



Southern Border Coalition

Regional Plan Part 2

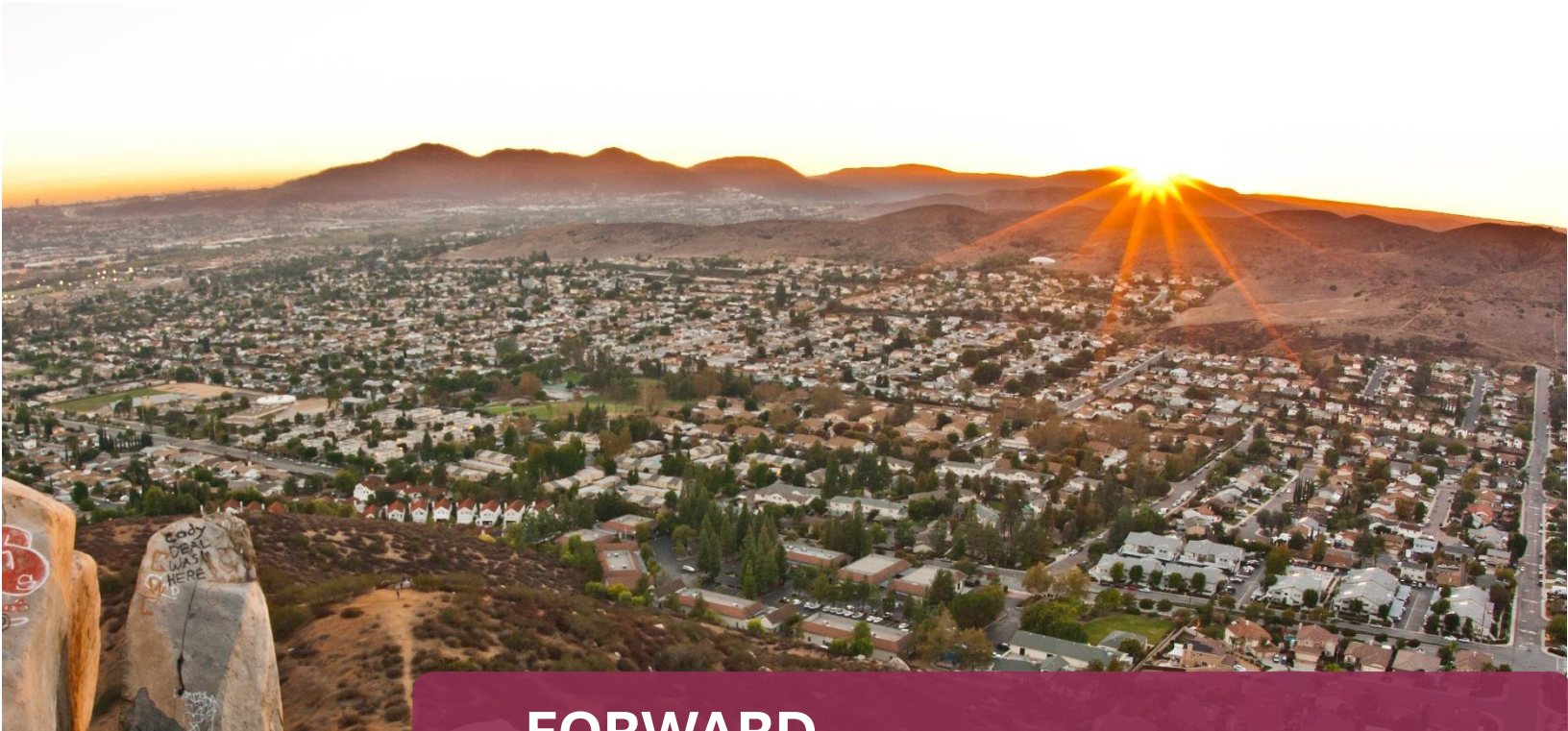
Draft Updated: December 6, 2024



Table of Contents

<i>FORWARD</i>	<i>3</i>
<i>EXECUTIVE SUMMARY</i>	<i>7</i>
<i>CHAPTER 1: MISSION, VISION, AND REGIONAL GOALS</i>	<i>14</i>
<i>CHAPTER 2: EQUITY AND DATA LIMITATIONS</i>	<i>20</i>
<i>CHAPTER 3: OVERVIEW OF THE REGIONAL PROFILE AND SWOT</i>	<i>31</i>
<i>CHAPTER 4: CROSS-CUTTING STRATEGIES</i>	<i>43</i>
<i>CHAPTER 5: REGIONAL STRATEGIES</i>	<i>53</i>
<i>5.1 Foundational Industries.....</i>	<i>54</i>
<i>5.2 Locally Serving Industries</i>	<i>86</i>
<i>5.3 Tradeable Industries.....</i>	<i>122</i>
<i>CHAPTER 6: A PATH FORWARD</i>	<i>219</i>
<i>CHAPTER 7: IMPERIAL COUNTY TRIBAL COMMUNITIES STUDY REPORT.....</i>	<i>225</i>
<i>REGIONAL PLAN PART 2 SOURCES</i>	<i>259</i>

¹ Photo by Dalberg.



FORWARD

The Southern Border Coalition (SBC) Regional Plan Part 2 builds upon the baseline economic assessment outlined in Part 1, providing a comprehensive strategy for creating new, high-quality jobs in priority industries aligned with California Jobs First objectives. The overarching goal is to grow the Southern Border region's economy and improve the wellbeing of all residents, including historically disinvested communities, by focusing on tradeable, locally serving, and foundational industries that will collectively support the state's transition to a carbon-neutral economy. The Southern Border region, encompassing Imperial and San Diego counties, reflects both diverse geographies and deep-rooted socio-economic disparities shaped by a history of systemic racism. These structural inequities have limited community access to education, healthcare, and economic opportunities and contributed to injustices for Tribal communities, farm workers, LGBTQIA+ individuals, and other historically disinvested groups, particularly in rural and remote areas. Exclusion from traditional planning processes has further entrenched disadvantages, leaving these communities underrepresented in regional decision-making and limiting access to resources and opportunities.

These same dynamics have influenced the development of this plan, where structural requirements and established planning norms have perpetuated inequities for those historically excluded from these processes. Recognizing these injustices, the Southern Border Coalition (SBC) actively sought to address these gaps by integrating frequent engagements

² Photo by slworking2, "View from the mountain top at sunset. Blue Rock / Magnolia Boulders mountain in Santee, CA" (CC BY-NC-SA 2.0). Available at: <https://www.flickr.com/photos/slworking/8298809677>.

with Sector Leads³, centering community input while aligning the report with state requirements—actions designed to better reflect and serve the diverse needs of the region. Moving forward, SBC commits to sustaining and deepening these inclusive approaches, ensuring that every phase of activation and implementation actively prioritizes and advances equity for the region’s most underserved communities.

Each chapter of the revised Regional Plan Part 2 addresses specific challenges and barriers that must be overcome to achieve inclusive economic prosperity in the Southern Border region. Chapter 2 is specifically dedicated to equity limitations encountered by the SCB in developing this plan. It underscores the importance of addressing structural inequities and recognizing the harm caused to disinvested and Tribal communities by the consolidation of economic wealth, privilege, and associated ideologies on the lands, airs, and waters of the State of California (For additional details, please refer to Chapter 7, “Imperial County Tribal Communities Study Report.”). This plan seeks to prioritize strategies that support individuals from disinvested groups, typically those from socioeconomic backgrounds with lower rates of educational attainment, in recognition of the historic inequities driving their unique needs.

...This plan seeks to prioritize strategies that support individuals from disinvested groups, typically those from socioeconomic backgrounds with lower rates of educational attainment, in recognition of the historic inequities driving their unique needs....

While many challenges such as access to quality jobs, affordable housing, and healthcare affect disinvested populations broadly, differences in lived experiences and systemic barriers require nuanced strategies. For example, Tribal communities in the Southern Border region, including the Kumeyaay/Diegueno, Luiseño, Cahuilla, and Cupeño, have long endured the compounded impacts of historical inequities because of ongoing colonialism (Imperial Valley Desert, 2024; Tribal Nations of San Diego County, 2013). Communities across the 19 federally recognized tribes in Imperial and San Diego Counties—the most tribes of any region in the state—face significant challenges related to economic disinvestment, limited access to healthcare and education, and environmental threats to ancestral lands. American Indian/Alaska Native peoples are both among the first to experience the direct effects of climate change and the most burdened by their aggregating consequences. Recognizing the distinct needs and priorities of these Tribal nations, this plan includes a standalone chapter written by Imperial County Tribal Sector Leads.

³ Sector Leads are a body of locally elected representatives from across the region; they are responsible for approving the Regional Plan and are expected to represent their sector’s interests (e.g., disinvested communities, businesses, affinity groups, etc.) by fostering collaboration and ensuring community voices are appropriately integrated into the regional planning and decision-making process.

...Tribal communities in the Southern Border region, including the Kumeyaay/Diegueno, Luiseño, Cahuilla, and Cupeño, have long endured the compounded impacts of historical inequities because of ongoing colonialism (Imperial Valley Desert, 2024; Tribal Nations of San Diego County, 2013). Communities across the 19 federally recognized tribes in Imperial and San Diego Counties—the most tribes of any region in the state—face significant challenges related to economic marginalization, limited access to healthcare and education, and environmental threats to ancestral lands. American Indian/Alaska Native peoples are both among the first to experience the direct effects of climate change and the most burdened by their aggregating consequences. Recognizing the distinct needs and priorities of these Tribal nations, this plan includes a standalone chapter written by Imperial County Tribal Sector Leads...

Similarly, other disinvested communities face long-standing barriers to economic opportunity. Immigrants, refugees, and non-residents experience hurdles related to language accessibility and legal status. LGBTQIA+ individuals often navigate unique challenges, including risks to safety, access to affirming healthcare, and representation in decision-making processes. Youth and people with disabilities require tailored pathways to education, workforce development, and training. By acknowledging the specific needs of disinvested communities, the plan aims to ensure everyone can participate in the region's development.

Given the historical failure of many projects to benefit disinvested groups, it is essential to prioritize inclusive economic development by ensuring that public incentives deliver measurable and meaningful benefits to the community. This document aims to highlight cross-cutting (i.e., industry-agnostic) strategies, industry-specific strategies, and guidelines for equity, climate, and job access considerations that work to ensure projects benefit disinvested community members, as well as the economy at large. The plan prioritizes industries that will, to the greatest extent possible, provide long-term jobs with living wages^[OBJ] to current local community members in all corners of the counties (e.g., including Tribal lands and unincorporated zones).

From April 2024 to August 2024, the SBC led expansive community engagement efforts, including approximately 218 meetings, presentations, trainings, and community outreach events, leading up to the first submission in September. After the state requested revisions to the initial submission, the SBC Co-Conveners and the Regional Task Group (which includes Sector Leads and community members) continued to engage heavily between September and November 2024. This current report iteration reflects the robust efforts already made by the Regional Task Group and seeks to build upon those efforts in a way that is closely aligned with state requirements. By highlighting foundational, locally serving, and tradeable industries, the plan aims to highlight the interconnectedness of investments in a holistic regional strategy for inclusive economic growth. For example, foundational digital and community infrastructure

projects are critical to supporting locally serving community health and water industries, which in turn lay the groundwork for tradeable agriculture, clean energy, and manufacturing practices, all of which have impacts on the growth and sustainability of community health and housing affordability.

On behalf of the entire Southern Border Coalition, we want to acknowledge the significant efforts made by all the Southern Border Coalition Co-Conveners, Sector Leads, and community partners, as well as participants from the State of California, who stepped up to make Part 2 of the Regional Plan a reality. The development of this plan, and thoughtful engagement throughout the drafting process, has represented countless hours of time. We hope that the industries and proposed strategies outlined in this plan represent a new chapter for the region to build inclusive economic growth.



EXECUTIVE SUMMARY

Overview

The Southern Border Coalition (SBC) Regional Plan Part 2 builds upon the baseline economic assessment outlined in Part 1, providing a comprehensive strategy for creating new, high-quality jobs in priority industries aligned with California Jobs First objectives. This Plan aims to grow the Southern Border region's economy and improve the wellbeing of all its residents, with a focus on historically disinvested communities, by identifying (1) foundational, (2) locally serving, and (3) tradeable industries that will collectively support the state's transition to a carbon-neutral economy.

Vision and goals

The Southern Border region of California, encompassing Imperial and San Diego counties, has the mission to create a comprehensive regional economic plan supporting high road jobs*, an inclusive transition to a net-zero economy, and empowerment of disinvested communities. In pursuit of this ambition, the region has established and articulated three primary goals:

1. Increase the number of quality jobs with equitable access
2. Build climate-resilient communities and economies
3. Elevate the voices of disinvested communities

⁴ Photo by Carmine Savarese, "Imperial County!" (CC BY-NC-ND 2.0). Available at: <https://www.flickr.com/photos/carminesavarese/3136973715/>.

*Note: High road jobs, as defined by the California Workforce Development Board, is a job in which employers pay family supporting wages, compete based on the quality of their services and products, and engage workers and their representatives in the project of building skills and competitiveness

The SBC aims to achieve these goals while keeping equity, community engagement, inclusivity, transparency, and sub-regional contextualization at the forefront of decision making.

Equity and data limitations

The Plan acknowledges significant challenges in data collection and equity, particularly for underrepresented and disinvested populations. These include intersectional barriers, weighted civil liberties, undercounting of various populations (e.g., Tribal, LGBTQIA+, unhoused), and the impact of cultural dilution on regional prosperity. SBC has taken steps to address these limitations, including hiring equity consultants and implementing guardrails in their Bylaws to promote more inclusive data collection and planning processes. SBC seeks to acknowledge these limitations when making decisions around the allocation of California Jobs First funding.

Regional snapshot and SWOT

The Southern Border region is home to nearly 3.5 million people and faces significant demographic and economic disparities. While San Diego County has experienced steady population growth and economic development, parts of both counties struggle with high unemployment rates and concentrated poverty. The region is predominantly composed of people of color, with Hispanic or Latino residents making up ~35% of San Diego County, and ~85% of Imperial County (U.S. Census Bureau). Educational disparities are prevalent, with many adults lacking college degrees, particularly in Imperial County. Wage gaps persist, disproportionately affecting Latino/a workers, and communities of color experience high levels of poverty and environmental health risks.

The region's strengths include a diverse range of industries, innovation and research capabilities, strategic geopolitical position along the U.S.-Mexico border, and a commitment to environmental sustainability. Weaknesses include economic disparities, high unemployment rates (especially in Imperial County), housing affordability issues, and infrastructure inadequacies. Resource management, particularly water, is a critical challenge for both counties.

Opportunities for the region lie in expanding sustainability and green industries, leveraging existing capabilities for workforce development, and capitalizing on cross-border economic synergies. The growth of renewable energy sectors, particularly in Imperial County, presents significant potential for economic development. However, the region also faces threats from climate change risks, rapid technological change and automation, challenges for small businesses in competing for workers, and overall economic instability. Addressing these challenges while leveraging the region's strengths will be crucial for fostering equitable economic growth and improving quality of life for all residents.

Cross-cutting strategies

This document elevates three industry-agnostic, cross-sector strategies, aiming to promote economic mobility, resilience, and growth across industries in Imperial and San Diego Counties. These strategies include:

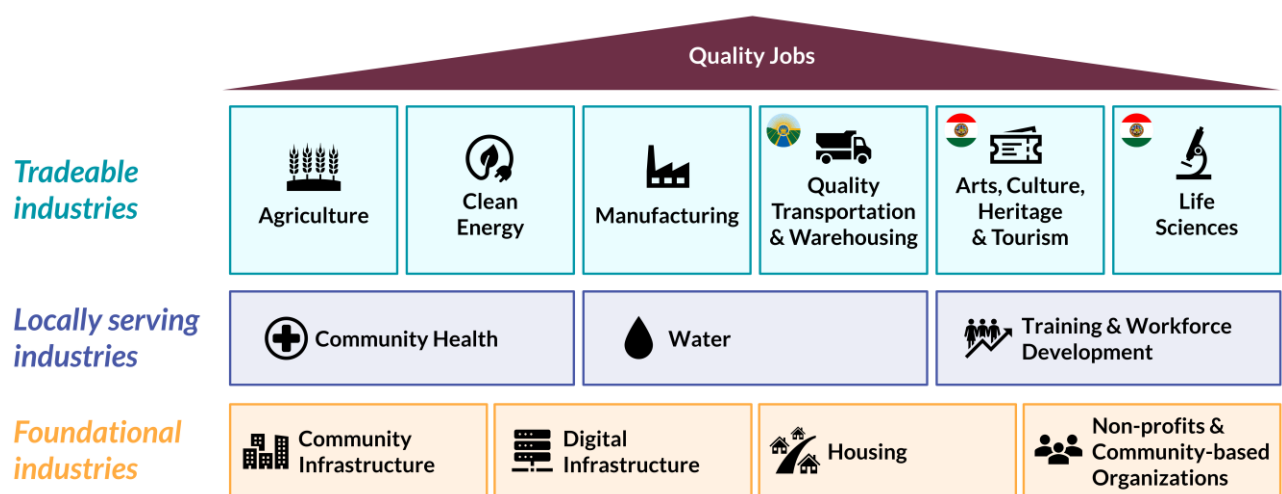
1. **Community Ownership and Respectful Engagement**, which focuses on empowering disinvested communities through inclusive implementation practices and active participation in decision-making.
2. **The Small Business, Cooperative, and Entrepreneurship Ecosystem**, which aims to strengthen small businesses by providing financial capital, technical assistance, and additional resources.
3. **Climate Resilience**, which supports the expansion of sustainable infrastructure, green technology, and community-focused adaptation to climate impacts.

Each strategy outlines specific actions to address challenges spanning multiple areas of the economy, integrating local insights with overall priorities.

