of the area’s shortfalls in providers, workforce, training and a cause. Among both economic development planners and community members, concern is mounting about a potential epidemic of mental health issues and their comorbidities, which can result in disability and attrition from the workforce. Shortages of providers and facilities to provide intervention and care are barriers to better outcomes within the region. According to Collaborative members, other issues which inhibit residents from accessing the supports they need include: siloed provider networks, transportation barriers, fear of the stigma attached to pursuing mental healthcare within small communities, and complexity when trying to navigate a fragmented system of care.

“One field that is lacking in support is mental health. My studies were heavily impacted by mental health.”

Workforce development partners among the interviewees noted the need for a holistic approach to overcome the barriers community members face in their working lives. The essential strategy is to “get people into jobs, and then make sure that they progress up to a livable wage,” but, as one respondent noted, disruptions like COVID and wildfires make this linear progression difficult for everyone.

“[Workforce Initiatives need to understand] barriers like transportation, childcare, housing...understand the holistic approach that is needed. It takes working with regional partners, and looking at larger problems.”

Because such a large segment of the workforce has been employed in an industry (cannabis)<sup>160</sup> that was illicit and so retains some informality in its working culture, capable workers struggle to “punch a clock” and work under conventional rules and norms. Another issue impacting workers’ soft skill set is trauma; in particular, providers noted the need for assistance with issues like managing workday stress and interpersonal issues. As the data reveal, the region has low prime-age labor force participation, which is attributed to these factors (Figure 7.2).

<sup>160</sup> No reliable employment data are available for the cannabis industry (see Industry Cluster Analysis), but the effects of its recent collapse are easily seen in the communities who rely on it, as detailed in this article featuring an RRRISE Equity Council member: <https://calmatters.org/economy/2023/02/emerald-triangle-cannabis-workers/>



Regional disability rates are significantly higher than the state averages, affecting even young adults. Among prime-age adults who are unemployed or out of the labor force, a substantial proportion cite disability as their main reason for not working (Labor Market Analysis).

**Opportunities and Barriers for Remote Workers.** Despite a preference for "grow your own" approaches, there is widespread acknowledgment of the challenges that an aging and diminishing population poses. With its scenic landscapes and abundance of outdoor recreation opportunities, the region could attract and retain more skilled young people if opportunities for remote work were facilitated. The workforce-development strategy of the region's economic development partners is three pronged: "Build, Attract, Retain." Increased investment in broadband infrastructure could help achieve this and would also bolster digitally based economic activities and entrepreneurship in general. A Lake County participant noted that, despite destruction from catastrophic wildfire (2015–17), the county's residents are still experiencing in-migration from urban areas, a source of optimism. Many in the region believe that the favorable climate, clean coastal air, and access to abundant water will recommend this destination to climate migrants.

## Social and Relational Capital

Figure 8.5 SWOT Analysis – Social and Relational Capital





“The lack of institutions to do this work. That is our primary [economic development] problem.”

“People want to work with each other and are invested in the community”

“What I’ve been doing just kind of on my own... working with people who are only Spanish speaking... It’s hard [for them] to navigate the system.”

## Working Culture

Surprisingly, during the participatory SWOT research sessions, Collaborative members frequently emphasized the region’s lack of capacity and the impact this has on its working culture, particularly in the public sector and economic development space. Cultural and organizational barriers mentioned frequently included: lack of capacity to engage in sustained, quality cooperation and collaboration, a “dream small” mentality, a scarcity mindset, mistrust and personality conflicts that disrupt collaborative efforts. The most frequently cited issue for organizations was lack of capacity, but working in silos, duplicative economic development efforts, and insufficient depth of experience in economic development were also mentioned. Relatedly, participants noted a dearth of energized leadership and a lack of succession plans to empower young up-and-comers. One of the consequences of this is a lack of professionals to “pass the torch on to.” According to listening session participants, capacity constraints impact collaboration and innovation. RRRISE was seen by many as an opportunity to work regionally to overcome these challenges.

“It’s difficult to get agencies to pivot or try something new, even if it’s to their benefit.”

Corroborating these concerns, the region’s census response rate is low (a 75% response rate compared to the national median of 81%), a metric the *Opportunity Atlas* associates with strength of social capital strength.<sup>161</sup>

**Partnerships.** Enhanced collaboration between economic development agencies and establishing and strengthening cross-industry partnerships are potential sources of opportunities.

“We assume that NGOs have those connections to the community and business, but we often find that our non profit organizations are very siloed...”

<sup>161</sup> <https://www.opportunityatlas.org/>

Survey results provide additional context for the region's organizations and their growth capacity. Those key findings include:

- ◆ Most organizations are small (42% report having 0-5 staff members) and work at the county level.
- ◆ Although many organizations serve priority communities, relatively few work with non-federally recognized Tribes, unions, or the Hmong community.
- ◆ Few organizations explicitly work on environmental justice, and there is relatively little union presence. Therefore, few partnerships are reported with these types of organizations.
- ◆ The predominant partner category within the Collaborative consists of grassroots and community-based organizations (34%).
- ◆ At present, RRRISE's reach includes over 900 organizations and individuals in the region.

**Capacity Constraints** are a persistent theme for the region. Lack of economic development planning capacity impacts jurisdictions across the region; "everyone is spread really thin," was heard repeatedly. Good initiatives struggle to secure capital, navigate pre-development, and move into implementation. In particular, organizations that can provide support to convene desirable collaborations that break down silos are lacking. This relative lack of professional organizations in the region not only inhibits innovation and growth across sectors and industries but also most likely impacts the ability of leaders from disinvested and marginalized groups to attain leadership positions and influence outcomes.

"In a rural community, capacity is a huge issue. We hear this all the time from city and Tribal planners... most organizations are treading water, we can't keep up with the current workload."

The Transportation, Warehousing, and Utilities; Construction; Other Services; and Wholesale Trade sectors are projected to experience faster-than-average job growth rates, suggesting a lowered risk of displacement for workers in these fields. Manufacturing; The Total Farm, Mining, and Logging; and Retail Trade sectors are expected to experience slower-than-average job growth rates, disproportionately impacting men, persons of color, and individuals with low levels of educational attainment (Labor Market Analysis).

Challenges identified in economic planning include the historical lack of planning infrastructure in rural areas, the need to reallocate resources after disasters, staff turnover, lack of funding and data, the need to prioritize mandates, community resistance, and rapid shifts in the economic development landscape due to policy changes and external factors like climate impacts and emerging opportunities (e.g., legalization of cannabis, wildfire, storm and flooding devastation, and offshore wind).

**Tribal Collaboration.** Greater collaboration between tribal nations and non-tribal jurisdictions is seen as a catalyst for positive development. However, much more needs to be done to create partnerships that can function beneficially for tribal collaborators. (See *Partner Mapping Analysis* for an in-depth treatment of this topic.)

**Social Connection and Support.** In conversations with residents from across the region, connection with one another appeared as the source of both the region's greatest opportunities and its greatest weaknesses. Interviewees mentioned isolation and social alienation repeatedly, and the need for better connections, especially across generations, was a recurring theme. Participants also noted the development of some excellent supportive programs that are implementing innovative solutions to these social issues: the workforce development program "[BUILD](#)"<sup>162</sup> in Lake County, which offers training in construction trades; Second Chance re-entry and support; Community Schools; child care expansion activities; and others. These support re-connection, fresh starts, and overcoming the barriers that working families within the region face. In another example, the family resource center in Humboldt County is hosting the region's first Guaranteed Income pilot, one of the few rural pilots in the nation. Social assistance is a promising sector named in the accompanying *Industry Cluster Analysis* report.

"What I enjoy most is to see the relationships that I'm building with a community – to see how I'm helping the community."

These issues are of heightened importance to priority communities. Direct feedback from these communities calls attention to their struggles in obtaining stable jobs offering sufficient pay to cover expenses, relevant skill-development opportunities, resources within their communities that meet basic needs of housing, transportation, child/family care and healthcare, and meaningful work structured in ways that fulfill the reasons they choose to live and work in this region—despite, at times, experiencing enduring and significant challenges and hardships. People in priority communities spoke, on one hand, about the impacts of trauma, violence, discrimination, and exclusion, and, on the other, of the importance of connection, social safety, and being valued. They also expressed a desire to be able to simply meet basic needs while selecting career paths that allow them to honor the many reasons they call this region home.

"I love what I do, but I need to be able to support myself at the end of the day and living paycheck to paycheck is not great."

## Physical Capital

In disheartening interviews, residents consistently described road networks, water and sewerage connections, and the energy and communications infrastructure as "crumbling or absent." Lack of housing is the primary constraint cited with respect to economic and workforce development.

<sup>162</sup> [REF]

Figure 8.6 SWOT Analysis – Physical Capital



**Broadband Access** limits other key opportunities, like the ability to deliver online training to entrepreneurs and workers or to attract remote workers. Respondents provided two examples. Many believe that attracting more remote workers to the region may help stabilize the pattern of economic boom and bust; however, at present, much work needs to be done to upgrade the electricity supply, deliver broadband infrastructure, and create housing to accommodate these workers. Several major resources are being launched to address this constraint. For example, Yurok Telecom Corporation has received a large grant to improve cell phone reception in the area, and five new towers will be built. The Tribe owns their airspace, and so providers wanting to expand their reach can use Tribal broadband capacity, expanding services to the community.

*“There is synergy with broadband. People haven’t necessarily made connections between broadband and offshore—internet is a power hog—all the surplus wind power from offshore wind and expanded broadband is going to make this area an attractive place.”*

**Transportation.** Delayed and deferred maintenance is an issue for the region’s transportation infrastructure. Road construction is a priority frequently mentioned in Del Norte and adjacent Tribal areas. One partner, associating this challenge with workforce development issues, noted that his organization sends apprentices away for training, and these apprentices often do not return to fill critical positions (*“We don’t have training facilities, so when people go to train, they don’t come back.”*). Tribal communities experience the vulnerability of limited road infrastructure (*“We are so easily cut off from the world.”*). In Del Norte County, The Last Chance Grade project was a major source of anxiety. Areas with only one way in and out can become “islands,” especially concerning in the wake of natural disasters such as road closures due to landslides, fire, and flooding. Unpaved roads are also a significant contributor to airborne particulate matter and so present an opportunity to improve air quality (Climate Analysis).

*“I live really rural, so it would require a lot of drive time to be in person [for training]. And so... you’re investing in the gas, you’re investing your time in that total drive time. I think that can really pose a challenge for some of our rural entrepreneurs.”*

Airports in Arcata and Crescent City provide crucial connectivity to the outside and the potential development opportunities that accompany it. This critical piece of the region’s infrastructure is due for runway rebuilds; an upgrade to modern, energy-efficient lighting; and safe, upgraded fuel-storage facilities. Current funding for these airports by the state is constrained, and Federal Aviation Administration’s Airport Improvement Program (FAA AIP) funding will not cover the cost of all the upgrades needed.

Listening sessions and transit plans throughout the region stressed the need for enhanced public transit options. More frequent availability, extended hours, increased destinations, and Sunday service would benefit the communities they serve. Particular concern was expressed for youth, elderly, and disabled residents.

To help achieve California’s carbon-neutral goals, infrastructure supporting improved access for pedestrians and cyclists should be considered as roads and highways are improved. In feedback to the Caltrans interactive map, over 75% of commenters mentioned being uncomfortable walking or biking because of heavy traffic or high vehicle speeds (Caltrans, 2021).

**Water Delivery and Sewerage.** Residents in numerous jurisdictions across the region mentioned good water infrastructure as a major issue. Some complained of high rates, others that low revenue resulted in a lack of funds to update water and sewer infrastructure in their small communities, a primary concern in Orick, which, like many other smaller and unincorporated communities, is worried about the risks of aged water infrastructure and the inability to fund wastewater treatment

facilities and leach fields (Climate Analysis). Special service districts attempt to maintain this crucial infrastructure but struggle, and, some residents reported, federal and county entities do not sufficiently meet obligations to maintain critical water infrastructure, e.g., levees to prevent flooding. That so much of the housing constructed in commodity boom towns was built informally is now creating problems—under current regulations, siting and layout make it impossible in certain locations to upgrade infrastructure to a system for which Humboldt County can issue a permit, which costs an exorbitant near \$30,000 to acquire, reported one community leader.