Regional strategies

The regional economic development strategy outlined in this document includes a three-part approach with: (1) foundational, (2) locally serving, and (3) tradeable industries and their supporting strategies.

Figure 1: Overview of Tradeable Industries, Locally Serving Industries, and Foundational Industries in the Southern Border



Foundational industries cover critical areas, in this case, community infrastructure, digital infrastructure, housing, and nonprofits and community-based organizations, that are pre-requisites for economic development.

- **Community Infrastructure** represents the physical systems and services, like sidewalks, roads, waste management, and other public works, that act as the backbone of community functionality and economic opportunity. Strategies to develop this industry focus on infrastructure enhancements tailored to disinvested communities, expanding the capacity of local workforce to review, approve, and develop projects, facilitating partnerships between funding agencies and applicants, and aligning projects to be climate-resilient (e.g., via urban greening, reducing fire risk, a green public transport fleet, etc.).
- **Digital Infrastructure** represents the essential digital systems, networks, and services—such as high-speed internet, and digital public services—that support connectivity, communication, and equitable access to digital resources, enabling communities to thrive in the digital economy. Strategies to develop this industry focus on expanding equitable digital connectivity, empowering communities through digital literacy and engagement, creating pathways to digital economy jobs via workforce development, and aligning broadband expansion with environmental sustainability.
- **Housing** represents the availability of safe, stable, and affordable living spaces, addressing homelessness and supporting economic stability. Strategies to develop this industry focus on streamlining affordable housing development, promoting community access, ownership and anti-displacement strategies, and integrating sustainability and climate resilience into housing practices.
- **Nonprofits (NPOs) and community-based organizations (CBOs)** represent the mission-driven entities dedicated to providing essential services and addressing critical resource gaps for disinvested communities. Strategies to develop this industry focus on expanding the capacity of NPOs / CBOs in areas like advocacy, emergency response, community engagement, and upskilling, and supporting the clean energy transition.

Locally serving industries cover industries that circulate money within the local economy by selling goods and services to customers inside the county. Typically, these industries are essential for high quality of life. These industries, including community health, water management, and workforce training, create jobs tied to local demand.

- **Community Health** encompasses the branch of public health that focuses on the health outcomes of groups of individuals, emphasizing the interconnectedness of social, economic, and environmental factors in promoting overall well-being. Strategies to develop this industry focus on improving health outcomes by addressing social

determinants of health, enhancing workforce development and retention in healthcare, developing community health worker (CHW) programs for culturally responsive care, and expanding telehealth services through digital infrastructure, education, and accessibility in underserved areas.

- **Water** refers to resource management, including water source diversification, conservation, recycling, and green infrastructure. Strategies to develop this industry focus on advancing water resource management by expanding training and workforce development, investing in green infrastructure and ecological practices (e.g., water recycling and reuse programs), advancing smart water resource management, and increasing desalination capacity through innovative research and development.
- **Training & Workforce Development** refers to the creation and implementation of programs, resources, and support systems that equip individuals with the skills, training, and career pathways necessary to enter, advance, and thrive in the labor market, including education, training, mentorship and career services. Strategies to develop this industry focus on strengthening career pathways by supporting K-12 foundational skill development, enhancing access to workforce resources and support services (e.g., by creating a regional workforce information portal and deploying mobile workforce development units), and investing in scholarships, apprenticeships, and lifelong learning initiatives.

Tradeable industries cover industries that bring outside money into the local economy by selling local goods and services to customers outside of the Southern Border region. These industries, including agriculture, clean energy, manufacturing, arts, culture, heritage & tourism (San Diego only), life sciences (San Diego only), and quality transportation & warehousing (Imperial only) create jobs tied to demand within and outside of the region.

- **Agriculture** refers to crop production, organic farming, ranching, food processing, agricultural technology (agtech), and the distribution of agricultural products. Agriculture is a foundational pillar of economic stability in the region, particularly in Imperial County where it is the largest source of employment. Strategies to develop this industry focus on strengthening career pathways by providing training opportunities and apprenticeships, improving working conditions, and boosting local hiring. They also emphasize supporting and modernizing existing small farms as well as creating new community farms and businesses in disinvested communities. This includes creating regional food hubs and developing funding opportunities for equipment and materials that can increase farm productivity and reduce water consumption. Finally, the plan proposes to expand agricultural processing in the region, creating additional jobs while retaining additional economic value in the region.

- **Clean Energy** encompasses renewable energy sources such as solar, wind, and geothermal, alongside emerging technologies like green hydrogen, sustainable aviation fuels, and energy storage systems. Strategies to develop this industry focus on expanding community benefits by aiming to ensure equitable access to affordable clean energy, creating high-quality, long-term jobs, and supporting local hiring. By advancing established technologies like solar and geothermal while fostering innovation in emerging sectors such as green hydrogen and sustainable aviation fuels, the region is positioned to drive economic growth and environmental sustainability.
- **Manufacturing** represents a cross-cutting industry driving economic growth and innovation across key sectors such as agriculture, clean energy, and life sciences. Strategies to develop this industry focus on creating high-quality jobs with strong worker protections and clear career pathways, promoting opportunities for advancement beyond entry-level roles. By collaborating with labor unions, colleges, and businesses, the plan emphasizes local hiring, apprenticeships, and training programs tailored to high-tech and assembly sectors. It also promotes the development of environmentally responsible industrial parks in Imperial County, supporting nearshoring and cross-border trade, while strengthening value chains and fostering innovation through R&D hubs in San Diego County.
- **Arts, Culture, Heritage & Tourism** includes artistic goods, services, and experiences that are often integrated into tourism and cultural attractions, with high economic potential and opportunities to drive sustainable and eco-friendly practices. Strategies to develop this industry focus on fostering creative entrepreneurship by supporting artists and small businesses, supporting the growth of the creative economy through workforce development, elevating community-led initiatives in the creative ecosystem with a focus on supporting disinvested community members, and strengthening cross-sector collaboration and intersectional partnerships.
- **Life Sciences** encompasses biotechnology, pharmaceuticals, medical devices, the manufacturing of these technologies, and research and development (R&D). The region houses one of the largest life sciences clusters in the United States with high economic and environmental potential. Strategies to develop this industry focus on improving the talent pipeline with a diversity, equity, and inclusion lens, expanding life sciences jobs in manufacturing, aiming to facilitate union participation and access for disinvested communities, investing in locally benefiting lab space and research infrastructure, and expanding access to capital for entrepreneurs from disinvested communities.
- **Quality Transportation & Warehousing** spans passenger and cargo transport via air, rail, water, road, and pipeline, along with warehousing and storage services. This industry is vital for facilitating the movement of goods in national and global markets. Strategies to develop the transportation and warehousing industry focus on connecting disinvested communities to job opportunities, supporting career advancement through

training and apprenticeships, upgrading developments to meet environmental and labor standards, and positioning Imperial County as a logistics hub across both local industries and cross-border trade.

The plan emphasizes the opportunity to build out tradeable industries alongside locally serving and foundational industries in a way that is symbiotic. This balanced approach of supporting foundational, locally serving, and tradeable industries aims to drive inclusive economic growth, create diverse job opportunities, and ensure long-term prosperity for the region.

A Path Forward

As the SBC moves into activation and implementation, it should keep in mind a number of key considerations across the short, medium, and long-term. Short-term (1-6 months), structural changes in governance can help clarify roles and responsibilities. Determining selection criteria for Catalyst pre-development funds and facilitating the project intake process will be essential in moving toward full-scale projects. In the mid-term phase (6-24 months), the Coalition can use economic and impact criteria to award funding. Finally, in the long-term (24+ months), the Coalition can apply for more external funding that is aligned with Regional Plan objectives and solidify processes for updating its economic development strategies, as needed. Across all stages, the Coalition will work to ensure the plan emphasizes continuous community engagement, participatory policymaking, and robust monitoring guidelines to ensure all projects remain relevant and effective in driving positive change.

Imperial County Tribal Communities Study Report

The Imperial County Tribal Communities Study Report summarizes research conducted with Imperial County (IC) Tribal communities through four workshops held at the Fort Yuma Quechan Indian Tribe Reservation. It emphasizes the importance of understanding historical and geographical contexts when considering economic development and partnerships for IC Tribal communities. The report stresses that all lands, air, and waters affected by climate change in IC are Native lands, and that colonial borders have disrupted traditional cultural landscapes.

The research highlights the need to situate climate change within colonial and industrial contexts to address systemic barriers of inequity and increase adaptive capacities for IC Tribal communities. It emphasizes the importance of Indigenous Knowledge (IK) in accurately capturing the impacts of climate change on culturally and ecologically significant lands. The report argues that IK is inextricably tied to Indigenous sovereignty and should be considered a peer to mainstream Western scientific knowledge.



CHAPTER 1: MISSION, VISION, AND REGIONAL GOALS

California Jobs First

California Jobs First, formerly known as the Community Economic Resilience Fund (CERF), is a statewide initiative to support equitable, sustainable economic growth through the creation of high-quality jobs (California Economic Resilience Fund, 2022). Since its inception in 2022, California Jobs First has taken a locally based, community-and-worker-informed approach to strengthening economic resilience during the state’s transition to a carbon-neutral economy. This “high road” approach favors businesses that invest in their workforces, pay living wages, and provide new opportunities to historically disinvested populations, including low-income residents and communities of color (California Workforce Development Board, 2024).

California Jobs First is comprised of two phases: a Planning Phase, during which each region engages local stakeholders in the development of a strategic plan for inclusive economic growth, and an Implementation Phase, during which each region works to access funding to support specific projects aligned with its published strategy. The Planning Phase, which spanned October 2022 to the end of 2024, was structured around a two-part Regional Plan.

⁵ Photo by slworking2, “Secluded Waterfalls in the Mountains of San Diego County” (CC BY-NC-SA 2.0). Available at: <https://www.flickr.com/photos/slworking/49779768071/in/photostream/>.

Submitted in December 2023, Part 1 of the Regional Plan provided a comprehensive snapshot of both counties' socioeconomic landscape, analyzing the local economy, labor market, climate, environment, and public health. This foundational analysis highlighted the unique characteristics, history, and culture of each area within the SBC, creating a data-informed understanding of the region's strengths and challenges.

In Part 2—the forward-looking component of this two-part Regional Plan—the aim is to establish an economic development strategy that leverages SBC's priority industries, job opportunities, and strategic advantages. Aligned with the California Jobs First initiative, this strategy emphasizes equity, sustainability, job quality and access, and economic competitiveness and resilience. By advancing a cohesive narrative that values the individuality of each community, this plan presents a historic opportunity for SBC's distinct areas to cultivate new partnerships, share resources, and coordinate strategies. Ultimately, this collaborative approach aims to ensure that each community's unique strengths reinforce collective goals at both state and national levels.

The Southern Border Coalition (SBC)

The Southern Border Coalition (SBC), encompassing Imperial and San Diego Counties, is one of 13 economic regions in the California Jobs First Program. The Coalition includes Co-Conveners, Sector Leads, and a group of environmental justice organizations, regional economic development entities, labor unions, community-based organizations (CBOs), local governments, educational institutions, and Tribes, all collaborating to develop an equitable economic development plan for the region. In addition to its inclusive structure, SBC has strived to engage residents directly in California Jobs First's Planning Phase via a series of subregional community meetings:

- From April 2024 to August 2024, the SBC held approximately 218 meetings, presentations, trainings, and community outreach events, including:
 - 65 Working Group meetings
 - 76 Sector meetings
 - 15 Sector Lead meetings with Regional Plan Part 1 contractors
 - 20 Subregional Co-Convener meetings
 - 26 Co-Convener meetings
 - 8 Subregional Task Group meetings
 - 4 Regional Task Group meetings
 - 4 Education and Training events
- From September 2024 through November 2024, 6 additional meetings were held with Co-Conveners and 7 with the Regional Task Group to work toward this submission.

The results of all these efforts are reflected in the chapters below. While this draft has been modified from the original submission in August 2024 to better meet state guidelines, the goal has been to meaningfully adjust content only where needed, and leverage feedback from the Regional Task Group in guiding any changes.

Mission and Vision



Mission

“Our mission is to develop a comprehensive regional economic plan that supports high-road jobs, an inclusive transition to a net-zero economy and empowers, and uplifts disinvested communities by fostering equity and creating sustainable opportunities for growth.”



Vision

“Our vision is to foster inclusive and sustainable economic development in the Southern Border Region by empowering and uplifting disinvested communities and ensuring equitable access to opportunities, resources, and growth.”

The SBC recognizes that disadvantaged communities often face systemic barriers and lack access to the resources necessary for sustainable development. Therefore, the SBC, through the California Jobs First Planning Process, has been committed to providing the support, tools, and training required to empower individuals and communities to unlock their full potential. The focus is on addressing the root causes of economic inequality and advocating for policies and investments that promote fairness and justice.

By implementing inclusive practices that support meaningful participation in leadership and decision-making, we aim to bridge the gaps that hinder the progress of disinvested communities and create a level playing field for all. Individuals can be the leaders in their economic landscape, fostering self-sufficiency and long-term success within their communities. We strive to create an environment where everyone has an opportunity to thrive, contribute, and benefit from sustainable economic development.

Regional Goals and Outputs

The SBC aspires to create economic opportunities for our communities to thrive and prosper for generations to come. In alignment with the SBC’s commitment to equity, transparency, and lasting community engagement, this section outlines regional goals and their

corresponding measurable outputs. Each goal is accompanied by engagement metrics that demonstrate the SBC’s impact and progress toward meaningful change throughout the region.

The Regional Plan has three primary goals:

1. Increase the number of quality jobs with equitable access

- Promote job creation across foundational, locally serving, and tradeable industries, promoting career pathways that are supported by comprehensive workforce development programs and that align with labor market demands and reflect community priorities now and into the future.

2. Build climate-resilient communities and economies that are adaptable, resilient, and sustainable

- Support communities and local economies in adapting to climate impacts by strengthening infrastructure, fostering sustainable businesses and jobs, and ensuring people can thrive in a changing environment.

3. Elevate the voices of disinvested communities, which have historically been financially, socially, and politically disenfranchised

- Ensure that historically disinvested communities have a role in decision-making, policy development, and leadership in the regional workforce and economic development processes.

To support these goals, the SBC commits to **equity, community engagement and co-creation, inclusivity, transparency, and sub-regional contextualization.**

Table 1: Anticipated SBC Outputs

Key pursuits	Description	Outputs
Equity	Removal of systemic barriers and provision of equitable access to resources, opportunities, and quality of life for all community members.	• Develop the Regional Roadmap to include high-quality job creation targets in sustainable industries, informed by the needs of disinvested communities. • Ensure Sector Leads include at least 50% representation from entities working with disinvested communities. • Ensure the updated Regional Part 2 Plan continues to

		center disinvested communities.
Community Engagement and Co-Creation	Engagement with a diverse range of stakeholders, including historically disinvested communities. By listening to these communities' perspectives and fostering collaboration, the SBC aims to work together to address the root causes of inequities.	• Host four Subregional Sector meetings to gather unique insights from each sector. • Track the number of public meetings held to inform and gather input for the Regional Plan. • Ensure the Regional Task Group has full and fair opportunity to provide feedback to the updated Regional Part 2 Plan
Inclusivity	Challenging systemic inequality by empowering disinvested communities through education, access to capital, and inclusive decision-making.	• Measure engagement levels in decision-making by residents and businesses in disinvested communities, with resources deployed to boost participation as needed. • Provide translation and interpretation services to ensure accessibility for Spanish-speaking and other community members. • Provide the updated Regional Part 2 Plan in Spanish.
Transparency	Commitment to transparent, accountable processes, regularly assessing our progress and impact to ensure sustainable quality-of-life improvements.	• Track community meetings that provide information and gather input on the Regional Plan. • Engage at least 50 non-Coalition community members in Phase I and Phase II planning activities. • Ensure all community feedback for the updated Regional Part 2 Plan is tracked, and either incorporated, or a clear rationale is provided for why feedback was not incorporated.

Subregional Contextualization	Celebration of unique perspectives across subregions; focusing on these distinctions helps the SBC build resilient communities with tailored solutions.	• Identify investment areas in the Regional Roadmap to prepare for green industries and ensure economic opportunity across disinvested communities. • Develop targeted strategies in the Roadmap for building wealth in disinvested areas. • Ensure the updated Regional Plan Part 2 continues to highlight the unique geographic, socioeconomic, and demographic experiences and needs of each subregion.
--------------------------------------	---	--

The Southern Border Coalition’s participation in the California Jobs First initiative represents a transformative opportunity to build a resilient, inclusive, and sustainable regional economy. By integrating community voices, prioritizing equity, and acknowledging sub-regional nuances, the SBC aims to develop a comprehensive plan that supports a just transition to a carbon-neutral, high-road economy. Through a collaborative approach that aligns workforce development, infrastructure improvements, and economic growth strategies, the Regional Plan aims to create a roadmap for a future in which all communities can thrive.



CHAPTER 2: EQUITY AND DATA LIMITATIONS

This chapter outlines the significant equity challenges the Coalition encountered while developing the Regional Plan, particularly due to data limitations and the constraints of traditional economic development practices. These challenges hindered opportunities for community participation, especially for individuals from disinvested communities.

This report is the second version submitted to the State of California, after the community-informed regional plan prepared by the Southern Border region was rejected by the state for not meeting the state's definition of traditional economic development standards. In order to complete the regional plan and gain access to future implementation funds, the Southern Border region adhered to the conditions presented by the state to hire a consultant (Dalberg Advisors) to incorporate the strategies, ideas, and spirit of the Southern Border Regional Plan Part 2 in alignment with the state standards. In this capacity, two additional tradeable sectors were added to the plan (Life Sciences in San Diego County, and Warehousing and Logistics in Imperial County). All county-specific foundational and locally serving industries were expanded to become SBC-wide strategies, taking into account regional nuances and capabilities. Finally, data and language were updated throughout the report to ensure alignment with state submission guidelines. In summary, the goal of re-submission was to keep as much of the original content as possible, while thoughtfully augmenting and reframing the report in a way that met state requirements.