“Even the roads to get here sometimes, depending on the weather, half of them are closed.”

“Driving 2 hours to get to school is definitely tough... it’s become an obstacle, even now, where it’s like, some days, I just don’t want to go, but I know I have to.”

**Constraints related to the rural and remote geography.** Participants noted vulnerabilities related to limited infrastructure (*“just one way in and out”*); distance to major airports; difficulty in providing services in places with low population density; the aforementioned lack of broadband; distance to markets; lack of public transit infrastructure or of transportation for moving goods and high costs associated with doing so; and crumbling water infrastructure. Isolation creates other undesirable social and economic outcomes. In general, outdated and dangerous infrastructure was a very prevalent theme of discussions with residents from across the region. Transportation corridors are threatened by fires, landslides, and other climate-related threats. The Last Chance Grade in Del Norte County is one of the more startling road sections at risk from these.

“Housing has been really transient. I would bounce around a lot to friends, house-sitting/couch surfing.”

**Housing as a limiting factor to economic growth.** Across all industries and sectors, workforce housing was cited as the primary constraint to growth and well-being in the region. Medical fields are particularly impacted; participants frequently mentioned that difficulty recruiting and retaining medical professionals is due in large part to lack of housing. The Education sector and more prospective industries like offshore wind were also frequently mentioned as constrained by lack of housing, which impacts large employers and small firms alike. Currently, housing and broadband are major barriers to attracting skilled workforce from outside the area in crucial fields like education and health. Housing costs continue to increase and not enough housing is being produced to keep pace with demand. While, overall, California’s housing stock has increased by 7% since 2010, the Redwood Region has had only a 1.3% growth in stock (Industry Cluster Analysis). Aging housing stock is associated with a heightened risk of lead poisoning in children, and emissions could be reduced by addressing residential wood burning (Public Health Analysis and Climate Analysis, respectively).

“There’s only so much developable land – could be a good time to try something at scale. We have teachers every year who accept jobs and turn them down because they can’t find housing. This touches the medical field as well – anyone who tries to recruit anyone out of the area. Building homes creates jobs for builders and subcontractors but the trick is keeping them affordable in the long term...”

**Housing Development Constraints and Challenges.** Interviewees attributed housing constraints to a host of factors. Single-family zoning, zoning restrictions specific to coastal communities, and the complexities of the permitting process were all cited as challenges. There are few large developers (*“most everything is built by DANCO”*). The prevalence of unincorporated rural communities contributes to this; counties are not as well positioned as municipalities to build housing. Northcoast municipalities are exploring annexing adjacent land as a strategy to get more units built on outlying areas. Many have made concerted efforts to incentivize owners to create an extra unit or two using ADU policies, or by subdividing slightly larger city lots. Listening session participants estimated that the time it consumed in getting a housing development project through local permitting can be between two and five years and at an exorbitant cost to the developer that imposes additional limits on financing as commercial capital will not fund these non-value-generating predevelopment activities. Orthodox approaches that focus on subsidizing the homeowner (to whom the cost burdens are then transferred) do not systematically address this issue. Urban concerns dominate housing policy in the state and so do not adequately address the constraints faced in rural areas, including the increased burden rural developers face when creating infrastructure “from scratch,” a key difference from their urban counterparts.

As in many parts of arid California, the climate crisis is exacerbating the housing crisis in the Redwood Region. Lake County, where 60% of the housing stock was lost in catastrophic wildfires in 2016, is a stark example.

“The valley fire was eight years ago—we are only NOW getting a couple of new houses up. We lost almost 2,000 homes.”

Many factors have delayed rebuilding, one being changes in regulations and replacement of older construction. Many families in Lake County were told that they had to revamp existing septic and sewerage connections in order to rebuild, creating delays and substantial added costs. Advocates there expressed the need for more funding dedicated to fire mitigation and home-hardening programs and sought to partner with local community colleges to add a workforce curriculum around fire-adapted, affordable housing construction techniques.

Municipalities there and across the region are focusing on big housing construction pushes and finding new ways to overcome such constraints. Notably, the region’s northern Tribal Nations have succeeded in breaking down some barriers to producing housing—investing in tribal-led construction firms, creating land trust models for building affordable housing, and taking advantage of a different regulatory environment to build housing on tribal lands. Much more is needed, however, respondents noted.



**The Housing Crisis in the Redwood Region.** The region is disproportionately struck by California’s homelessness crisis, with the highest ratios of unhoused-to-housed residents in the state. Neighborhood issues arising from encampments are a major concern with which municipalities and health and human service agencies must contend. One innovative environmental justice organization is framing this issue as such and thus helping to advocate for the dignity for those experiencing homelessness by providing basic waste management services, while also organizing clean-ups around encampments, many of which are located in conservation or other natural areas.

“How do we make [housing] so that no one has to turn a profit [on the investment], people can just have a place to live?”

“How do you create home ownership opportunities to establish roots, equity, and wealth?”

Recognizing that many housing policy prescriptions can be used to address the issue in urban contexts as well as rural ones, Redwood Region housing advocates are exploring innovative solutions applicable in both contexts. Thus, there is increasing interest in land trust models of housing development that can help low-income working families build wealth in addition to stabilizing their housing. Creating cooperatives and subsequently developing mobile home parks is one method of interest that could benefit many community members in the region. The Wiyot Tribe has initiated community land bank model housing developments in Mendocino County and may do so elsewhere in the region. Research participants in Del Norte expressed interest in both land trust models and restricted deeds as a way to maintain housing affordability while providing home-ownership opportunities.

### The Natural Environment

The region’s beautiful, unique, and often pristine natural landscapes are a source of pride and its primary strength. With a diversity of ecosystems and clean air, its environmental setting offers communities everything they need for economic well-being and physical, mental, and spiritual health.