Prior to engaging the consultant, the Southern Border Coalition faced many challenges including contracting delays, trouble engaging contract researchers, and gaps in data, but still produced a viable Regional Plan that was approved by the Coalition by the original deadline of

⁶ Photo by Dalberg Advisors.

August 31st, 2024. The Southern Border Coalition wishes to acknowledge the individual community leaders who contributed to the writing of the plan, as well as the collective communities of Imperial and San Diego Counties who engaged over 12 months to create a plan informed by community priorities at the grassroots level.

In the context of this report, "equity" means fairness and impartiality. It refers to the idea that everyone, regardless of their background, should have equal opportunities and resources. In the case of the Coalition, it means ensuring that the plan is developed in a way that addresses the needs of all community members, especially those who have experienced disinvestment.

While these equity challenges are not unique to the Southern Border Region, the Southern Border Coalition believed that accepting the status quo was not a tenable option. To support its equity-based and community-centered work, the Coalition adopted Bylaws to provide guardrails and processes to address these limitations proactively. For example, the Coalition Bylaws (Article I, Section 4) provide the following:

- Regional and Subregional Task Groups may recommend data, research, and other information be included in the Regional Summary of the Regional Plan Part 1 and be considered when crafting the roadmap in Part 2 of the Regional Plan;
- Hyperlocal data, oral histories, and other research methodologies historically excluded from local planning processes shall be brought into the research and/or plan development process;
- Data drawn from prior studies, especially information related to disinvested communities, will be vetted by the Subregional Task Groups to ensure misconceptions, inappropriate generalizations, and inaccurate collection models are not amplified and brought into the regional planning process;
- The Subregional Task Groups may develop further policies that meet the unique needs of their area and facilitate input and engagement about stakeholders, emphasizing disinvested communities.

The guardrails included in the Bylaws provide strategies to prevent further exclusion of critical data necessary to inform understanding of the challenges and needs of disinvested communities. These guardrails also prescribe data collection policies that are tailored to communities in order to foster a more equitable and inclusive approach. The Coalition has taken other steps towards engaging the community in an inclusive and equitable manner. In April 2024, the Coalition hired Balmir Inclusive, an equity consultancy, to provide consultation on planning and implementation of activities in support of the Coalition's mission and values.

The following subsections further identify and discuss the data and research challenges.

Intersectional Barriers in Underrepresented and Disinvested Populations

Significant data collection challenges impact a range of disinvested communities. This chapter provides an overview of key challenges in data collection for various disinvested communities. These challenges include limited access to healthcare, the digital divide, educational disparities, gaps in cultural competency within public service, the impacts of gentrification, criminal justice disparities, a lack of environmental justice, barriers to civic engagement, economic disparities, job inaccessibility, and challenges to fostering community resilience and adaptability (Keokham, 2022).

To make the data collection process more equitable, it is important to conduct equity assessment reports to identify and remove barriers to data gathering. The Equitable Data Working Group created by an executive order by President Joe Biden studied existing federal collection policies, programs, and infrastructure to identify inadequacies and provide recommendations. The overview of this report recommends the use of disaggregated data, which is data that can be broken down and analyzed by race, ethnicity, gender, disability, income, veteran status, age, and other key demographic variables. Specifically, this working group identified uses for equitable data, which are generating disaggregated statistical estimates to characterize experiences, increasing non-federal research and community access to disaggregated data, and conducting robust equity assessments of federal programs (Nelson, 2022).

The Coalition made efforts to source and use equity-driven data by hiring independent equity consultants to conduct their own assessment report. Balmir Inclusive reviewed, evaluated, and provided recommendations on the current Regional Plan development process through a diversity, equity, and inclusion (DEI) lens. The report was instrumental in identifying disparities in data collection and solutions moving forward. The analysis identified challenges in this Regional Plan which match intersectional barriers faced by underrepresented and disinvested communities. Areas of focus included disbursement of funds, governance structure, feedback and information flows, documentation usability, technology access, and language access (Balmir Inclusive, 2024).

Weighted Civil Liberties

Civil liberties, which are the basic rights and freedoms that protect individuals, are often assessed by counties based on population size, regional concentration, and "legal" full-time residency. This approach has led to handicapped and mismatched cultural norms of growth, overlooking the actual needs of communities. It creates a significant delay in addressing those

...individuals without traditional mailing addresses or proper documentation are often excluded from being counted as residents, which hinders their access to necessary resources...

needs because individuals without traditional mailing addresses or proper documentation are often excluded from being counted as residents, which hinders their access to necessary resources.

The lack of updated technology further worsens response times, making it challenging for communities to respond to individuals' needs promptly. Therefore, it is important to shift from merely counting population size, which can be inaccurate, to recognizing and addressing the true needs of the population (Smith, 2020; U.S. Census Bureau, 2023; U.S. Department of Homeland Security, 2023; Executive Order 13107, 1998).

In the text, "weighted civil liberties" suggests that the recognition and application of civil liberties are unevenly distributed, with some communities or individuals having their rights considered based on specific criteria like residency status or population concentration. This uneven consideration can lead to disparities in how communities are treated and whether their needs are adequately met.

Furthermore, the lack of commitment to implementing equity solutions is deepened by discordant cultural norms regarding time, communication, and moral apathy. The region could move beyond its disadvantaged status by actively engaging and listening to individuals with diverse skill sets and educational backgrounds from areas of need. The regions are not disinvested by the people; rather, they are mismanaged due to discordant cultural norms between people in need and people with opportunities to support them. The people are heavily invested in their communities' sustainability, and their voices should be heard and implemented in decision-making processes (Walker & Devine-Wright, 2008, Smith et al., 2023; U.S. Customs and Border Protection, 2014).

Undercounting the Imperial County Population

Fundamental errors in calculations in traditional counting regarding Imperial County's population continue to hinder attempts for representative data collection. The U.S. Census Bureau estimates that 43% of census tracts in Imperial County are very hard to count for various reasons. An overwhelming majority of residents comprise demographic groups that have been historically undercounted, including Latinos/as, Tribal, Black, and non-citizen populations.

Daytime population, also known as commuter-adjusted population, is also not adequately accounted for. Imperial County's unique border dynamics result in a large portion of the population living in Mexico and crossing the U.S.-Mexico border on a regular basis for work, family, recreation, and commerce. The U.S. Department of Transportation's Bureau of Transportation Statistics estimates that in 2023, the Calexico Port of Entry welcomed 2,815,354 pedestrians and 5,014,733 personal vehicles. A simple calculation dividing each of these numbers by the number of days in a year (365) produces a daily average of 7,713

pedestrian and 13,739 personal vehicle border crossings per day (U.S. Department of Transportation, 2024). In a county with a total population of about 180,000 and a labor force of 76,000, the number of people crossing the U.S.-Mexico border daily is a significant portion of the total population. As a result, local physical infrastructure is significantly underinvested, while accommodation and further considerations continue to be left unattended due, in large part, to inaccurate data collection.

Housing conditions related to high shares of renters, overcrowded units, mobile homes, and high unsheltered rates increase the difficulty for counting, especially when it comes to the Colonias of Imperial County. For example, in Slab City, an unincorporated area of Imperial Valley, the population shifts between approximately 150 in the summer and 4000 in the winter. Similarly, migrant workers move in and out of the county on a seasonal and sometimes a daily basis. A significant portion of the agricultural workforce in the Imperial Valley lives in Mexicali due to the lower cost of living and proximity to work. However, precise numbers are challenging to determine because they fluctuate with the agricultural seasons, and many workers are undocumented or work through informal arrangements. To put things into perspective, the Employment Development Department estimates there were approximately 19,751 migrant and seasonal farm workers employed in Imperial County over the year from 2022-23; the actual number is likely to be higher given significant undercounting (California Employment Development Department, 2023).

In the Colonias of Imperial County, "colonia" refers to a community within the mainly rural US-Mexico border region with marginal conditions related to housing and infrastructure; a significant portion of the population is composed of migrants, immigrants, and those experiencing homelessness (HUD, 2020). These communities face numerous challenges, including limited access to basic infrastructure, utilities, modern services, inadequate housing, and economic instability. Despite the pressing need for support, data limitations often hinder efforts to address these issues effectively. Accurate and comprehensive data collection is crucial for understanding the full scope of the challenges faced by residents and for developing targeted interventions that promote equity and improve living conditions. However, barriers such as language differences, mistrust of authorities, and the transient nature of the population complicate data gathering efforts.

According to HUD and the Imperial County Public Health Department, these communities often lack essential infrastructure and services (HUD, 2020; Imperial County Public Health Department, 2021). Reports from local nonprofits such as California Rural Legal Assistance highlight the need for culturally sensitive data collection methods to build trust and accurately capture the needs of residents (CRLA, 2007). By addressing these data limitations, the SBC can work towards a more equitable future for the Colonias of Imperial County.

Undercounting of Tribal Populations

Efforts to collect data on Tribal populations face substantial challenges, impacting the accuracy and comprehensiveness of demographic information. The Tribal population is significant and growing, and the U.S. Census Bureau estimates that the 2020 census undercounted American Indian/Alaska Natives by 5.64%. Not only is it the largest census undercount of any population group, but it is also substantially more than any other population group. Additionally, there is a shortage of consistent, coordinated, and disaggregated data on this population. As a result, representation in non-Tribal governments has been denied to hundreds of thousands of Tribal citizens nationwide.

Unique challenges to this population include lack of traditional mailing addresses and high rates of homelessness. According to the American Community Survey, the Tribal population experiences outsized rates of poverty, and confronts significant educational barriers, while having one of the youngest population groups.

Undercounting of LGBTQIA+

In Imperial and San Diego Counties, the LGBTQIA+ community remains significantly undercounted, a reality that obscures their true presence and needs. LGBTQIA+ people are ignored in census counts and flawed census questions lead to inaccurate data on gender identity. This underrepresentation stems from a combination of social stigma, fear of discrimination, and inadequate data collection methods (Human Rights Campaign, 2020). Many individuals within the community choose to remain invisible, wary of the potential repercussions of revealing their identities (Williams Institute, 2019). Given the recent media (New York Post, 2024; LA Times, 2024) regarding Calexico Mayor Raúl Ureña, the first openly trans mayor in the state, and his impeachment due to suggested transphobia, identifying LGBTQIA+ individuals has increased in difficulty. Consequently, the lack of accurate data hinders the allocation of resources and the development of supportive policies, leaving the LGBTQIA+ population without the quality care and compassion they deserve (National LGBTQ Task Force, 2021). This invisibility perpetuates a cycle of neglect, further diluting the rich cultural tapestry of Imperial and San Diego Counties.

In addition, members of the LGBTQIA+ community could be at increased risk of violence and disease, which may deter those in need from seeking help due to known apathy regarding recognition, education, and protection of the LGBTQIA+ population (Human Rights Campaign, 2020; Williams Institute, 2019). These risks could have a devastating impact on the LGBTQIA+ community, silencing voices and eroding data-driven support critical for community well-being (National LGBTQ Task Force, 2021).

Undercounting the Unhoused

In Imperial and San Diego Counties, the continuous unmet needs of homeless individuals remain a pressing issue. According to the 2022 Point-in-Time Count, there were over 1,200 homeless individuals in San Diego County, a number that has steadily increased over the past five years (Annual Homelessness Assessment Report: Part 1, 2022; San Diego Regional Task Force on Homelessness, 2022). Despite this growing crisis, resources and support services remain insufficient and are declining rapidly. Many homeless individuals face barriers to accessing healthcare, mental health services, rehab facilities, and housing with basic amenities like a roof or electricity, due to systemic inequities and a lack of coordinated holistic efforts. Data gaps further exacerbate the problem, making it difficult to allocate resources effectively and develop targeted interventions.

This persistent neglect leaves the homeless population vulnerable, perpetuating a cycle of poverty and instability that undermines the overall well-being of the community.

Impact of Cultural Dilution on Regional Prosperity

In both Imperial and San Diego Counties, the effects of economic growth on cultural preservation are becoming increasingly evident, particularly when it comes to the limitations of data collection in capturing the rich diversity of these regions. Cultural Dilution refers to the diminishing or weakening of a culture's unique elements when they are adopted or exploited by others, often for profit. This can happen through cultural appropriation, where aspects of a culture are taken out of context and used commercially, stripping them of their original meaning and significance. In Imperial County, long-standing cultural traditions are at risk as economic development initiatives often rely on data that simplifies complex identities into broad racial and ethnic categories. This oversimplification leads to policies and programs that fail to address the specific needs of various cultural groups, resulting in a slow but steady erosion of the community's unique heritage (Labor Market Research Centers, 2024; SANDAG, 2024).

San Diego County faces a similar challenge, where efforts to promote equity through initiatives like the Equity Impact Grant are undermined by outdated data collection methods that are usually not culturally or linguistically responsive to the local community. The reliance on old standards for reporting race and ethnicity can dilute the representation of smaller, distinct cultural groups. As a result, the rich cultural history of these communities is increasingly overshadowed by economic growth that does not fully recognize or support the diversity of its residents. This lack of nuanced data not only impacts the effectiveness of equity-driven programs, including in healthcare and education, but also contributes to the gradual disappearance of cultural practices and identities that have defined these communities, in

both counties, for generations. (San Diego County News Center, 2024; Data San Diego County, 2024).

Imperial County's cultural heritage is inextricably linked to both its communities and its remarkable natural landscape, highlighted by multiple natural wonders, like the world's only wandering geyser. The colonias, often sidelined in economic development efforts, are rich in tradition, with families maintaining their cultural practices despite facing significant socio-economic barriers. From farming to the historical rodeos, the resilience and spirit of the people plays a crucial role in preserving local culture. At the same time, natural landmarks such as the Salton Sea and the five lava dome volcanoes, with their critical role in the Pacific Flyway, and locations such as Bombay Beach and East Jesus in Slab City, are more than mere aesthetic features: they are integral to the region's identity. Yet the data used to guide development frequently fails to recognize these cultural and ecological nuances, leading to policies that threaten to erase the undeniably rich essence of Imperial County while displacing its people. The oversight in data collection and interpretation results in economic strategies that neglect the very factors that make the region distinct and prosperous (Labor Market Research Centers, 2024; SANDAG, 2024; Data San Diego County, 2024).

Underrepresentation of the Immigrant, Migrant, and Non-Citizen Population

Although the question regarding citizenship status was removed from the U.S. Census, willingness to participate for many individuals in the immigrant, migrant, and non-citizen population remains low. According to the California Budget & Policy Center, California is home to over 11 million immigrants comprising 28% of the state's population—the largest percentage of immigrant residents compared to any other state. Immigration status exclusions continue to affect the invaluable cultural and economic wealth immigrants bring to the state.

Demographic, educational, and linguistic characteristics specific to this population have not been fully accounted for in the past and the repercussions are continuing to have a damaging effect on participation and representation. Many in this population have limited voting rights and have low representation in decision-making policies. This impedes their ability to influence policies that directly affect their lives. Additional barriers in representation include limited access to healthcare and social services, education, funding, employment, career advancement, social and cultural inclusion, as well as legal and institutional discrimination. Community and Coalition members that are part of this population continue to struggle when it comes to accessing information critical for participation.

A specific part of this population is considered to be migrants, or temporary residents. These individuals and families migrate across the U.S. border and within the state in search of employment and opportunities for advancement. The underrepresentation of migrant populations is a significant issue that manifests in various areas such as political participation,

access to services, education, and employment. Regarding access to services and education, requirements make it difficult for children in this population to continue their education. Seasonal migrant workers are often required to move across county lines, increasing absences and in some cases school drop-out rates.

Exclusions are applied to migrants which limit access to affordable housing programs. The undercounting of this population also affects services like the Supplemental Nutrition Assistance Program, Early Head Start home visitation programs, home-delivered meals for seniors, Section 8 Housing, free and reduced-priced meals in schools, and Federally Qualified Community Health Centers. In Los Angeles alone, an estimated \$117 million to \$586 million dollars in federal funding could be lost across all these programs if Latinos/as are undercounted by 2% to 10% (UCLA Center for Health Policy Research, 2020).

The generational impact of immigration requirements can deeply affect immigrant families and their long-term economic and social outcomes. Key aspects affected by this are economic mobility and wealth building, family separation, educational opportunities, legal and social status insecurity, access to social services and benefits, impact on citizenship and civic participation, inherited disadvantages, cultural identity and assimilation pressures, and long-term economic contributions and growth.

One example of the generational impact of immigration requirements is the wealth of immigrant households. In 2021, immigrant households had significantly less wealth, (\$104,400) compared to those headed by a U.S.-born person (\$177,200). Furthermore, household wealth varies in the U.S. depending on whether the head of the immigrant household is Latino/a or not. For example, in 2021 the median net worth of a Latino/a immigrant household was \$35,400, the lowest among those analyzed. The median almost doubled for households headed by U.S.-born Latino/a people at \$68,000. Immigrant households that were non-Latino/a had a median net worth of \$234,000 and U.S.-born households \$194,900 (U.S. Census Bureau, 2022). This difference is magnified in Imperial County, where the Hispanic or Latino immigrant population is 30.5%, as well as in San Diego County, where the Hispanic or Latino immigrant population is 21.5%. Both counties have Hispanic or Latino populations significantly higher than the national average of 13.6% (U.S. Census Bureau, 2022).

Refugees and asylum seekers need access to information to navigate cumbersome systems while also needing support with mental health, social services, employment, education, and career pathways for them and their children. This specific population faces extreme dangers stemming from or aggravated by Border Patrol requirements. In San Diego County, refugees in Jacumba are geographically exposed and often turn themselves in to ask for asylum. However, they're taken to primitive campsites that lack shelter, food, water, and restrooms (Gars, 2024). In Imperial Valley, Border Patrol policies route asylum seekers through deadly desert areas resulting in preventable deaths (Rios, 2023).