Figure 8.7 SWOT Analysis – The Natural Environment



**Legacy of Extractive Industries.** The abundant natural resources within the Redwood Region provided the basis for its economic prosperity. Although extensive logging significantly diminished forested areas, the ecosystems have been resilient, providing some of the highest quality wildlife habitats in California. Over time, the extraction industries have waned, with government and social services now employing the majority of the region's workforce. Thus, despite a surge in visitations and growth in the service industry, the Redwood Region remains economically weaker than most other coastal regions in California.

**Impacts of Climate Crisis.** Throughout the region, various climate hazards are anticipated to impact key economic drivers. Rising temperatures are expected to reduce agricultural productivity, and increasing surface water temperatures may lead to tourism disruptions caused by harmful algae blooms. Endangered fish populations are likely to decrease fishing opportunities. Altered precipitation patterns may result in prolonged dry spells and extreme precipitation events, leading to water shortages for crops and pasture land. Severe storms could induce flooding, infrastructure damage, and the ruin of agricultural lands. Very frequently mentioned are the impacts of climate change the region is facing: lack of adequate water and increased wildfire risk. The knock-on effects this will have include limited access to electricity, large economic losses to business, inability to insure properties, loss of housing stock, and more. Sea level rise threatens the coastal infrastructure and Blue Economy. The region is also prone to non-climate-related disasters: Proximity to fault lines opens the region to the possibility of destructive earthquakes and tsunamis.

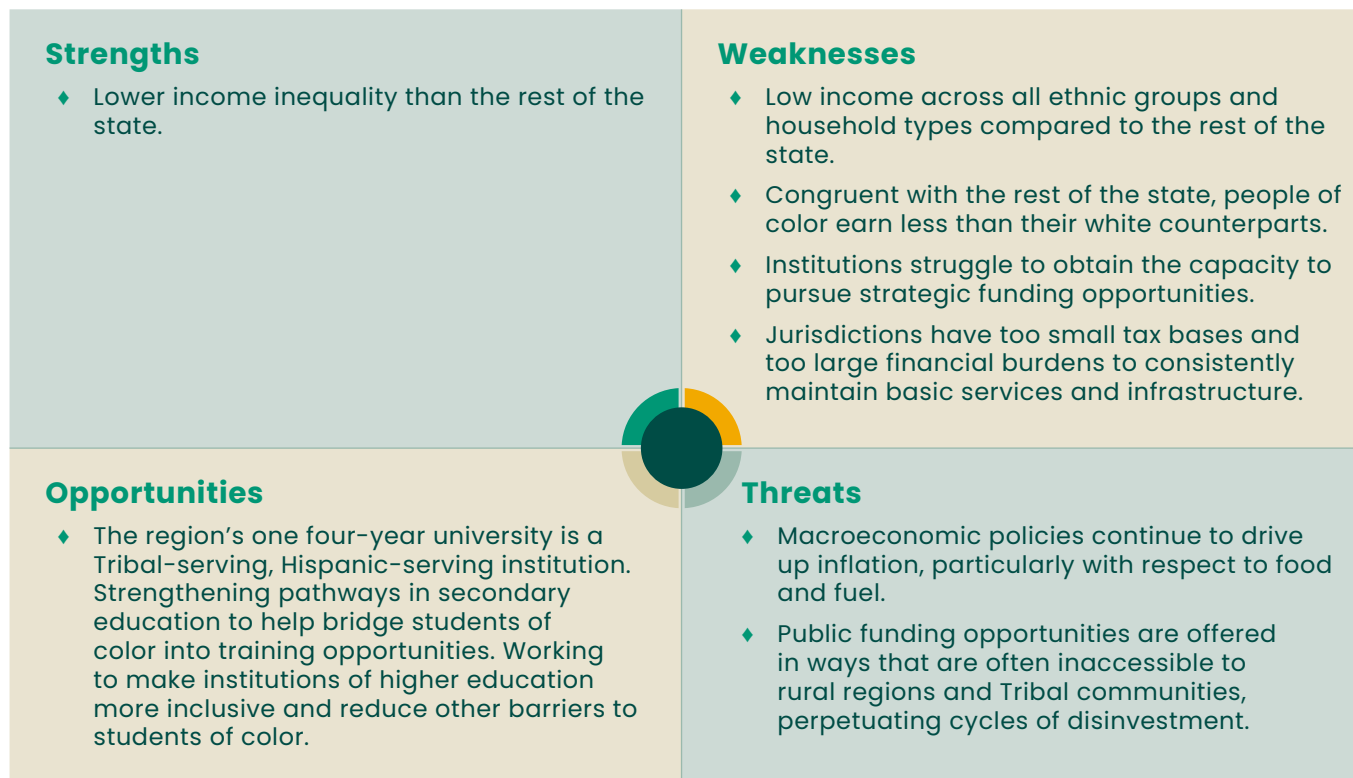
The heightened risk of wildfires, coupled with recent wildfire activity, has inflicted enormous economic losses on the agriculture industry. Additionally, the historic redwood forests along the region's inland boundary face the looming threat of wildfires, further jeopardizing the area's economic landscape. Sea level rise in Humboldt Bay could lead to flooding and erosion, leading in turn to severe infrastructure damage and possible public health concerns. Sea level rise projections indicate that communities around Humboldt Bay could be inundated, not only displacing residents and causing personal financial injury but also lowering home values, reducing the tax base, and so increasing poverty in the region. Public infrastructure like roads, water pipes, electricity towers, and wastewater treatment plants are within the inundation zone.

Research participants in both eastern Humboldt County and Mendocino County mentioned the positive development of local fire safe councils, and positive collaborations with CAL FIRE (the California Department of Forestry and Fire Protection). In addition, Lake was the first county in the region to create a climate resilience officer position. Thus, serious efforts aimed at climate adaptation and resilience planning are underway.

## Financial Capital

The listening campaign revealed that the focus of local institutions was lack of resources and the barriers that prevented their attainment, whereas individuals and their advocates emphasized the lack of appropriate job opportunities and the high and rising cost of living, with the purchase of such essentials as housing, medical care, and childcare posing significant financial hardship. Thus, people remain in the Redwood Region because of their love for its land and communities, but at the sacrifice of building durable wealth and pursuing upward mobility.