Addressing the underrepresentation of this population requires comprehensive policies that promote inclusion, protect migrant rights, and ensure equal access to opportunities and services. This involves not only legal reforms but also initiatives aimed at improving cultural understanding, reducing discrimination, and empowering migrant communities to participate fully in society (e.g., via language access).

Literacy, Language Access, and Technology Access

Dissemination and collection of data is limited by literacy challenges that were not previously accounted for through the coalition bylaws. Language barriers were driven by gaps in interpretation services, a lack of translation devices, and accessibility of online platforms. For context, the Coalition's language services for oral communication (interpretation) and written communication (translation) of documents had an estimated total cost of \$135,087. Translation services included materials such as Google forms, meeting materials, Regional Plan Part 1 drafts and associated materials, Sector Lead applications, newsletters, and public comments, among others.

Interpretation services included interpretation for in-person, Zoom, and hybrid meetings: community, Sector, Subregional and Regional Task Group meetings, and any 'special' one-time meetings (e.g. Solidarity Economics events). Translation for the Regional Plan Parts 1 and 2 cost an estimate of \$125,000-\$150,000.

Coalition members such as Co-Conveners and Sector Leads with communications experience played mediation roles to bridge communication gaps. Further efforts to dismantle communication barriers related to simplifying language, providing alternative formats, support services, and user-friendly environments are needed. Literacy is one of the major civil rights issues of the current era. It is a deeply concerning crisis across the U.S. affecting children's futures and our nation's democracy. The National Assessment of Education Progress (NAEP) showed that less than half (43%) of fourth graders in the U.S. scored at or above proficient level, with students from disinvested populations having worse outcomes: only 17% of Black students, 21% of Latino students, 11% of students with disabilities, and 10% of multilingual learners in fourth grade can read proficiently (Radhika, 2022). Research suggests illiteracy is largely preventable (Socol, 2024).

Current language accessibility services do not always meet the specific needs for disinvested communities and tend to assume technical and technological literacy. In California, efforts are needed to improve the accessibility of technical material and increase the translation of material to different languages. Barriers go beyond limited access to language education and encompass a wide range of challenges. These include literacy gaps in areas such as health, technology, race, language, numeracy, finance, and culture. The persistent lack of investment

in and access to educational resources continues to fuel cycles of misrepresentation and misunderstanding.

Sector leads and coalition members are often expected to participate in meetings with high levels of sophisticated language and digital literacy that can be inaccessible for those who have been excluded from education and training services. The Employment Development Department provides services for resource-challenged individuals, including workshops targeting support related to resume building, job search skills, and training sessions (California Employment Development Department, 2024). Further development regarding vocational and skills training, employment support with mentorships, and mental health services related to literacy challenges would be greatly beneficial.

Understanding the needs of literacy-challenged populations involves recognizing the diverse factors that contribute to literacy difficulties and addressing them through comprehensive, accessible, and inclusive approaches.

Catalysts of Bias and the Pursuit of Equity

Statistics as a field has a complex history that is deeply intertwined with issues of racism and social discrimination. Originating in the 19th century, many statistical methods and data collection practices were developed during a time when racial and social biases were prevalent. These biases often influenced the way data was collected, interpreted, and used, leading to skewed results that reinforced existing social hierarchies. For example, early census data often undercounted disinvested communities, leading to a lack of representation and resources for these groups. Additionally, statistical methods were sometimes used to justify discriminatory policies, such as eugenics and segregation, further entrenching social inequalities. Inequities for the “disinvested” people of the southern border have persistently endured (Gould, 1996; Jackson & Weidman, 2004).

Despite advancements in the field, the legacy of these discriminatory practices continues to impact modern statistics. One significant limitation is the potential for bias in data collection and analysis. Even today, data can be influenced by the social perspectives and cultures of those who collect and interpret it, leading to results that may not accurately reflect the experiences of all communities. To address these issues, it is crucial to adopt a holistic and equity-focused approach to statistics. This involves critically examining the origins and methodologies of statistical practices, ensuring diverse representation in data collection, and actively working to eliminate biases. By doing so, we can create more accurate and inclusive statistical analyses that better serve all members of society, especially those powering America at the southern border (Anderson & Fienberg, 1999; Rothstein, 2017; Stone, 2020; Hersh, 2023; California Employment Development Department, 2021).



CHAPTER 3: OVERVIEW OF THE REGIONAL PROFILE AND SWOT

This chapter provides a summary of the Southern Border regional profile, and the Coalition’s assessment of the region’s strengths, weaknesses, opportunities, and threats (SWOT). For more detailed information, please refer to Part 1 of the Regional Plan, available on the Coalition’s website at <https://cajobsfirst.sdsu.edu/>.

Summary

California’s Southern Border Region, which includes Imperial and San Diego Counties, is home to nearly 3.5 million people. The region faces significant demographic and economic disparities, with challenges such as wage inequality, high unemployment rates, and concentrated poverty, particularly affecting communities of color (U.S. Census Bureau, 2024; National Equity Atlas, 2024). Wage growth has been uneven, with Latino/a and Black workers earning substantially less than their White and Asian counterparts. Unemployment is especially high in Imperial County, which consistently reports one of the highest rates in California. These economic challenges are further compounded by limited access to affordable housing, healthcare, and education, particularly in historically disinvested areas. Addressing these issues requires targeted efforts to promote equitable economic development, expand access to quality jobs, and ensure that all residents can benefit from future growth and opportunities.

⁷ Photo by Ken Lund, “Crossing into Imperial County, S.R. 78 near Ocotillo Wells, California (3)” (CC BY-SA 2.0). Available at: <https://www.flickr.com/photos/kenlund/5144654556>.

Overview of the Southern Border Regional Profile

The Southern Border region comprises approximately nine percent of California's population. Although both Imperial and San Diego Counties are located along the southern border, they differ significantly in demographics, heritage, geography, and economic conditions. For example, Imperial County has around 180,000 residents, while San Diego County's population is 3.3 million. The region is predominantly comprised of people of color, with Hispanic or Latino residents making up 85% of Imperial County's population versus 35% of San Diego County's population (U.S. Census Bureau, 2024). The Southern Border region is also home to many Tribal communities. San Diego County is home to approximately 58,000 American Indian/Alaska Native (AIAN) residents, representing four main cultural groups: Kumeyaay/Diegueño, Luiseño, Cupeño, and Cahuilla. The County is also notable for having the highest number of Native American reservations in the U.S., with 18 reservations governed by various Tribal bands (County of San Diego Health and Human Service Agency, 2023). In addition, according to the U.S. Census Bureau, 2.7% of Imperial County's population (approximately 4,800 people) identify as American Indian/Alaska Native (U.S. Census Bureau, 2023).

Educational disparities are prevalent across the region, with significant barriers to quality education affecting economic mobility. In Imperial County, 77% of adults aged 25 and older lack a college degree, highlighting critical challenges in educational attainment. In San Diego County, 50% of adults lack a college degree. Across the region, high school completion rates also reveal racial and ethnic disparities. In Imperial County, while 71.3% of adults have earned a high school diploma, only 65.2% of Hispanic or Latino adults have achieved this. In San Diego County, high school completion rates vary by race, with 91% of Black and 93.6% of Hispanic or Latino adults having graduated, compared to 99% of white adults.

Despite some educational achievements, wage gaps persist, disproportionately affecting Latino/a workers. Approximately 8% of the regional workforce earns poverty-level wages, with the rate nearly doubling to 15% among Latino/a workers. Many workers of color are concentrated in lower-paying industries such as agriculture, construction, and retail trade (National Equity Atlas, 2024).

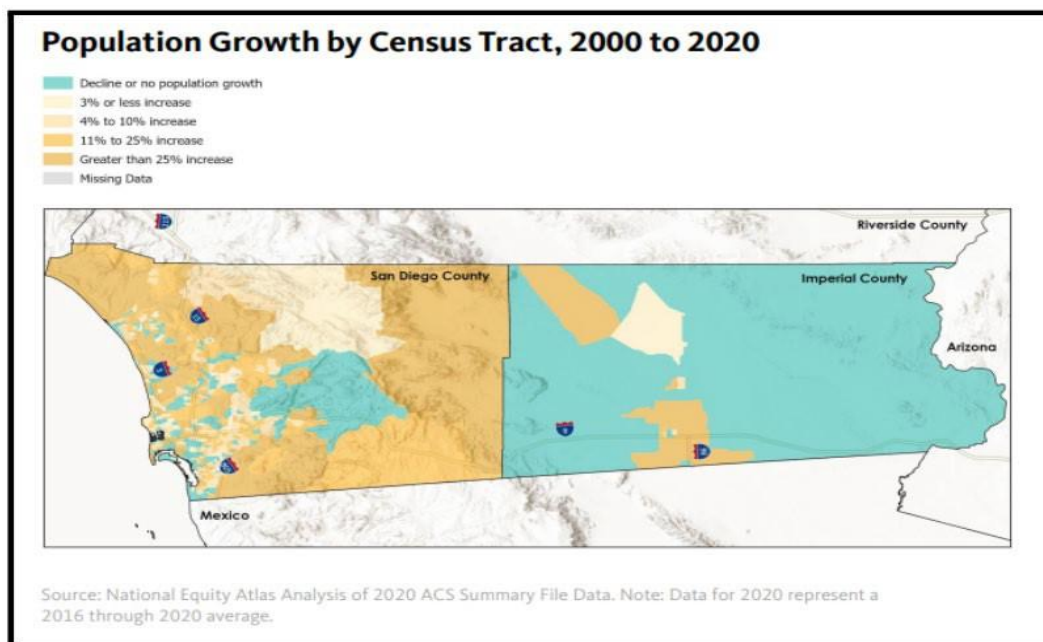
Communities of color also experience higher levels of poverty. For instance, in areas where poverty rates exceed 20%, 74% of the population is people of color, while in areas with poverty rates below 4%, only 47% of the population is people of color. This geographic inequality also leads to differences in environmental health risks and life expectancy, with Black and American Indian/Alaska Native residents living, on average, 4 to 6 years less than the regional average. Overall, the poverty rate is 17.3% across Imperial County and 10.5% across San Diego with higher levels of poverty in communities of color.

Access to stable, well-paying jobs is limited, with only 27% of jobs in the San Diego-Carlsbad-San Marcos metropolitan area qualifying as good jobs. These jobs are more accessible to those with higher educational attainment, but workers of color, who have lower educational attainment rates, are significantly underrepresented in these positions based on their percentage of the population. White workers are overrepresented in these high-quality jobs, deepening racial disparities in employment opportunities.

Population

The Southern Border region is home to over 3.5 million people. Over the past two decades, San Diego County has experienced steady population growth across most areas, with some western and central parts, including areas near Cuyamaca Rancho State Park and Cleveland National Forest, seeing little or no growth. Imperial County's population growth has been concentrated around the El Centro area, with much of the rest of the County seeing little to no growth or even decline from 2000 to 2020 (World Population Review, 2024; Imperial County Workforce Development Office, 2022).

Figure 2: Population Growth by Census Tract in the Southern Border, 2000-2020

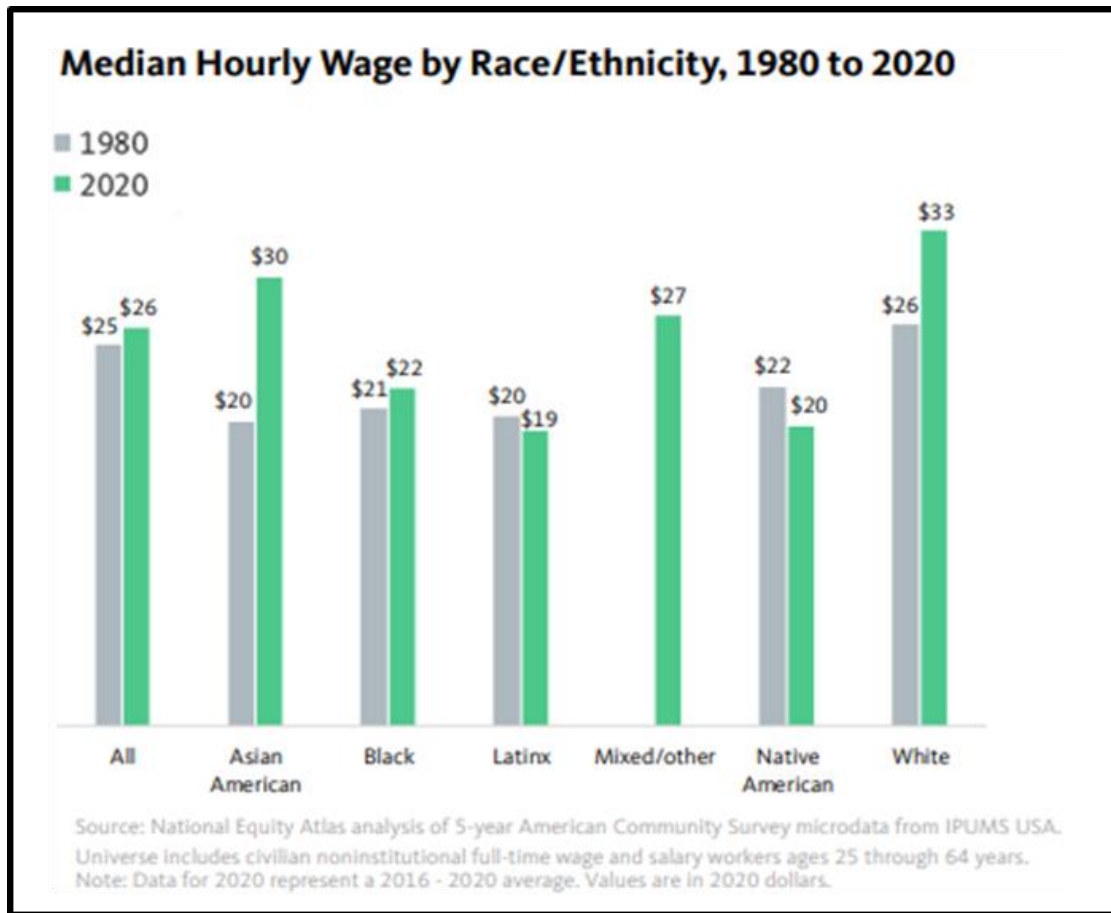


Wages

Median wages in the region have stagnated at around \$26 per hour, with significant racial disparities; Latino/a and American Indian/Alaska Native workers earn below the regional average, while Asian American and white workers have seen wage increases (National Equity Atlas, 2024). Since 1980, the median wage in the region has only slightly increased from \$25 to \$26 per hour, but significant disparities exist across racial and ethnic groups. Wages for Asian

American and white workers rose by \$10 and \$7 per hour, respectively, while Black workers saw only a \$1 per hour increase. Wages for Latino/a and American Indian/Alaska Native workers have declined, with these groups, along with Black workers, now earning median hourly wages below the regional average. The wage gap between Latino/a and white workers has widened significantly, with the median wage for Latino/a workers dropping from 77% of white workers' wages in 1980 to just 58% in 2020.

Figure 3: Median Hourly Wage by Race/Ethnicity in the Southern Border, 1980-2020

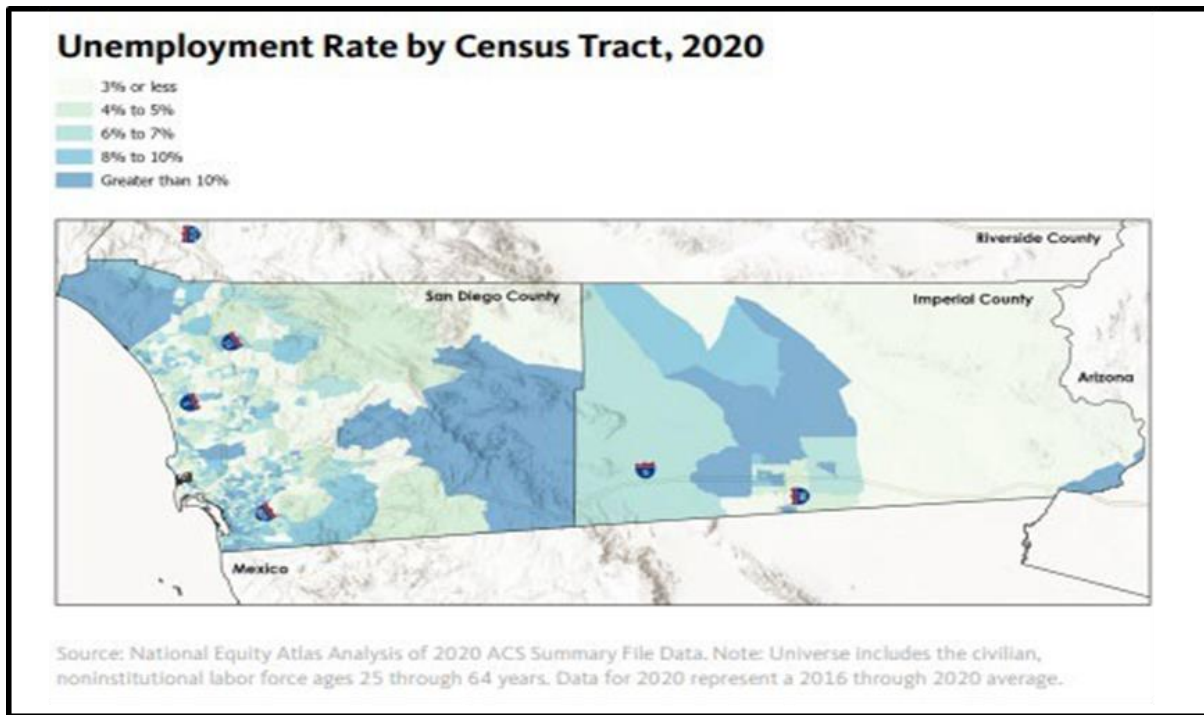


Unemployment

High unemployment rates are prevalent across many population hubs in the Southern Border region. In Imperial County, the unemployment rate is particularly stark at 15.7%, significantly higher than the statewide average of 5.3% (California Employment Development Department Labor Market Information Division, 2024). This high rate disproportionately impacts communities of color—census tracts with unemployment rates exceeding 10% are composed of 73% people of color, while those with unemployment rates of 3% or less are 46% people of color. In contrast, San Diego County has a lower overall unemployment rate of 4.1%, but areas with low unemployment often border communities experiencing double-digit unemployment

rates. Across the region, 20% of residents of color live in areas with over 10% unemployment, compared to just 10% of white residents.