Figure 8.8 SWOT Analysis – Financial Capital



## Public Investment and Institutional Development

Respondents of public sector institutions were quick to bring up the following challenges and barriers the region faces in accessing funding:

1

Projects' Lack of Shovel Readiness: The primary reasons cited for this were either lack of planning:

"We got \$2.6 million to do this [wastewater infrastructure project], but we were supposed to be shovel ready and we didn't even have a plan."

Or failure to set aside adequate funding:

"The approach to funding should change—the county or state should reinvest tax money by making the decision about funding at the beginning of projects."

*The necessary sequence of predevelopment activities seems to be incongruent with risk-averse funding processes. Thus, if a project is needed and approved, public entities should set aside the funds while pre-development takes place so that the project can be started immediately and carried through to its completion without significant interruption. Tribal partners also cited challenges with respect to shovel readiness of projects.*

2

Funding Technical Assistance and Basic Support of Partnerships: As one example, a resident of Willow Creek celebrated the work of local fire-resilience groups but questioned whether these would be able to continue because the funding needed to adequately support these partnerships would be available.

3

High County Budgets: As a consequence, few counties have the capacity to issue the grants that would provide consistent funding for economic development initiatives or would maintain staffing to carry out the work. One government respondent lamented,

“We are focused on keeping the lights on.”

4

Large swaths of land under state and federal conservation status impacts the tax base. This is particularly an issue in Del Norte County.

5

Being Reactive Instead of Proactive With Respect to Funding Opportunities.

“[Our county] is simply reacting to federal and state funding opportunities, e.g., we need a bridge, so let’s apply for this grant to do that.”

6

Capacity Traps: Institutions struggle to obtain funds and fund staff hours in order to pursue funds and hire the staff needed to do so. Representatives of special districts in rural and remote areas noted that resource barriers sometimes prevent their applying for or receiving grants. For instance, their requests for funding to obtain resources needed to upgrade infrastructure have been declined because they failed to demonstrate sufficient financial stability to maintain the new infrastructure were they to be awarded funding. These cycles of disinvestment and low capacity play out in different ways across all counties and Tribal lands within the region.

However, due to rural disinvestment, the region is eligible for many tranches of state and federal funding because of the region’s income data and other socioeconomic factors. Innovative ideas community members put forward include establishing a regional public bank and providing technical assistance to communities to form collaboratives and promote worker ownership.

## Private Investment

Many communities, firms, and individuals in the Redwood Region do not have ready access to capital. “Banking deserts” (rural areas with relatively few financial service institutions) in the

region make it more difficult for individuals and local businesses to obtain conventional startup or expansion loans. According to research (e.g., Tolbert et al., 2014), the prevalence of independent local banks within a community or region is positively associated with increased business formation, higher wage and income levels, and lower poverty rates there. Addressing financial inclusion and asset-building through programs that provide increased access to financial services (e.g., affordable loans, credit counseling, and investment opportunities) is thus a key priority of the Collaborative, as are investments that leverage local, regional, state, federal, and philanthropic dollars to maximize economic benefits and further the inclusive vision and plan for Redwood Region economic vitality established in the regional roadmap.

## Household Income and Wealth

Listening sessions with residents and service providers across the region emphasized the same point: Working people are being squeezed out of the local economy, and the data support this perception; with wages far lower than in the rest of the state and the increasing cost of essentials, a family of four with two adults working full time will, on average, spend 97% of their income to cover the basic essentials of housing, food, healthcare, and childcare. That of other, comparable areas is only 92% (see Figure 3.3).

## Target Industries SWOT Analysis

The Redwood Region is characterized by a relatively diverse economic base spread across the four counties and Tribal Lands constituting the region. A quantitative analysis of economic performance, environmental impact, and available resources identified 11 key industries as potential targets for job and wage growth. Additionally, a survey of 97 Collaborative and community members and review of previous industry cluster studies (published in 2022) led to the creation of four broad groups that form the Collaborative's thematic working groups.



**Arts, Culture, and  
Tourism**



**Health and Caregiving**



**Resilient and  
Renewable Energy**



**Working Lands and  
Blue Economy**

A review of regional (county and Tribal) Comprehensive Economic Development Strategy (CEDs) documents confirms the importance of these sectors across the Redwood Region (with regional variability owing to geography, population, and other factors). Such targeted sectors, or industry “clusters,” are characterized by:

1. Increased innovation activity and knowledge “spillover”
2. More specialized (and educated) labor pools
3. Lower transaction costs (communication, transportation, coordination, etc.)
4. Stronger networks of specialized suppliers and service providers (Porter, 1998)



Industry clusters tend to perform better in “thick” labor markets (i.e., markets having many buyers and sellers of labor), have more skilled workers in nonroutine jobs (i.e., a more educated workforce), and better occupational matching (i.e., matching skill sets to employer needs), leading to increased worker productivity. A focus on these sectors lends itself well to targeted workforce development programming that addresses industry-defined skill needs and provides public sector industry support.

The targeted-sector approach includes (but is not limited to) the following limitations:

1. The potential for reduced industry diversity (by focusing on specific sectors at the exclusion of others, such as emerging markets)
2. The potential for groupthink (at the expense of innovation)
3. Barriers to entry for new firms (through an anti-competitive blocking effect)
4. Increased fragility (less resilience) owing to reliance on more unitary sectors (Donahue et al., 2018)

A less diverse economic base can be more vulnerable to economic downturns, as evidenced by the exclusion of industries pertaining to offshore wind development within the cluster analysis.

The Education Services, Health and Social Assistance, and Leisure and Hospitality sectors are expected to account for nearly two-thirds of projected job growth over the current decade, while the Manufacturing, Total Farm, Mining, and Logging, and Retail Trade sectors are expected to experience slower than average job growth rates, disproportionately impacting men, persons of color, and individuals with lower levels of educational attainment.



## Arts, Culture, and Tourism

**Creative Placemaking Initiatives:** Several rural, remote, Tribal, and unincorporated communities are in fact the gateways to the region for visitors arriving from the North, South, and East. Given that these are some of the most disinvested parts of not only the region but the entire state, there is a strong call to invest in upgrading tourism infrastructure in those specific communities. Better relationships with State and National Parks, including strategic placement of visitors centers and other park infrastructure, was frequently brought up in those communities. For many coastal communities, tourism became the backbone of the local economy once fisheries went into decline (highlighted by respondents from Mendocino but relevant in Del Norte and Humboldt as well).

Downtowns across the region bear the scars of a long history of commodity boom and bust cycles and natural disasters. In Crescent City, the capital city of Del Norte which was destroyed by a tsunami in 1964 and then subsequently built back within a year—planning practitioners, business advocates and others noted the need for creative placemaking which would uplift the community and draw visitors. The perception of downtown areas lacking charm is a challenge for marketing. That city’s plans for revitalizing its waterfront areas highlights how more can be done to celebrate the region’s original stewards by promoting education of indigenous cultures. Working together with the Tolowa Dee-ni Nation and other local Tribes, the City has created a plan for an interpretive trail that centers those cultures. Tribal collaborators note how allowing Tribal people to tell their stories makes a difference in the community. The acknowledgment, collaboration, and celebration is a hopeful indication of more Tribal inclusion in planning. Tribal members indicated that they hope to see more representatives on commissions, committees, and other forms of government led work moving forward.

**Arts and Culture are a Source of Healing and Resilience:** The Arts and Culture sector was highlighted by community members as a key enabler for helping youth thrive. Given the region’s troubling statistics



with respect to mental health, substance use, and other well-being issues associated with isolation and alienation– the arts provide a powerful avenue to expression, connection, and belonging especially for young people. Additionally, the institutions in the sector have played a key role in establishing and/or fiscally sponsoring other organizations and initiatives that celebrate cultural identities– for Latinos, Indigenous community members, and other peoples of color. Arts advocacy groups across the region play a key part in making these special communities visible and celebrated on the North Coast.

**Capitalizing on the Region’s Rich Cultural History:** Cultural heritage is an incredible and immeasurable strength of the region. There are aspects of the region’s history that could be better celebrated and might help draw new visitors. One example, the aesthetic culture of the Back to the Land movement. As those artists are now aging and many unable to continue living off grid as they did when they arrived in the 1960s and 70s, some investors from the Bay Area have started to acquire these architecturally unique eco-homes and preserve them as B&Bs and retreats– *“while telling the story of that movement intentionally”* (in Mendocino). *“Artists create that rising value [that draws people to the region]. And we need population coming in, we’re not replacing ourselves.”* A popular idea from partners in the Arts and Culture sector is the creation of a regional Cultural Plan or Arts and Culture “trail”– a central brand that can make all the richness here more visible in one cohesive informational product.

**Agricultural and Eco-Tourism Development:** There is a recognition of the region’s potential for agricultural tourism. Alexandre Family farm located in Del Norte County is a leader in the regenerative agriculture movement. In Southern Humboldt and Northern Mendocino, industry advocates have helped create cannabis centered agri-tourism opportunities and marketing campaigns to support them. Collaborative marketing initiatives, including shared efforts with neighboring counties and funding from Visit California, were mentioned as desirable. Recreational, multi-use trail development is also embraced by the region, with the Great Redwood Trail on its way and Del Norte County planning other opportunities to draw in hikers, bikers, equestrians, and others.

**Hospitality as a Key Industry:** In areas where traditional industries like logging and fishing have declined, tourism and hospitality are identified as the economic drivers that took their place. Tourism revenue, including Transient Occupancy Tax (TOT), contributes substantially to local economies. This was highlighted especially in communities on the Mendocino Coast. The seasonal nature of tourism can be a pain point, and jurisdictions are exploring strategies to focus on year-round productive activities and attractions. With respect to resilience in the face of shocks, COVID-19 posed challenges, it also brought opportunities, with increased tourism after restrictions lessened. The development of attractions like the Redwood Skywalk, for example, contributed positively to local tourism. There are budding career pathway programs for helping connect youth to opportunities in this industry, for example the “E3” Pathway Program in Del Norte.

#### Projects and Initiatives Highlighted by the Community

From CEDS and Tribal strategic plans, listening sessions, local table meetings, and surveys:

- ◆ Crescent City Harbor Revitalization
- ◆ Lake County Tourism Improvement District
- ◆ Redwood Experience Center



## Health and Caregiving

**Medically Underserved Region:** To put it simply– *“there is no medical care around here.”* People from all walks of life find themselves in the position of having to travel long distances to see a specialist– though of course this creates significant barriers for transportation limited and time and resource poor families. Community members elevated how senior populations who often have increased medical needs are particularly burdened by having to drive upwards of three hours to see a doctor. Being a medically underserved area was one of the most frequently mentioned weaknesses of the region. In addition to the acute shortage of providers; community members also noted the quality of care available leaves something to be desired, high turnover in medical staff and especially a lack of specialists. The cost of care, when one can access it, is also a huge barrier. One participant posited that Del Norte is one of the most expensive places in the country to give birth. The proportion of fixed income residents, and those on Medicaid and Medicare, have implications for reimbursement rates and the business models used by healthcare providers.

Behavioral and mental health (especially for youth), and trauma (particularly historical) was emphasized across all counties and tribal lands– substance use, lack of medical providers for these issues, and adverse childhood experiences came up repeatedly. The opioid epidemic is acute in the region.

*“I do think some counseling... just talking to someone a little bit more...  
At 18 years old, my best friend had committed suicide.”*

For those suffering from substance use disorder, or are in the tough position of having a child in need of behavioral healthcare, many have to go outside the area to find in-patient facilities. There is fear that funding for important youth programming is drying up as a result of the all but collapse of the cannabis industry (Prop 64 funding).

**Medical and Public Health Innovations:** Positively, respondents observed a growing movement in the region around Blue Zones (areas of the world where people routinely live to old age and chronic disease rates are low) and the health drivers that create them. Another cultural strength which relates to health and well-being for residents is the presence of strong mutual aid networks. Practitioners expressed that expanding telehealth could be an opportunity to improve access to services and the region already has several mobile providers who can meet folks where they are at to provide care.