Figure 4: Unemployment Rate by Census Tract in the Southern Border, 2020



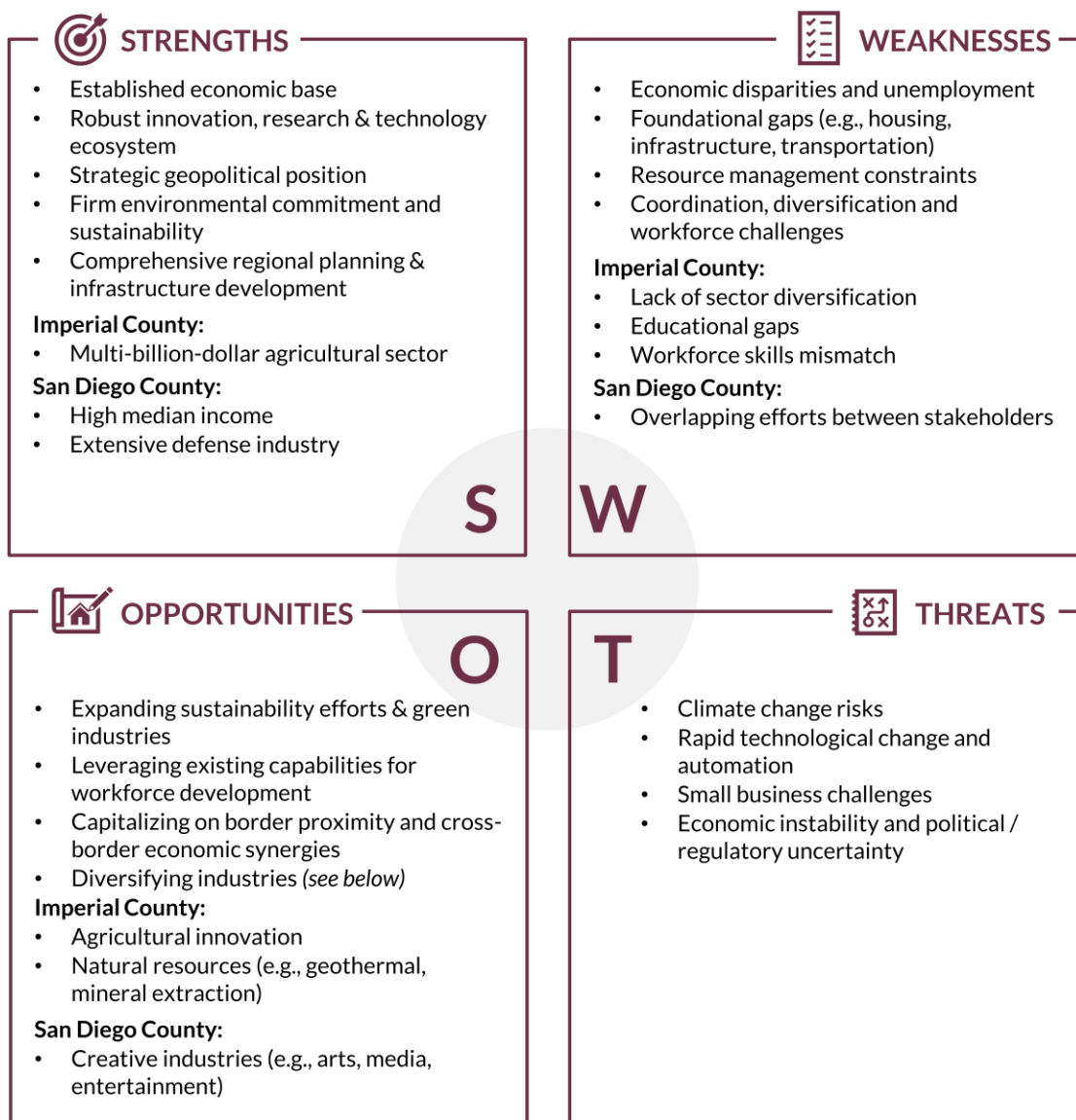
Climate and Environmental Impact on Economic Development

The Southern Border region faces significant climate and environmental challenges that threaten both its economic prosperity and the quality of life for its residents. Key issues include water insecurity, drought, rising temperatures, and extreme weather events such as coastal flooding and wildfires. Imperial County, for instance, experiences some of the highest heat extremes in California, with temperatures often exceeding 110 degrees Fahrenheit, and an estimated 210 days per year of extreme heat projected between 2035 and 2064. This intensifying heat exacerbates the urban heat island effect, where urban areas become significantly warmer than their rural counterparts due to heat-retaining surfaces, leading to increased energy demands for air conditioning and worsening air quality. Furthermore, low-income and minority populations are disproportionately affected, as they are more likely to live in hotter neighborhoods and are at greater risk of heat-related health issues. In San Diego County, the disparity is evident as lower-income neighborhoods experience temperatures about 37 degrees Fahrenheit warmer than wealthier areas. This increase in heat and the prevalence of air and water pollution further complicates the region's economic development, impacting occupational safety, healthcare costs, and overall resilience against climate shocks.

Southern Border Region SWOT Analysis

An analysis of the strengths, weaknesses, opportunities and threats (SWOT) of the Southern Border Region is outlined below. To access the full SWOT analysis for Imperial and San Diego Counties please refer to the [California Jobs First Southern Border Coalition Regional Plan Part 1](#). The Southern Border Region has strong economic foundations, diverse industries, and strategic geographic positioning, yet it faces challenges such as economic disparities, infrastructure gaps, climate risks, and the need for workforce development. The region can also grow its green industries, technological innovation, and cross-border collaboration.

Figure 5: Southern Border Region SWOT Analysis



Strengths

- **Established Economic Base:** Both counties benefit from an established range of economic sectors, creating a resilient economic foundation and fostering growth across multiple industries. This diversity helps buffer the region against sector-specific downturns and offers a variety of opportunities for growth and innovation.
 - **SDC:** Home to a robust mix of industries, including biotechnology, clean technology, tourism, manufacturing and aerospace. These sectors, along with a growing tech ecosystem, drive economic growth and innovation.
 - **IC:** Strong agriculture base and renewable energy, and emerging technology potential. Imperial County is a leader in renewable energy, generating over 10% of California's renewable energy in 2022, primarily from geothermal, solar, and wind energy.
- **Innovation, Research, and Technology:** Both counties are fostering innovation and technological development, with key institutions and industries driving research and cutting-edge advancements.
 - **SDC:** Hub for innovation, with renowned academic institutions like University of California San Diego and the Scripps Research Institute that attract businesses seeking innovative solutions and a skilled workforce.
 - **IC:** Openness to emerging technologies, especially in renewable energy, positions it well for growth. Imperial Valley is capitalizing on new technologies like digital infrastructure to enhance its economic development.
- **Strategic Geopolitical Position:** The region's unique position along the U.S.-Mexico border offers advantages in terms of trade and cross-border relations, fostering economic development and cultural exchange.
 - **SDC:** Location along the U.S.-Mexico border enhances its economic ties to Mexico, creating a hub for cross-border trade and investment.
 - **IC:** Proximity to the U.S.-Mexico border with Mexicali, Mexico, strengthens trade relations, with two Ports of Entry facilitating billions of dollars in product shipments. The region is also a participant in the Cali Baja Bi-National Mega-Region, which coordinates development strategies with Baja California, Mexico.
- **Environmental Commitment and Sustainability:** Both counties are aligned with state and regional environmental goals, demonstrating a commitment to sustainability through planning and development initiatives.
 - **SDC:** Benefits from robust regional planning efforts, such as the Comprehensive Economic Development Strategy (CEDS) and detailed climate action plans, which focus on sustainable growth.
 - **IC:** Demonstrates potential in addressing environmental challenges, evident in its renewable energy production, adoption of emerging technologies, alignment of

regional planning with California Jobs First, and initiatives like the FourFront Initiative that incorporate climate action and environmental protection.

- **Regional Planning and Infrastructure Development:** Both counties benefit from planning efforts that consider sustainable growth, infrastructure development, and environmental justice.
 - **SDC:** Has existing planning initiatives such as the San Diego County General Plan, which focus on land use, mobility, housing, conservation, and environmental justice, creating a strong foundation for coordinated growth.
 - **IC:** Has planning initiatives such as the Comprehensive Economic Development Strategy (CEDS) and the Imperial County Strategic Plan, which include some considerations on topics such as housing, infrastructure, and the environment, helping to provide a framework for the County's growth and development.
- **County-specific strengths – San Diego County:**
 - *Quality of Life:* High median income (\$88,240) and access to amenities, healthcare, and education, though disparities exist in inner cities and rural areas.
 - *Defense Industry:* Multiple military bases support civilian employment, defense contracting, and regional economic stability.
- **County-specific strengths – Imperial County:**
 - *Agricultural Sector:* Strong agricultural production valued at \$2.6 billion in 2022, with major products like cattle, alfalfa, and vegetables supporting jobs and the national food supply.
 - *Resource Production:* Significant supplier of gypsum, sand, and gravel, with emerging investments in lithium extraction.

Weaknesses

- **Economic disparities and unemployment:** Both counties experience economic disparities, though the specifics of inequality and workforce access differ.
 - **SDC:** Has low unemployment and a thriving high-tech sector, however persistent inequalities remain, particularly in disinvested communities. The wealth disparity is stark, with affluent coastal and northern areas contrasting sharply with struggling southern and eastern neighborhoods.
 - **IC:** Continues to struggle with high unemployment rates and dependence on social services, creating deep-rooted systemic issues. Additionally, many areas of the county face limited access to economic opportunities and workforce training and experience higher rates of poverty.

- **Foundational gaps (housing, infrastructure, transportation):** Both counties struggle with housing accessibility and infrastructure inadequacies, affecting economic mobility and the community's quality of life.
 - **SDC:** Rising housing costs and limited “missing middle” options make it difficult for residents to afford housing, affecting workforce retention and economic mobility as development focuses on luxury and low-income housing. Limited transportation infrastructure, especially in rural areas, restricts access to essential services and hampers emergency response.
 - **IC:** Housing and transportation infrastructure fail to meet community needs, with urban areas like El Centro better served than rural areas, which experience access issues for services and jobs. There is also a lack of safe, free programming and facilities for youth to exercise after school and in the summer. Limited public transportation contributes to a lack of access to education, healthcare, disaster and emergency response, and other critical services, especially in remote areas like Niland and Calipatria. In some areas, particularly in disinvested communities, there is also a lack of consistent access to the internet or cell services.
- **Resource management:** Effective management of natural resources, particularly water, is essential for sustaining local economies.
 - **SDC:** Depends heavily on imported water from Imperial County, making it vulnerable to drought and climate change.
 - **IC:** Management of water resources is a critical issue, given the importance of agriculture to the local economy, the arid climate, and competing interests for Colorado River water. The receding waters of the Salton Sea create significant environmental and public health challenges.
- **Coordination, diversification, and workforce challenges:** Both counties have additional weaknesses specific to them related to strategic alignment, economic sectors, and human capital development.
 - **SDC – Overlapping efforts:** With numerous plans and strategies in place, there is a potential for overlapping objectives or conflicts between different regional efforts, which could lead to inefficiencies or diluted focus.
 - **IC – Lack of sector diversification:** Some sectors, particularly agriculture, lack diversification, making the economy vulnerable to downturns, though industries like lithium mining may help diversify.
 - **IC – Educational gaps:** Limited access to higher education, with efforts like Imperial Valley College's partnerships and San Diego State University's small but growing presence not fully addressing the lack of pathways in business, advanced medicine, engineering, and sciences, particularly impacting the Black community.

- **IC – Workforce skills mismatch:** A gap exists between the skills of the local workforce and the needs of growing industries, hindering economic growth and leaving certain segments behind.

Opportunities

- **Sustainability and green industries:** Both counties have significant potential in green industries, including renewable energy and sustainable practices, which can drive economic growth and help meet climate action goals.
 - **SDC:** Has a growing clean technology and innovation sector, which presents substantial opportunities for sustainable industry growth. The expansion of green industries can help the region meet its climate action goals, offering both environmental and economic benefits.
 - **IC:** Opportunities to expand its renewable energy sector, attracting sustainable businesses and investments. The geographic and climatic conditions, local experience, and existing infrastructure in Imperial County also offer additional renewable energy projects, such as solar and geothermal power.
- **Leverage and enhance existing capabilities for workforce development:** Both counties have some existing resources that can support efforts to address workforce needs through targeted education and skill development initiatives.
 - **SDC:** Can leverage partnerships with educational institutions and training programs to enhance workforce skills. There are opportunities to develop apprenticeship programs in traditionally low-wage sectors such as retail, hospitality, and tourism. These programs would help address skill mismatches and prepare workers for the industries of the future, making it easier for employers to fill positions in growing sectors.
 - **IC:** Increased collaboration through High Road Training Partnerships (HRTPs) and other community-led initiatives can pave the way for more cohesive and inclusive regional development. Additionally, workforce development is closely linked to the growth of emerging industries through initiatives like the Lithium Valley High Road Partnership. This partnership connects labor councils with University of California San Diego and Comité Cívico del Valle to ensure residents are prepared for employment opportunities in advanced manufacturing and lithium extraction.
- **Border proximity and cross-border economic synergies:** Both counties are strategically positioned near the U.S.-Mexico border and can leverage cross-border synergies to strengthen their economic and cultural ties with Baja California, expanding opportunities in sectors like trade, manufacturing, and tourism.

- **Specific industries and diversification:** The two counties have a variety of industries that present diversification opportunities for local economies.
 - **SDC – Creative industries:** The arts, media, and entertainment sectors offer significant economic potential by attracting tourism, adding cultural appeal, and promoting local events and activities, which drive local economic growth.
 - **IC – Agricultural Innovation, Geothermal, and Mineral Extraction:** Imperial County’s agricultural sector offers opportunities for technological integration, improving efficiency, sustainability, and working conditions. Additionally, the Salton Sea Known Geothermal Resource Area (KGRA) is rich in lithium and other critical minerals. With an estimated 15 million tons of lithium, this industry could take 50 to 100 years to fully develop, creating thousands of new jobs in sectors like transportation, healthcare, and manufacturing. This investment surge will provide significant economic opportunities for a county with historically high unemployment and economic challenges.

Threats

- **Climate change risks:** Both counties face significant risks from climate change, including the increased frequency and severity of extreme weather events like wildfires, droughts, floods, and extreme heat. These climate threats can severely impact infrastructure, public health, and local economies, including critical sectors such as tourism and agriculture.
 - **SDC:** Faces increased risks from droughts, wildfires, rising sea levels, floods, and extreme heat, with rural and low-income communities most at risk, especially from wildfires and extreme heat. Coastal and river-adjacent areas are vulnerable to flooding. These climate events threaten tourism, productivity, and other essential economic activities.
 - **IC:** Faces climate change risks, including higher frequency and severity of wildfires, droughts, and extreme weather. Existing issues like high heat, water scarcity, competing demands for water and rising utility costs are expected to worsen, putting pressure on infrastructure and human health.
- **Rapid technological change and automation:** Both counties must adapt to the fast pace of technological change, which poses a risk of sectoral obsolescence or transformation. The evolving artificial intelligence (AI) landscape continues to change the future of many industries and occupations.
 - **SDC:** Rapid pace of technological advancements poses a threat to various sectors, requiring constant adaptation. Occupations once thought to be at risk of automation (e.g., construction, carpenters, maintenance trades) have shown resilience. However, occupations considered more secure, like computer

programmers, data analysts, and software engineers, now face the risk of redundancy or deskilling due to automation and AI.

- **IC:** Rapid pace of technological change also threatens agriculture, trade and logistics, and manufacturing, among other sectors. Some occupations once thought vulnerable to AI, such as truck drivers, have not yet been impacted, while traditionally secure roles, such as computer programming and data analysis, are now at risk of redundancy as AI continues to evolve.
- **Small business challenges:** Both counties are experiencing challenges with some employers struggling to hire and retain workers, particularly at entry-level positions (Centers of Excellence for Labor Market Research, 2022). Small businesses may be at a disadvantage in the talent market, especially as larger employers offer higher wages. Additionally, they can face challenges such as limited access to capital, rising material costs, and government regulations.
 - **SDC:** Small businesses are unable to compete with larger employers offering slightly higher wages, making it difficult to retain talent. High turnover rates due to employees seeking marginal wage increases are exacerbating the challenge of workforce retention. Additionally small businesses may be burdened by limited access to capital, rising operational costs, and regulations.
 - **IC:** Small businesses are finding it difficult to retain workers, as entry-level employees frequently move to companies offering just \$0.50 to \$1.00 more per hour. This wage disparity puts local businesses at a disadvantage, limiting their ability to attract and retain skilled workers. They may also face challenges such as operational costs, resource constraints, and navigating the regulatory environment.
- **Economic instability and political/regulatory uncertainty:** Global economic fluctuations, including potential recessions, can impact key local industries, especially those reliant on international markets and cross-border trade, potentially undermining regional prosperity. Additionally, shifts in the political landscape or changes in regulatory frameworks create uncertainty, complicating long-term planning and investment. Overly complex or restrictive regulations may hinder business development and innovation, while changes in regional or national policies can further disrupt investment and economic growth.



CHAPTER 4: CROSS-CUTTING STRATEGIES

This chapter presents the refined Sector-Neutral, Economic Mobility, and Community Development strategies, shaped by both community input and the Coalition’s priorities. Cross-cutting strategies address challenges that span multiple areas of the economy and community. By integrating local insights with strategic priorities, these initiatives aim to promote economic mobility, resilience, and growth across the region, ensuring that each approach remains relevant and impactful across sectors.

Below is a summary list of the selected strategies.

1. **Community Ownership and Respectful Engagement:** Commit to inclusive and equitable implementation practices that empower, create agency, and place ownership of decision-making within disinvested communities.
2. **The Small Business, Cooperative, and Entrepreneurship Ecosystem:** Provide capital, technical assistance, and other resources to enhance the small business and entrepreneurship ecosystem.
3. **Climate Resilience:** Take actions to support a sustainable environment, transition to a net-zero emissions economy, and adapt to climate impacts.

In addition to the cross-cutting strategies outlined in this chapter, industry-specific supporting strategies can be found in each industry chapter (Chapter 5: Regional Strategies).

⁸ Photo by Port of San Diego, “San Diego Skyline” (CC BY 2.0). Available at: <https://www.flickr.com/photos/portofsandiego/2899507449>.

Cross-Cutting Strategy 1 – Community Ownership and Respectful Engagement

This strategy emphasizes empowering disinvested communities through active, respectful engagement and prioritizing community-driven input in economic and development projects across Imperial and San Diego Counties. It also underscores the importance of fostering economic opportunities for residents through mechanisms such as local hiring policies and access to education and training pathways. Specifically, for Tribal communities, this includes respecting Indigenous Knowledge (IK) systems and ensuring compliance processes that prioritize cultural and natural resource stewardship (*for additional details, please refer to “Imperial County Tribal Communities Study Report”*).

A key element of the overall approach is ensuring broad dissemination of information about available programs, resources, and opportunities. Many disinvested communities, including Tribal communities and rural or unincorporated populations, often remain unaware of existing initiatives that could directly benefit them. Improving communication channels and implementing culturally relevant outreach efforts would ensure more equitable access to resources, enabling programs such as workforce training, education pathways, and community support initiatives to reach those who need them most. These efforts not only expand access but also create opportunities for community feedback to enhance and refine these programs, ensuring they are continuously improved and better aligned with the unique needs of their users.

While the final decision-making authority may not rest solely with the community, gathering structured input prioritizes that local perspectives meaningfully shape the planning and implementation phases. This approach maintains efficiency by avoiding the slowdowns that can occur with fully community-led decision processes, but also requires that community feedback be gathered and acknowledged. By focusing on community-driven insights to inform the process, projects benefit from local knowledge while maintaining accountability to timelines and goals. This includes acknowledging Tribal expertise in resource compliance processes and providing long-term training opportunities in areas such as disaster services, agricultural programs, and cultural resource management (CRM), to build local capacity.

This approach is essential, especially given that community members, including American Indian/Alaska Natives, immigrants, and historically disinvested groups, have often been excluded from regional planning efforts. Inclusive engagement has been shown to increase civic participation and economic resilience, creating pathways to self-sustained growth and equity. For example, programs that combine community engagement with workforce development, such as California’s local hire initiatives, have demonstrated measurable benefits, including increased local employment and stronger alignment between community needs and project outcomes. Additionally, in California, community engagement initiatives

have led to a 30% increase in local participation in economic planning, resulting in more relevant and community-aligned outcomes (California Department of Community Development, 2023). In Tribal communities, equitable engagement also requires investments in cultural activities, language preservation programs, and intergenerational learning initiatives to sustain cultural identity and economic inclusion.

By integrating community perspectives into structured planning and implementation, while simultaneously addressing workforce inclusion through targeted strategies like local outreach and awareness of training opportunities, this report addresses critical issues with a grounded understanding of local needs while maintaining a clear, focused path forward.

In Imperial County, where over 40% of residents live in rural areas with limited access to essential services and more than 25% primarily speak Spanish, culturally relevant outreach is vital (U.S. Census Bureau, 2023). This strategy builds cross-regional partnerships that connect underserved populations with local government, Tribal organizations, nonprofits, and businesses to co-create policies that reflect their unique needs. Collaborative projects like the FourFront Initiative—a partnership between Mexicali, San Luis Río Colorado, Yuma County, and Imperial County—demonstrate the impact of regional cooperation in achieving shared goals in economic development, environmental protection, and public safety.

In San Diego County, with its diverse urban and suburban communities and a population that includes over 20% Spanish-speaking residents, culturally responsive engagement is equally critical (U.S. Census Bureau, 2023). This strategy emphasizes collaboration among local governments, Tribal entities, nonprofits, and businesses to co-develop policies that address the unique challenges faced by these communities. Projects like the San Diego Regional Climate Collaborative—a network that brings together public agencies, academia, businesses, and nonprofits—showcase the power of regional cooperation in pursuing shared objectives across economic development, climate resilience, and public health. By fostering these partnerships, San Diego County can advance initiatives that support inclusive growth and community well-being across its varied communities.

Specific strategies:

1. **Commit to inclusive implementation:** Empower disinvested communities by adopting practices that place them at the forefront of implementation decisions, allowing residents to guide and influence how strategies are realized in their communities.
2. **Uplift community voices with respectful engagement:** Prioritize cultural humility and adhere to local norms, ensuring that community members, especially in underserved areas, actively shape strategies and projects that affect them.

3. **Strengthen regional partnerships:** Facilitate partnerships across local and Tribal governments, nonprofits, and businesses to co-create policies and programs. Initiatives like the FourFront Initiative serve as models for effective cross-regional collaboration.
4. **Promote social and economic justice:** Establish transparent, accessible processes that allow disinvested communities to challenge inequitable systems and ensure their voices are central in shaping their futures, building a fairer and more participatory regional development framework. Integrate long-term training opportunities as part of social and economic justice strategies by addressing systemic barriers to access. This includes providing targeted training in Tribal communities, such as fire training, disaster management, and healthcare programs, which help address historical inequities by increasing access to quality jobs, enhancing community resilience, and enabling upward mobility. These initiatives can also serve to empower disinvested groups by equipping them with skills to participate in economic development more equitably.
5. **Advocate for local hiring policies:** Expand the use of local hire policies by requiring businesses and nonprofits receiving public funding to share job openings with the local workforce board and conduct local outreach to identify qualified workers.
6. **Increase awareness of available opportunities:** Promote education and training programs that lead to high-road career pathways for students and families from disinvested communities, ensuring equitable access to sustainable careers. For Tribal communities, this includes initiatives to preserve language and cultural heritage through education and workforce development.
7. **Promote equitable representation in funding decisions:** Ensure that Tribal communities and residents from unincorporated areas have a meaningful voice in the planning process and are actively included in shaping the region's development projects, ensuring proportional influence in how resources are allocated.

By structuring projects with these strategies, this model aims to ensure that community input remains a foundational element of planning and implementation, fostering inclusive and equitable growth.

Cross-Cutting Strategy 2 – The Small Business, Cooperative, and Entrepreneurship Ecosystem

This strategy aims to strengthen the small business and entrepreneurship ecosystem in Imperial and San Diego counties by providing essential capital, technical assistance, and resources for sustainable growth. With small businesses employing 60% of San Diego County’s workforce and minority-owned businesses generating \$28.7 billion in tax revenue across California, the importance of promoting entrepreneurship from disinvested communities is clear. This strategy addresses the critical barriers faced by small businesses in disinvested communities. In both Imperial and San Diego Counties—80% of businesses in Imperial County have fewer than 20 employees—targeted support is essential to help small businesses overcome challenges in accessing capital, hiring skilled labor, and navigating complex regulatory demands. By reducing compliance barriers and creating pathways to sustainable success, this strategy also aims to empower small business owners to build long-term stability and economic security for their families and communities.

Local technical assistance centers, such as Small Business Development Centers, APEX Accelerators, and Veteran Business Service Centers, offer free and low-cost support to small businesses, particularly those from disadvantaged communities. Community colleges also contribute, providing affordable business development courses and contract-based training to address small business needs in high-growth sectors like clean tech and logistics. Access to financial services, including loans, venture capital, and other funding options, is also critical to help small businesses and startups scale operations and support larger industrial projects. As an example, the State Small Business Credit Initiative provides up to \$1.2 billion in credit enhancements, prioritizing disadvantaged businesses with fewer than ten employees to strengthen access to capital. Given that California has some of the highest fees to starting and running a business, such programs are critical in addressing these financial barriers to entrepreneurship, particularly in disinvested communities. For example, the minimum wage in California increased to \$15.50 per hour in 2023, more than double the minimum wage in states like Texas and Utah (California Department of Industrial Relations, 2023). Additionally, California’s regulatory environment includes over 400,000 restrictions—the highest in the nation—creating significant compliance costs for small businesses (Financial Times, 2023). These factors contribute to the state’s high cost of doing business, which disproportionately impacts small businesses and entrepreneurs in underserved areas, underlining the importance of targeted financial and technical assistance programs.

Business incubators and accelerators are also critical to fostering entrepreneurship and innovation, equipping startups and small businesses with the resources to thrive in competitive markets. For example, the creative workers strategy under Arts, Culture, Heritage & Tourism highlights how entrepreneurship can serve as a pathway for wealth generation in

disinvested communities, aligning with broader efforts to support foundational and locally serving industries. Additionally, specialized programs targeting underserved groups, such as refugee and immigrant entrepreneurs, offer tailored investments and support to empower these individuals to establish and grow successful businesses, contributing to economic revitalization and community development.

To support environmental resilience, this strategy looks for the inclusion of assistance for small businesses to transition to low-carbon technologies, aligning with California's climate goals. Services like energy audits and sustainable practice training enable small businesses to reduce resource consumption and emissions, enhancing their resilience in a shifting economy. In addition, new programs focused on refugee and immigrant entrepreneurs will provide targeted investments and support, enabling these entrepreneurs to create and grow businesses that drive wealth building, upward mobility, and economic revitalization in underserved communities.

Specific strategies:

1. **Remove barriers to entrepreneurship:** Address key obstacles such as limited access to startup capital, challenges in hiring skilled workers, and complex regulatory requirements. Help business owners address compliance requirements by providing tailored support such as free or low-cost legal aid, technical assistance, and step-by-step guidance on navigating regulatory processes. This can include workshops, one-on-one counseling, and access to compliance toolkits designed to simplify requirements. Additionally, provide culturally relevant technical assistance tailored to small businesses, helping them navigate financial constraints, workforce gaps, and compliance hurdles effectively. While reducing compliance barriers at a systemic level may require government advocacy, these immediate solutions can ease the burden on small and disadvantaged businesses. Support sustainable growth by improving access to resources and providing tools that streamline compliance barriers. This aligns with California's unique challenges, such as high startup and running fees, which disproportionately affect small and disadvantaged businesses.
2. **Expand contracting opportunities:** Encourage local businesses, nonprofits, and government agencies to integrate small businesses into their supply chains, fostering economic resilience and creating new market opportunities.
3. **Develop a targeted training pipeline:** Collaborate with community colleges and workforce boards to build a talent pipeline that meets the specific workforce needs of small businesses, focusing on underserved communities.
4. **Strengthen small business resilience:** Provide small businesses with resources to enhance operational resilience, such as disaster preparedness training, risk

management support, and access to low-cost financing for infrastructure upgrades. Equip businesses with tools to better withstand challenges, ensuring they can adapt and thrive in an evolving economic landscape.

5. **Increase access to capital and technical resources:** Leverage the State Small Business Credit Initiative and local technical assistance centers to provide enhanced credit and skill-building opportunities for disadvantaged and small-scale businesses.
6. **Invest in refugee and immigrant entrepreneurs:** Develop and implement programs to provide targeted investments and support for refugee, immigrant, and first-time entrepreneurs that offer trainings, support services, and broadly democratize access to capital. Programs can look to the Central Valley Immigrant Integration Collaborative's Immigrant Entrepreneurship Program (CVIIC-IEP), Social Entrepreneurs for Economic Development (SEED), or the Zero-to-Entrepreneur certificate program as models that can be expanded upon or serve as inspiration for a newly developed initiative.

Cross-Cutting Strategy 3 – Climate Resilience

This strategy focuses on building climate resilience in Imperial and San Diego Counties by supporting sustainable infrastructure, green technology development, and community-focused adaptation. The strategy emphasizes transitioning to a net-zero emissions economy, addressing public health disparities, and ensuring funding and benefits of climate resilience initiatives are distributed equitably. Recognizing that disinvested communities in the Southern Border region bear disproportionate economic, public health, and environmental burdens from the national transition to clean energy, this strategy prioritizes equity and justice. Efforts include improving affordable access to health facilities, civic infrastructure, and training programs to prepare residents for emerging job opportunities, particularly in sectors like lithium extraction and processing. Additionally, this strategy considers the unique challenges faced by Tribal communities, particularly those related to air pollution, dust from roadways, and impacts on culturally significant species like mesquite, emphasizing the need for enhanced air quality protections (*for additional information, please refer to Chapter 7, “Imperial County Tribal Communities Study Report”*).

This strategy recognizes that disinvested communities in the Southern Border region bear disproportionate economic, public health, and environmental burdens from the national transition to clean energy. As such, efforts include improving affordable access to health facilities, civic infrastructure, and training programs to prepare local residents for emerging job opportunities, particularly in sectors like lithium extraction and processing. Additionally, this strategy considers the unique challenges faced by Tribal communities.

California’s recent climate policies, including SB 100 and the Safeguarding California Plan, set ambitious goals for renewable energy and resilience. Local initiatives, such as San Diego County’s Advanced Water Purification program, which aims to meet 50% of the city’s water needs, and the Lithium Valley Charger Equity Initiative in Imperial County, address these goals by improving water and EV infrastructure to support both environmental sustainability and community health. Additionally, this strategy incorporates entrepreneurship as a driver of resilience by helping small businesses transition to lower-carbon energy sources and reduce resource consumption. This fosters economic sustainability while aligning with California’s climate goals. This approach also includes restoring Native vegetation and agricultural lands, such as community gardens and Tribal nurseries, to reconnect Tribal members with the land and promote sustainable economic practices that prioritize food justice and sovereignty.

Climate resilience efforts also prioritize public health, with strategies to reduce pollution and enhance access to green spaces. By expanding EV charging networks, transitioning to renewable energy, and developing microgrids, this strategy aims to reduce transportation

emissions and urban heat impacts. Investments like the Southern California Energy Innovation Network (SCEIN), which has attracted over \$546 million in funding for clean technologies, further drive innovation in sustainable industries, positioning the region as a leader in green job creation and climate adaptation. Targeted projects—such as urban greening and cool roofing initiatives in San Diego neighborhoods—help mitigate extreme heat effects, while advanced water purification systems and clean energy investments build local capacity to withstand climate-related challenges. In addition, addressing concerns about the effects of "slow violence," such as gradual air quality degradation from cross-border pollution, agricultural activities, and trucking, is essential to supporting Tribal communities' climate resilience efforts. Finally, in alignment with state requirements, each city's Emergency Operations Plan must integrate these resilience measures, to ensure coordinated efforts during climate-related disasters, and enhance community preparedness.

To fund these initiatives, significant state and federal support is being and should continue to be allocated. California Climate Investments has committed \$200 million, with an additional \$100 million from the Federal Infrastructure Investment and Jobs Act, supporting renewable energy and public health projects. These investments not only create job opportunities in green industries but also ensure that disinvested communities benefit equitably, improving both economic resilience and quality of life across the region. Equitable allocation of these resources is crucial to ensuring that disinvested communities benefit fully, not only through improved infrastructure and public health but also through increased access to local jobs and community services such as libraries and civic centers.

Specific strategies:

1. **Net Environmental Benefit:** Invest in sustainable industries such as renewable energy production, green construction, and advanced recycling technologies. Emphasize circular economy practices, sustainable materials sourcing, and carbon-neutral processes to align with California's net-zero goals while fostering green job creation and minimizing environmental impact.
2. **Expand EV Infrastructure:** Increase electric vehicle charging stations in disinvested areas by streamlining permits, reducing fees, and leveraging local programs, enhancing transportation access and reducing emissions.
3. **Climate Adaptation for Vulnerable Communities:** Implement community-focused climate resilience projects, including cooling centers, hydration stations, and urban greening, to protect residents from extreme heat and other climate impacts.
4. **Enhance Public Health through Clean Technology:** Support air quality improvement, water purification, and pollution reduction initiatives, focusing on low-income and disinvested communities to address health disparities exacerbated by climate change.

5. **Job Creation in Climate-Resilient Sectors:** Develop workforce training programs in partnership with local institutions, targeting skills needed for green jobs and ensuring equitable access to these opportunities for residents in disinvested communities.
6. **Advance equity and justice:** Acknowledge the economic, public health, and environmental impacts borne by disinvested communities in the Southern Border region during the transition to cleaner energy production. Implement targeted initiatives to allocate benefits equitably, including expanding access to affordable health services, providing job training programs, and improving civic infrastructure such as libraries, community centers, and auditoriums.
7. **Support the climate change transition through entrepreneurship:** Assist small businesses in transitioning to lower-carbon emissions-producing energy sources and reducing their use of limited resources, ensuring alignment with state climate goals while enhancing operational efficiency and sustainability.
8. **Restore and protect native lands and resources:** Support Tribal communities in restoring agricultural lands, reintroducing culturally significant vegetation, and promoting sustainable economic practices such as Tribal farming, food sovereignty initiatives, and natural habitat stewardship.
9. **Ensure emergency preparedness:** Require all cities to develop and maintain Emergency Operations Plans (EOPs) compliant with California's Standardized Emergency Management System (SEMS) to secure state disaster assistance funding. These plans should integrate climate resilience measures, ensuring effective response to climate-related disasters and enhancing public safety.