**Leadership on Economic Development Constraints:** Leaders in the healthcare industry are taking on the housing crisis; exploring innovative solutions to alleviating this constraint to recruiting necessary personnel. Destination healthcare, for things like LASIK surgery for example, could offer a boon to rural communities who have clinics in place– Southern Humboldt respondents emphasized this potential.

**Critical Need for Child and Elder Care:** The lack of childcare providers remains a huge barrier for working families. At its worst in Humboldt County, childcare as a proportion of median earnings reached 37%. There is also a lack of therapists and service providers to support families with kids that have special needs, as highlighted in the behavioral health workforce statistics above.

### Projects and Initiatives Highlighted by the Community

From CEDS and Tribal strategic plans, listening sessions, local table meetings, and surveys:

- ◆ Supportive housing developments for people with disabilities
- ◆ Support to childcare businesses and providers in Humboldt County
- ◆ Housing initiatives for medical staff



## Renewable and Resilient Energy

**High Potential for Renewable Energy Development:** Lake County is one of only three sites worldwide where tapping into geothermal energy is relatively easy since it is so close to the surface. The coastal counties all host good sites for offshore wind development.<sup>162</sup>

Development of offshore wind in Humboldt Bay is much anticipated—“the biggest in the country!” However, listening session participants also frequently expressed pessimism, noting that the project will require years before being operational and that “cultural viewpoints” could block its completion. For instance, a respondent from a labor organization noted that the wind project will only begin hiring laborers in six years. **“A huge challenge will be patience, hanging in there until things get off the ground,”** one environmental activist commented. Another concern is sustainability of jobs after completion of major construction.

Also of interest to participants were the types of opportunities that will be afforded to local laborers (who are still majority non-union) during the port-redevelopment phase. From frequent mentions during listening sessions, the companies involved in this—Crowley, Vineyard Offshore—are already notable presences in the local community.

Another, more prospective project mentioned is a “hydrogen highway” for the Redwood Region. Defined as a chain of hydrogen-equipped filling stations and other infrastructure along a road or highway that would allow travel by hydrogen vehicles, this could be aligned with fleet conversion for transport within the region. A respondent commented that biomass-to-hydrogen conversion has become a more commercially viable technology than in the past and that there are successful hydrogen fuel projects in other parts of the country and worldwide. The concept underlying this technology is still in the preliminary feasibility stage, but Tribal planners throughout the region have expressed interest in it. Facilities could be co-located near forestry operations/mills where biomass is produced. A feasibility study commissioned by the Sonoma County and Mendocino County Economic Development District (SMEDD) is currently being conducted to explore a trucking route from Eureka to Oakland supported by hydrogen fueling.

**Dissatisfaction With the Public Utility PG&E** is resounding. Deferred maintenance of PG&E’s above-ground infrastructure continues to constitute a dangerous fire risk. The utility’s inability to promptly install electricity hookups to new residences and businesses is a major constraint reported throughout the region. However, the utility’s infrastructure problems requiring resolution are

<sup>162</sup> Schatz Energy Center Offshore Wind Feasibility Study: <https://schatzcenter.org/2019/07/oswstudy2/>

significantly larger. During listening sessions, participants in Del Norte spoke of the large number of households that had been without electricity for 10 or more days in the wake of fires and so had to rely on emergency diesel generators. Inland communities wonder if the grid has the capacity to cool critical institutions during the heat waves projected to come.

**“We need PG&E to do their job better – removing and installing electrical drops is frustrating—a big problem for the county if we’re ever going to meet housing and other goals. PG&E is a huge problem.”**

**Energy Sovereignty Initiatives:** Driven by concerns about the conventional grid, a project of major interest to the region is Blue Lake Rancheria’s microgrid. Tribal partners and participants from rural and remote areas of the region alluded to this repeatedly. The Redwood Coast Airport Microgrid “the first 100% renewable energy, front-of-meter, multi-customer microgrid” was launched in 2022.

At present, electrical transmission capacity and connection to transportation corridors for wind energy generation are inadequate. Moreover, one partner noted that, in order for the local benefit of the wind energy project to be sustainable beyond construction of its infrastructure, the opportunity exists to synergistically expand both electrical and broadband access, facilitating establishment of new businesses along rural corridors and in places like Round Valley. The three corridors the state has already identified are the road from Fairhaven to Kneeland and the route down highway 36, along the 299, and then through southern Humboldt along the 101.

Energy provision in Lake County differs from that in the rest of the region; the grid there is sectioned, and, although supported by megawatt diesel generators similar to those used in Del Norte and other parts of the region, transmission lines are not all under threat. An important aspect of Lake County’s Energy sector is geothermal energy coming from the geysers (by Calpine Corporation). Although the infrastructure was established for this in the 1970s or 1980s, addressing other environmental issues has a higher priority. The county receives funding through the “Full Circle Project,” which injects secondarily treated wastewater into the steam fields of the geysers to generate that is delivered in partnership with Calpine Corporation, Northern California Power Authority, and now Open Energy. While saving on tertiary treatment of wastewater, this also results in 10 million gallons of water leaving the Clear Lake watershed basin, which supplements wastewater use. The community is unclear, over time, what impact this will have on the lake.

### Projects and Initiatives Highlighted by the Community

From CEDS and Tribal strategic plans, listening sessions, local table meetings, and surveys:

- ◆ Energy careers curriculum, solar arrays on brownfield redevelopment sites in Hoopa
- ◆ Blue Lake Rancheria Microgrid
- ◆ Fort Bragg Oneka Seawater Desalination Pilot Study
- ◆ Toma Resilience Campus
- ◆ Offshore wind development



## Working Lands and Blue Economy

**Favorable Climate and Potential for Regenerative Agriculture.** The most often mentioned strengths and sources of opportunities for the region lie in its natural beauty and abundant natural resources. Listening session participants noted the high potential for innovation in the Agriculture sector and Blue Economy. In particular, the wine industry, horticulture farms, regenerative livestock-production models, and local food economies are strong. The region is blessed with a climate that allows for year-round crop production. Its varied ecosystems and microbiomes therefore provide diverse opportunities, including expansion of regenerative agricultural practices on the grasslands. Advocates note that the region currently has more organic matter in its soil than 90% of the state, and great potential exists to continue sequestering carbon in the grasslands and building organic matter into the soil. The region therefore anticipates opportunities to further develop manufacturing industries linked to this sector.