CHAPTER 5: REGIONAL STRATEGIES

The regional economic development strategy outlined in this document is made up of a three-part approach: foundational industries, locally serving industries, and tradeable industries.

Our strategic approach focuses on first fortifying the region's economic foundations common to all industry sectors. This involves addressing critical areas such as improving community infrastructure, building a robust nonprofit and community-based organization ecosystem, supporting access to housing, and strengthening digital infrastructure.

Key locally serving industries—those that circulate money within the local economy by selling goods and services to customers inside of the county—are also essential for a high quality of life. These industries include community health, water management, and training and workforce development. By addressing immediate community needs, these sectors create jobs that are tied to local demand and help stabilize the local economy.

With the foundational industries and locally serving industries established, the plan prioritizes expanding tradeable industries such as agriculture, clean energy, manufacturing, quality transportation and warehousing, arts, culture, heritage and tourism, and life sciences. These tradeable industries—industries that bring money into the local economy by selling goods and services to customers outside of the region—can help drive economic growth and create job opportunities, promoting a prosperous future for the region.

⁹ Photo by Bureau of Land Management California, “Renewable Energy Development in the California Desert” (PDM 1.0). Available at: <https://www.flickr.com/photos/blmcalifornia/28905292973>.

Figure 6: Overview of Tradeable Industries, Locally Serving Industries, and Foundational Industries in the Southern Border region



5.1 Foundational Industries

The foundational industries included below are essential pre-requisites to inclusive economic development, the growth of key tradeable industries, and promoting overall quality of life. They act as the ‘base’ that supports a healthy economy across the region.

Figure 7: Overview of Foundational Industries in the Southern Border region





Community Infrastructure: Creating safer, accessible, and efficient spaces to meet community needs and fuel industry growth



Description

Community infrastructure encompasses essential physical systems and services, such as roads, waste management, and public works that support daily life, economic development, and job creation.



Challenges

Poor connectivity, aging systems, and limited municipal capacity are key challenges. Funding gaps and complex grant processes exacerbate disparities, particularly in IC, while SDC struggles with deteriorating roads and a funding shortfall. Tribal communities face unsafe, outdated infrastructure and lack support for maintenance. Climate change worsens vulnerabilities, leaving under-resourced areas at greater risk from extreme weather impacts.



Regional Assets

- Diverse transport infrastructure, including ocean, road, and rail systems, as well as sewer, water, and electrical resources
- Extensive county road, bridge, and airport network
- IC: Strong landfill management and solid waste programs
- SDC: Investment in community assets



Supporting Strategies

1. **Enhance community infrastructure:** assess needs, engage communities in planning, and improve infrastructure in disinvested areas through a holistic approach
2. **Revitalize spaces:** support community-led development and create vibrant public spaces
3. **Connect communities:** design walkable areas and improve pedestrian systems
4. **Expand public transportation:** expand options, improve facilities, and adapt to climate hazards
5. **Build workforce capacity:** build local capabilities and identify collaboration opportunities
6. **Promote partnerships:** co-create strategies with funding agencies and support partnerships
7. **Align with climate policies:** prioritize climate-resilient infrastructure, zero-emission transit, and develop a climate action plan

Photo by Ethan Strunk: <https://www.pexels.com/photo/red-tram-moving-on-the-street-5110065/>

Community Infrastructure

Definition

Community infrastructure refers to the physical systems and services, such as sidewalks, roads, waste management, and other public works, that address the critical needs of communities. It acts as the backbone of community functionality and economic opportunity by providing essential resources that facilitate daily life and support economic development. Investments in infrastructure, as a foundational industry, create a stable environment that enhances quality of life and supports job creation.

Under the North American Industry Classification System (NAICS), this industry aligns with code 23 (“Construction”), with specific subcodes for various construction-related jobs, including code 2362 for nonresidential building construction, 2371 for utility system construction, 2373 for highway, street, and bridge construction, and 2379 for other heavy and civil engineering construction. While these codes serve as a practical reference and were used to compile industry information (as available data is often categorized under it), they may not fully capture all nuances or variations within the industry.

Rationale

Infrastructure serves as a critical foundation for well-being and economic growth. By facilitating essential services, infrastructure directly addresses the daily needs of communities, improving residents' quality of life, and promoting social equity. Strategically planned infrastructure, such as utility networks and public transportation systems, also enables the growth of both tradeable and locally serving industries by creating safer, more accessible, and efficient spaces for economic activity. Poor infrastructure, on the other hand, can discourage residents from seeking community resources or accessing services, can deter potential residents from living in certain areas, can hinder the development of industries, and can disincentivize active economic engagement. Thus, good community infrastructure benefits both individuals and businesses, laying the groundwork for sustainable job creation and economic opportunity.

Additionally, evidence shows that community infrastructure can support positive health outcomes like reducing rates of chronic diseases and obesity as well as improving mental health. Enhanced active transportation infrastructure, better accessibility to recreational spaces, and the development of walkable communities all increase opportunities for physical activity, which in turn lowers obesity rates and the prevalence of associated chronic diseases (Health Impact Project, 2021). For instance, the U.S. Department of Transportation recommends investments in better active transportation infrastructure, to encourage more physical activity, improve mental health and quality of life, and reduce health costs (U.S. Department of Transportation, 2024). Similarly, commuting time and costs have adverse

impacts on mental health, finances, and the environment. Long, stressful commutes due to inadequate infrastructure, like traffic congestion and overcrowded transit, elevate stress and negatively affect home life and job performance. Transportation costs are also considerable, with the average American household spending 12.1% of its pre-tax income on transportation in 2021 (San Diego County, 2024).

Challenges

Imperial and San Diego Counties face challenges due to a lack of comprehensive transportation infrastructure connecting various parts of the region, particularly rural areas that often rely on a single road for access to critical resources. This creates notable disparities between urban centers and more remote communities, where residents face greater infrastructural challenges that prevent them from accessing economic opportunities. Notably, according to the U.S. Census Bureau, approximately 18.4% of the population in Imperial County is classified as rural (33,075 people), as well as 4.4% of the population in San Diego County (144,963 people).

Across several community engagement meetings, community members anecdotally shared a range of concerns and priorities regarding infrastructure development. They emphasized the need for improvements in roads, sidewalks, bike lanes, and parks, as well as the expansion of public transportation routes and schedules to enhance accessibility within and between Imperial and San Diego Counties. Community members also stressed the importance of creating well-maintained recreational spaces with facilities for people of all ages and investing in community centers in disinvested areas to serve as hubs for education, resources, and community engagement, fostering social cohesion and local development. Additionally, they highlighted the need to develop infrastructure that supports key industries, such as power, water, broadband, rail, and airport connectivity, to strengthen local businesses. Ensuring meaningful accessibility—not just availability—was a recurring theme, with community members advocating for a holistic approach to infrastructure development to prevent unintended consequences, such as reduced parking or increased bicycle accidents when promoting alternative transportation methods (In-person and virtual community engagement meetings with the SBC and broader community members, 2024).

Moreover, The Imperial County Tribal Communities Study Report highlights key community infrastructure issues identified by Tribal members, given that “existing infrastructure is dilapidated and or outdated, unsafe, and in need of upgrades and creation of interconnected transportation networks to improve health, safety, and mobility” (Chapter 7, “Imperial County Tribal Communities Study Report”). Key transportation projects identified by the Imperial County Tribal Communities Report include electric scooter stations, improved school buses/green bus systems, road maintenance and reflectors, and light fixture implementation. Furthermore, Tribal community members emphasized that all industry projects should provide

training and tools—both intellectual and physical—for at least 1-2 Tribal community members, with guaranteed long-term employment. For example, any development of sidewalk safety infrastructure, such as streetlights, should offer training on how to construct and maintain this infrastructure, as well as leave behind the physical tools and equipment necessary for these services. For additional details please refer to Chapter 7, “Imperial County Tribal Communities Study Report.”

Increasing community resilience in the face of climate change and disasters is another key challenge. Both Imperial and San Diego Counties are vulnerable to extreme weather events, including wildfires, heatwaves, and floods, intensified by climate change. These incidents can severely damage existing infrastructure, and communities with older buildings, fewer resources for emergency response, and inadequate shelter options tend to suffer the most. Disinvested communities frequently lack the necessary infrastructure and resources to help mitigate climate challenges, leading to heightened vulnerability.

Finally, the lack of a comprehensive infrastructure inventory, assessment, and plan prevents the development of an aligned regional strategy tailored to local needs at the city and neighborhood level. Specific sectors within urban areas and remote regions may require additional basic services including sidewalks, public transportation facilities, community centers, recreational spaces, and waste management systems. Some remote rural communities also have water plants that require repairs and upgrades to ensure water quality. In addition, local governments and organizations usually lack the required training needed to ensure staff understand the complexities of securing funding and implementing projects. Engaging nonprofit organizations is crucial in the development process, as they have greater access to residents living in challenging conditions—such as those in rural areas and disinvested communities—who may distrust government agencies. These organizations can leverage their strong community connections to disseminate information about the infrastructure plan and gather neighborhood-level data on local needs and desires.

Challenges - Imperial County

Many remote communities in Imperial County lack municipal organizations to support and address their infrastructure needs. These needs include sporadic and non-compliant sidewalks, limited bicycle path availability, and minimal transit access. To enhance connectivity and support economic development, various road rehabilitation projects are essential to link these remote areas of the county with the main city centers.

Additionally, in Imperial County, as in many small and rural communities, significant challenges to infrastructure development arise from state and federal government policies that have historically favored larger communities for funding. State and federal infrastructure funds often bypass smaller areas, which struggle to secure necessary financial resources for

improvements. In addition, the complex requirements and cumbersome grant application processes serve as structural impediments, making it challenging for smaller cities and counties to apply. Imperial County's local governments struggle with a lack of personnel and resources to prepare the necessary preliminary plans and environmental reports, which are crucial for securing competitive grant funding. As a result, the County and its cities find themselves at a disadvantage when competing for available state and federal funding aimed at promoting infrastructure development. This exacerbates the challenges faced by residents, limits opportunities for growth, and requires Imperial County community members to rely heavily on automotive transport. The lack of community infrastructure also significantly impairs the County's transition to the net-zero emissions economy needed to address the impacts of climate change.

Challenges - San Diego County

In the case of San Diego County, the region grapples with infrastructure challenges underscored by a projected funding shortfall over the coming years. Specifically, in San Diego City, the San Diego County Grand Jury has described many road conditions as “deplorable.” Transportation officials anticipate that average road quality ratings will soon drop into the “poor” category based on forthcoming assessments. Currently, six percent of city roads are already classified as being in poor condition, and a 2015 pavement assessment indicated an average score of just 70, barely qualifying as “good.” Without adequate funding for upgrades and maintenance, these issues are likely to worsen (Inewssource, 2023).

Regional Assets (including potential partners)

The San Diego and Imperial Valley business corridor is an important economic and Recycling Market Development Zone (Cal Recycle, 2024). The region possesses diverse transport infrastructure, including ocean, road, and rail systems, as well as sewer, water, and electrical resources. Key infrastructure features include ocean port access in San Diego, border entry points into Mexico, and Customs facilities. Freight services are provided by Union Pacific Railroad (UPR) and Carrizo Gorge Railway (CGR), connecting the region to Los Angeles, El Paso, and Central Mexico, as well as linking Imperial Valley with San Diego via Northern Baja California (Cal Recycle, 2024).

Regional Assets - Imperial County

The 2023 Imperial County Strategic Plan outlines a comprehensive five-year framework designed to address the diverse infrastructure needs of the county's communities as outlined in the challenge section above. The plan identifies several issues across various areas, including aging infrastructure and the need for improved regional mobility through upgraded roads, bridges, and public transit systems (Imperial County, 2023). Several partners are critical in improving infrastructure in Imperial County. They include the Imperial County Public Works

Department (ICDPW) and Imperial County Planning and Development Services (ICPDS). The ICDPW manages various infrastructure assets across several divisions. The Field Operations/Road Division maintains over 2,555 miles of roads (1,349 miles paved, 1,206 miles unpaved) and 138 bridges, with Imperial County ranking 7th out of 58 Californian counties in maintained mileage responsibility. The county also operates several road districts and satellite yards across the region to support road rehabilitation, emergency responses, and ongoing road maintenance. Additionally, The Facilities and Capital Facilities Division is responsible for the planning, construction, and maintenance of county facilities, while the Solid Waste/Recycling Division manages nine landfills and coordinates with environmental agencies to ensure compliance with stringent federal and state regulations (ICDPW, 2024).

Regional Assets - San Diego County

The Department of Public Works (DPW) is an essential partner dedicated to improving and maintaining public infrastructure in unincorporated communities, focusing on crucial projects like roads, bridges, sewer systems, and stormwater management. These improvements are vital for ensuring safe, thriving, and sustainable environments for residents, businesses, and visitors. Each year, DPW updates its five-year Capital Plan in alignment with the county's Strategic Initiatives. In addition to infrastructure upgrades, the county also invests in capital projects such as parks, libraries, and fire stations (DPW, 2024). Some of the main project categories include airports, closed landfills, drainage improvements, bridges, environmental mitigation, intersection improvements, road enhancements, sidewalks, pathways, bike lanes, traffic signals, utility undergrounding, wastewater management, watershed projects, and water quality initiatives.

DPW's infrastructure management includes ensuring the safe operation of over 1,947 miles of roads, 262 bridges, and 432 miles of sewer lines in the county. The department also maintains over 56 miles of guardrails, 6,802 streetlights, and 209 traffic signals. Additionally, DPW handles more than 4,000 permits annually, covering everything from road closures to the movement of oversized equipment. It operates eight airports, managing over 520,000 flight operations each year. DPW is also responsible for 3 wastewater treatment plants, eight sewer pump stations, and three community water systems. Lastly, major projects, such as the Valley Center Road widening, are designed and implemented annually, with approximately 15-25 major projects underway each year (DPW, 2023).

Supporting Strategies

- 1. Strategy 1: Enhance community infrastructure and uplift investments and strategies that benefit disinvested communities and historically underserved areas**

- a. **Action step 1:** Conduct a comprehensive needs assessment of infrastructure across the region.
- b. **Action step 2:** Actively involve community members from disinvested communities in the planning and design processes to ensure their needs and priorities are reflected. Ensure community-centered development throughout the region, recognizing that each city and unincorporated area has unique community needs and land-use structures that require tailored plans for infrastructure improvements.
- c. **Action step 3:** Adopt a holistic approach to infrastructure development. This involves anticipating and mitigating potential unintended negative consequences of infrastructure projects, and addressing concerns raised by community members (e.g., the addition of bike lanes should not result in increased accidents or reduced parking availability).
- d. **Action step 4:** Promote infrastructure improvements throughout the region, especially in historically disinvested areas, which serve all residents, including those with disabilities, limited mobility, or language barriers. Focus on enhancing transportation to provide safe, reliable commuting options and ensure equitable access to job opportunities.
- e. **Action step 5:** Invest in appropriate community centers in underserved areas, establishing them as hubs for education, resources, and engagement that strengthen social ties and support local economic development.
- f. **Action step 6:** Remove barriers to accessing programs and services for disinvested groups, such as at-risk youth, formerly incarcerated individuals, and others who face challenges accessing public health, housing, and other safety net services such as halfway houses and sober living facilities.
- g. **Action step 7:** Upgrade and modernize water management systems, including public waste management systems, to ensure resilience, reliability, quality, and efficiency.
- h. **Action step 8:** Prioritize local hiring and procurement from local suppliers for infrastructure projects, thereby creating job opportunities for residents in disinvested communities.

2. **Strategy 2: Enhance community infrastructure to support revitalization and enriched spaces**

- a. **Action step 1:** Facilitate community-led development to revitalize main streets and cultural corridors. Provide technical assistance and funding for community-led development projects focused on uplifting key streets and cultural corridors, including leveraging initiatives such as the national Main Street designations and state Cultural District designations.

- b. Action step 2:** Support community accessible spaces. Develop and upgrade public spaces to ensure they are fully accessible, including features such as ramps, wider pathways, adaptive seating, and signage for people with disabilities. Ensure these spaces foster social inclusion and can be used by individuals of all ages and abilities for community events, recreation, and social activities.
- c. Action step 3:** Foster enriched community spaces. Support vibrant communities and neighborhoods by providing opportunities for maker spaces, community art spaces, sports fields, community and recreation centers, and parks with amenities that welcome people and encourage use, including shade over play areas, water foundations, and restrooms.

3. Strategy 3: Design and support investment in infrastructure projects that foster connected communities

- a. Action step 1:** Design and build communities that prioritize walkability by incorporating sidewalks, bike lanes, complete streets, and shorter distances between homes, workplaces, and amenities.
- b. Action step 2:** Collaboratively design a safe and convenient circulation system for pedestrians that focuses on crosswalks, improves the connections between neighborhoods and commercial areas, and provides places to sit or gather, pedestrian-scaled street lighting, buffers from moving vehicle traffic, and amenities.
- c. Action step 3:** Develop and maintain accessible recreational spaces, equipped with appropriate facilities for people of all ages and designed to support community use, such as parks, trails, shade structures, restrooms, and gardens, to promote physical activity and social connection.
- d. Action step 4:** Coordinate land use and transportation planning to better meet transportation demand through sustainable alternatives like walking, cycling, and public transit, reducing greenhouse gas emissions.