**Nature-Based Solutions and Ecosystem Restoration.** The region contains opportunities to invest in sustainable infrastructure and nature-based solutions—wetlands, forest restoration, and innovations like the Arcata Marsh were given as examples. Partnering with the Redwoods National and State Parks to train a workforce in land- and resource-management careers is another opportunity contributors mentioned. For example, a heavy equipment regional training center has been proposed for Orick, a small and struggling rural community close to the Redwoods National and State Parks. There is potential for further developing science- and research-based industries along the coast and limnology research in Lake County. With respect to prospective industries like offshore wind and aquaculture development, preliminary data analyses indicate that labor shortages for such occupations as electricians and construction workers could number as high as a thousand or more workers—further indication of growing opportunities for thriving wage careers in the trades.

### Case Study

#### Developing Blue Economy Initiatives in Mendocino County

The Noyo Harbor District in Mendocino County, in collaboration with West Business Development Center (West Center), was awarded a \$3.2 million California Jobs First Pilot grant to revitalize the harbor and enhance its role in the California Blue Economy. The harbor, an important commercial and recreational fishing port in Mendocino County, has been a significant economic and cultural asset for over 72 years. The revitalization project, aligned with the 2019 Community Sustainability Plan, focuses on three key goals:

- 1. Installation of a New Ice House:** An energy-efficient, environmentally sustainable ice-making facility will be built to support 80 commercial fishing vessels, benefiting over 300 jobs. This facility, housed in portable containers powered by solar energy, is expected to boost the harbor's fleet and economic viability.
- 2. Marine-Based Business Training Program:** This program aims to equip small business owners and entrepreneurs in the marine sector with skills and opportunities for growth, fostering peer-to-peer learning and community partnerships.



**3. Community Fish Market Incubator:** Designed to enhance direct sales from fishing vessels to the community, this market will serve as an incubator for fleet members to apply new skills and improve customer engagement. The project includes a comprehensive marketing and branding strategy to ensure its sustainability beyond the initial two-year funding period.

Overall, the grant supports significant infrastructure improvements and economic development initiatives, positioning Noyo Harbor as a vital player in the regional and state economy. The Harbor District is also a key partner in the Noyo Ocean Collective, which is currently working on an aquaculture feasibility study.



**Cultures United by a Love of the Land.** Cultural factors contribute greatly to the region's strength. Community members expressed appreciation that the original stewards of the land still live here and that their traditional knowledge and practices are alive and can be used to more sustainably manage the forests and lands. The region's Tribal governments and nations are nationally and internationally recognized for their work to protect and restore its lands, forests, and rivers. Elevating their expertise as leaders in Redwood Region RISE thus constitutes an opportunity area for the Collaborative. The dam removal occurring on the Klamath river and other river-restoration work that may bolster the salmon populations provides an incredible opportunity tapping into this expertise, as are application of indigenous forest-management techniques e.g., cultural burns, which are addressed below.

**Traditional Ecological Knowledge.** Reducing the forests' fuel load and developing commercial uses for the resulting biomass constitutes a major climate-resilient, economic and workforce-development opportunity. Specifically, communities adjacent to forest conservation areas are excited about possible workforce training opportunities, for example, the proposed heavy equipment training site in Orick. Controlled burns, cultural burns, and other fire- and conservation-related

activities also constitute workforce-development opportunities. The potential for “cooperative” forest management amongst smaller, private landholders is also a cause of excitement. This would entail hiring firefighters in the off-season to process forests, i.e., remove dead trees and use them to provide firewood for those in need, and better manage forests to manage risk of fires.

**Climate Vulnerability.** The region is vulnerable to drought, fire risk, and sea level rise. Fire insurance is growing more costly, and some companies will no longer insure properties in the region. Vast natural landscapes are costly to manage, increasing that particular risk, which the long history of poor forest management practices has exacerbated by allowing high fuel loads to accumulate in heavily forested areas to drive catastrophic wildfire events. Agricultural industries are particularly vulnerable to this risk. The severe economic losses faced by the wine industry in Lake and Mendocino Counties due to smoke and other wildfire effects provide a stark example.

The region faces other environmental issues. Water rights are often contentious, particularly impacting communities near Clearlake. Commercial fish stocks are trending downwards, and sea level rise and acidification from climate change are occurring. Local fish stocks contain elevated mercury levels, posing a risk to Blue Economy industries (Climate Analysis). Important to note is that, while data on emissions sources are limited, those available suggest that industries within the Working Lands and Blue Economy cluster have higher emissions relative to economic value created than do other clusters.

**Boom and Bust Cycles.** The economic history of the Redwood Region is marked by commodity boom-and-bust cycles of natural resource extraction. Following the gold rush came waves of timber extraction. The housing boom of the 1960s decimated 90% of the old growth redwood forest, and this was followed by a decline in coastal fisheries by the early 1990s. Most recently, the newly legalized cannabis industry collapsed in 2022 and so is no longer considered a major economic driver for the region. This industry’s collapse is having a significant negative impact in rural small towns across the region. Currently, the Redwood Coast region has lost agricultural jobs, gained construction employment, and lost services.

### Projects and Initiatives Highlighted by the Community

CEDS and information gathered from Tribal strategic plans, listening sessions, local table meetings, and surveys highlighted the following projects and initiatives:

- ◆ Kelp, fungi, and abalone farming; hemp and hempcrete
- ◆ Local foods economy: food hubs, farm-to-table, dockside fish markets, local meat processing facilities
- ◆ Eco-tourism, outdoor recreation
- ◆ Monetizing forest carbon sequestration as a potential opportunity for forested and grassland ecosystems
- ◆ Ecosystem restoration and other natural resource management as possible career choices
- ◆ Aquaculture Innovation Hub
- ◆ Noyo Harbor Collective
- ◆ Tribal EcoRestoration Alliance