4. Strategy 4: Expand and improve public transportation

- a. Action step 1:** Increase public transportation options to connect residents with jobs, healthcare, and other essential destinations.
- b. Action step 2:** Expand and improve public transportation to allow more individuals to participate in the workforce, creating economic opportunities for those households.
- c. Action step 3:** Upgrade transit facilities, including bus stops, to accommodate environmental hazards related to climate change, including shared cover, water stations, and Wi-Fi.

5. Strategy 5: Enhance the capacity of the local workforce to support infrastructure development

- a. Action step 1:** Enhance the internal capacity of the local and regional government's workforce to manage the review and delivery of infrastructure projects.
- b. Action step 2:** Identify opportunities for local agencies to collaborate on workforce training that enhances workers' ability to review and process infrastructure project approvals.

6. Strategy 6: Promote stronger partnerships between funding agencies and applicants (i.e., local governments or organizations seeking funding for infrastructure projects)

- a. Action step 1:** Co-create strategies between funding agencies and applicants, to improve success with grant applications for infrastructure development.
- b. Action step 2:** Build on Solidarity Economics principles to support partnerships between local government agencies and nonprofit organizations to identify challenges and opportunities in securing grant funding, particularly for small and rural communities.
- c. Action step 3:** Identify innovative models for financing and developing infrastructure that supports inclusive economic development, equitably assigns development costs, and does not overburden lower-income households.

7. Strategy 7: Align infrastructure planning and projects with state climate policies

- a. Action step 1:** Prioritize next-generation transit solutions like zero-emission buses and rail expansion, especially in communities affected by pollution.
- b. Action step 2:** Enhance public transportation to replace private vehicle use and reduce emissions.
- c. Action step 3:** Leverage funding for electrified buses and zero-emission vehicles (ZEV) in public transit.
- d. Action step 4:** Develop a climate action plan¹⁰ for increased health resilience during heatwaves. Support the development and operation of resilience centers and other infrastructure that advances recommendations in the climate action plan, including access to cooling centers and shaded spaces, especially during higher summer temperatures.
- e. Action step 5:** Utilize urban greening funds to reduce the urban heat island effect, allowing communities to better prepare for heatwaves.

¹⁰ "Climate Action Plans" are often referred to as "Heat Action Plans".

- f. Action step 6:** Call on local governments to consider the adoption of Climate Resilience Districts to finance infrastructure needed to address sea level rise, extreme heat, extreme cold, and the risk of wildfire, drought, and flooding.
- g. Action step 7:** Strengthen regional resilience by investing in disaster prevention infrastructure to better withstand climate-related challenges and natural disasters.



Digital Infrastructure: Enhancing connectivity and digital access to empower workers and businesses and unlock community opportunities



Description

Digital infrastructure drives economic opportunity by expanding broadband access and promoting technology adoption, creating pathways to quality tech careers, enabling businesses to compete in the digital economy, and fostering innovation across sectors.



Challenges

There is a lack of reliable, affordable broadband. In IC, "internet deserts" leave 92% of some areas without home internet, while only 66% of rural SDC meets broadband standards. High costs and limited digital literacy disproportionately affect low-income and disinvested communities. Tribal areas face unreliable service. A regional strategy is critical to improve broadband access, reduce costs, and bridge the digital divide for equitable economic opportunities.



Regional Assets

- Key partners (e.g., Southern Border Broadband Consortium) and state level initiatives (CA Digital Equity Plan)
- IC: Key partners (e.g., Imperial Valley Telecommunications Authority) and key initiatives (e.g., BorderLink initiative, El Centro Public Library mobile hotspots)
- SDC: Key strategies (e.g., Comprehensive Broadband Plan, Tech Connect Program, SANDAG's Digital Infrastructure Master Plan)



Supporting Strategies

- 1. Expand and enhance digital infrastructure:** collaborate with telecom providers and local governments to deploy broadband in disinvested, hard-to-reach areas, aligning with regional plans
- 2. Empower residents through digital literacy:** launch campaigns and provide accessible training programs to promote digital inclusion
- 3. Strengthen pathways to digital economy jobs:** foster public-private partnerships for workforce development in tech fields to expand digital skills of local residents
- 4. Align broadband expansion with sustainability:** coordinate infrastructure projects to minimize environmental impact and promote resource-efficient practices

Photo by Josh Sorenson: <https://www.pexels.com/photo/ethernet-cables-plugged-on-a-server-rack-1054397/>

Digital Infrastructure

Definition

Digital infrastructure encompasses the essential digital systems, networks, and services that support a community's connectivity, communication, and access to digital public resources. This includes high-speed internet, data-sharing platforms, cybersecurity systems, and digital public services, all of which enable residents and businesses to participate fully in today's digital economy. Strong digital infrastructure is fundamental to fostering equitable access to information and resources, supporting economic growth, and enhancing the quality of life in communities.

Under the North American Industry Classification System (NAICS), this industry aligns with code 51 ("Information"), with specific subcodes for various digital infrastructure jobs, including codes 517111 for Wired Telecommunications Carriers, providing services such as wired broadband Internet, cable television distribution, and VoIP services; 517112 for Wireless Telecommunications Carriers (except Satellite), offering cellular phone services, wireless Internet access, and paging services; 517410 for Satellite Telecommunications; and 518210 for Computing Infrastructure Providers, Data Processing, Web Hosting, and Related Services, encompassing cloud computing services (IaaS, PaaS), data centers, web hosting, application hosting, cloud storage services, and computing platform infrastructure provision. While these codes serve as a practical reference and were used to compile industry information (as available data is often categorized under it), they may not fully capture all nuances or variations within the industry.

Rationale

By providing broadband access, public Wi-Fi, and secure digital services, digital infrastructure enhances connectivity and enables access to educational programs, employment opportunities, and essential public health information, particularly for disinvested communities and rural areas. Digital infrastructure helps promote equitable access to resources and services that improve quality of life. Strategic investments foster the growth of local and cross-border economies, facilitating trade and creating more inclusive opportunities for small businesses, entrepreneurs, and local industries to thrive in a digital-first economy.

Furthermore, digital infrastructure plays a crucial role in expanding access to jobs. Globally, research indicates that achieving universal broadband coverage by 2030 could create 24 million new jobs, with 6.4 million filled by young adults (International Labour Organization, 2022). At the national level, investments in digital infrastructure have already driven job creation, with a recent study showing that infrastructure improvements contributed to 280,000 new jobs nationwide between April 2020 and March 2024 (UCLA Anderson Forecast, 2024). In rural areas, another study found that broadband availability and adoption positively impacted

employment rates during COVID-19, suggesting that improved digital infrastructure can enhance job access and economic opportunities for rural populations (Isley & Low, 2022).

The importance of digital infrastructure for job access is further emphasized by the fact that California's tech sector supports 4.2 million jobs—20% of all jobs statewide—when accounting for direct employment and ripple effects across other industries (California Foundation for Commerce and Education [CFCE], 2024). This underscores the vital role technology and digital infrastructure play in granting the Southern Border region access to such a critical sector.

Digital infrastructure can also positively contribute to public health and safety by expanding access to telemedicine and health information and making healthcare services more accessible to remote communities. For instance, more than half of Californians access health records or insurance information online (Public Policy Institute of California, 2024). The availability of telehealth and digital wellness platforms can empower residents to manage their health, supporting outcomes in disinvested communities with limited access to in-person healthcare services. As the need for digital access grows, robust digital infrastructure can create healthy communities across the Southern Border region.

Challenges

Imperial and San Diego Counties face significant challenges in digital infrastructure that impact residents' access to essential services, economic opportunities, and quality of life (Imperial Valley Economic Development Corporation [IVEDC], 2024). Without adequate broadband connectivity, individuals lack access to essential services such as advanced healthcare, online banking, distance learning, and employment opportunities (IVEDC, 2024). Both counties grapple with issues of broadband availability, affordability, and adoption, particularly in unincorporated and rural regions (IVEDC, 2024). These challenges manifest differently in each county, but overall, are shared across the region, highlighting the need for collaborative efforts to address the digital divide.

Key challenges across both counties include inadequate broadband infrastructure in rural and remote areas, affordability issues that prevent low-income residents from accessing high-speed internet, and a lack of digital literacy skills among certain populations, particularly in disinvested communities. The topography of the region, which includes desert and mountainous areas, further complicates the deployment of traditional broadband infrastructure (San Diego Association of Governments [SANDAG], 2021).

Digital inequity particularly impacts Tribal communities in the Southern Border. Across California, more than a quarter of households lack broadband service at 100 Mbps speeds. Even where service is available, it is often unreliable, limiting access to essential resources (Michelson 20MM Foundation, 2024).

These shared challenges underscore the importance of regional cooperation and targeted initiatives to improve digital connectivity and ensure that all residents can participate fully in the digital economy.

To address digital infrastructure challenges and advance digital equity—critical for expanding access to quality jobs—a comprehensive regional strategy is essential. This approach should improve broadband availability, affordability, and adoption in disinvested communities where digital gaps limit employment opportunities. By identifying access barriers, prioritizing high-need areas, and taking targeted actions to bridge the digital divide, this strategy can directly support job access. Key steps include integrating broadband into development plans, standardizing broadband speeds, and building partnerships among government, public utilities, and private organizations (San Diego Association of Governments [SANDAG], 2021).

Challenges – Imperial County

In Imperial County, a recent study found that 92% of surveyed residents in an unincorporated area in Imperial did not maintain an at-home internet subscription due to availability, reliability, or affordability concerns (Imperial County News Center, 2023). The County's rural and desert landscape presents physical barriers to infrastructure development, leading to "internet deserts" where residents often pay higher prices for lower-speed internet access (Imperial Valley Economic Development Corporation [IVEDC], 2024). To address these challenges, the IVEDC formed the Southern Border Broadband Consortium (SBBC) in 2016, utilizing an initiative from the California Advanced Services Fund (CASF) to improve broadband availability and adoption in unserved and underserved areas of Imperial and San Diego counties (IVEDC, 2024). This effort aims to enhance connectivity, providing residents with access to critical online services such as advanced healthcare, online banking, distance learning, and employment opportunities, ultimately contributing to an improved quality of life in the region.

Challenges – San Diego County

While 94% of urban residents in San Diego County have access to fixed broadband meeting FCC standards, only 66% of rural communities have such access (San Diego Association of Governments [SANDAG], 2023). The digital divide disproportionately affects communities of color and low-income households, with 10% of residents from communities of color lacking a computer and/or broadband access (SANDAG, 2023). Affordability remains a major barrier, especially in rural and Tribal areas where costs can reach up to \$90 per month for slow and unreliable service (County of San Diego, 2024). These disparities in access and affordability significantly impact education, job opportunities, and access to essential services, highlighting the urgent need for targeted efforts to bridge the digital divide across the region.

Regional Assets (including potential partners)

Regional assets across Imperial and San Diego Counties include collaborative efforts to address digital infrastructure challenges. The Southern Border Broadband Consortium (SBBC), formed by the Imperial Valley Economic Development Corporation (IVEDC) in 2016, works to improve broadband availability and adoption in both counties (IVEDC, 2024). Additionally, both counties benefit from state-level initiatives such as the California Digital Equity Plan, which aims to allocate billions of dollars to communities for digital equity improvements (IVEDC, 2024).

Regional Assets – Imperial County

In Imperial County, a key regional asset is the Imperial Valley Telecommunications Authority (IVTA), which provides broadband access to county-wide schools, public agencies, hospitals, and first responders through an infrastructure of over 200 miles of fiberoptic cables and 22 towers across the County (IVTA, 2024). The IVTA's innovative partnership with the Imperial Irrigation District (IID) grants access to essential infrastructure assets, including fiberoptic networks, poles, and towers, significantly reinforcing their mission. Furthermore, the BorderLink initiative strives to connect the student population by providing high-speed internet access at home at no cost to them (IVTA, 2024). The El Centro Public Library also offers free mobile hotspots for a one-week checkout to adults with a library card. These hotspots provide fast and reliable 4G internet service and can connect up to 15 devices, helping residents bridge the digital divide. In fact, the library's initiative has supported numerous community members in staying connected (El Centro, 2024). However, opportunities remain to enhance access to Wi-Fi hotspots beyond the rental program, as outlined in the Supporting Strategies below.

Regional Assets – San Diego County

San Diego County has developed a Comprehensive Broadband Plan that identifies priority locations based on connectivity gaps and guides infrastructure project decisions (San Diego County, 2024). The county has implemented several initiatives, including the Tech Connect Program, which provides Google Chromebooks and MiFi hotspots with unlimited data plans to connect residents and students to the internet for free (San Diego County, 2024). Additionally, SANDAG is working on a Regional Broadband and Digital Infrastructure Master Plan, set to be completed in 2024, which aims to keep the San Diego region at the forefront of the digital revolution (SANDAG, 2024). Moreover, San Diego County is actively seeking public input and partnerships to maximize the impact of available funding for broadband expansion. The county has allocated \$9 million in American Rescue Plan Act (ARPA) funds for expanding high-speed broadband and affordability programs in unincorporated areas (Randall, 2024). This initiative demonstrates the county's commitment to addressing the digital divide through collaborative and community-driven approaches.

Supporting Strategies

1. Strategy 1: Expand and enhance digital infrastructure and access to ensure equitable connectivity for all residents

- a. Action step 1:** Collaborate with telecom providers, public agencies, and local governments to encourage broadband deployment in underserved areas. Ensure that community benefits are incorporated into operational commitments and that initiatives align with local priorities for equitable and sustainable access. Coordinate efforts with regional plans, including the Imperial Valley Telecommunications Authority (IVTA), San Diego County's Comprehensive Broadband Plan, and SANDAG's Digital Infrastructure Master Plan, to avoid funding duplication and enhance collaboration.
- b. Action step 2:** Establish and expand community Wi-Fi hotspots in public spaces (e.g., public buildings, libraries, state universities) for residents lacking at-home internet access (in addition to continuing to support existing initiatives such as one-week rentals of the El Centro Public Library Mobile Hotspots).
- c. Action step 3:** Develop hardware access programs to provide low-cost or subsidized devices for disinvested communities, ensuring the necessary tools to connect to broadband services.

2. Strategy 2: Empower residents through digital literacy and community engagement initiatives to ensure equitable access to digital resources and opportunities

- a. Action step 1:** Launch digital literacy campaigns to help residents and public schools maximize the use of new infrastructure.
- b. Action step 2:** Foster public-private partnerships that support community-based digital engagement efforts, such as digital literacy training, ensuring resources are available in the languages most relevant to the disinvested communities they are intended to serve.
- c. Action step 3:** Provide accessible digital training programs, workshops, and resources to promote digital inclusion and enable residents to effectively engage with and benefit from new technology.

3. Strategy 3: Strengthen pathways to digital economy jobs through workforce development initiatives

- a. Action step 1:** Foster public-private partnerships to offer paid digital apprenticeships, internships, and job placements in tech fields, coordinating with local tech firms to provide hands-on experience and career opportunities for residents.

- b. Action step 2:** Launch skill-bridging programs focused on in-demand digital skills, such as coding, IT support, and cybersecurity.
- c. Action step 3:** Develop programs to connect local talent with employment opportunities in tech by implementing mentorship programs that link residents with tech industry professionals.

4. Strategy 4: Align broadband expansion with environmental sustainability

- a. Action step 1:** Advocate for local governments and utilities to coordinate broadband infrastructure projects with other public infrastructure developments, minimizing environmental impact and integrating resource-efficient practices into broadband deployment.
- b. Action step 2:** Promote fiberoptic installations for sustainable, long-term digital infrastructure that supports environmental goals.
- c. Action step 3:** Partner with environmental organizations to ensure that digital infrastructure projects are designed and implemented in ways that support broader sustainability objectives, such as reducing energy consumption and minimizing waste.



Housing: Supporting safe, stable, and affordable housing to increase workforce retention and productivity, and create jobs

Description

Housing encompasses the availability of safe, stable, and affordable living spaces, addressing homelessness and supporting economic stability. Housing stability underpins economic growth by supporting workforce retention and productivity, while construction of affordable units creates quality jobs in building and management across both counties.



Challenges

The region's severe housing affordability crisis forces residents to spend disproportionate income on housing, perpetuating poverty, and limiting access to jobs by reducing job stability. Limited land, high costs, zoning regulations, and "missing middle" gaps leave essential workers without options. Insufficient funding, long wait times, and low awareness further restrict access, harming mobility and retention.



Regional Assets

- Federal and State housing programs (e.g., Section 8 Housing Choice Voucher program and the HOME Investment Partnerships Program) and non-profit support
- IC: Key programs (e.g., Farmworker housing programs, financial assistance for home purchases)
- SDC: Key programs (e.g., Complete Communities Now initiative, Housing Blueprint program)



Supporting Strategies

1. **Streamline affordable housing development:** simplify processes, identify surplus land, support low-middle-income housing to promote access
2. **Promote community-driven ownership & anti-displacement:** Empower communities through cooperatives to prevent displacement
3. **Strengthen workforce development in housing:** Expand training and job opportunities in housing and construction to create local job growth
4. **Expand housing access & equity:** Provide essential worker housing near job centers to support workforce retention
5. **Integrate climate sustainability in housing:** Implement climate-resilient building practices and energy-efficient technologies in housing to promote sustainable housing
6. **Develop housing resource platforms:** Centralize resources through digital platforms/outreach

Photo by Thirdman : <https://www.pexels.com/photo/sold-sticker-on-a-sign-8470796/>

Housing

Definition

Housing encompasses the availability of safe, stable, and affordable living spaces, addressing homelessness and supporting economic stability. Equitable access to housing helps disinvested communities overcome chronic unemployment, poverty, and lack of resources, thereby supporting communities' housing security and overall quality of life.

Under the North American Industry Classification System (NAICS), this industry aligns with code 53 ("Real Estate and Rental and Leasing"). While this code serves as a practical reference and was used to compile industry information (as available data is often categorized under it), it may not fully capture all nuances or variations within the industry.

Rationale

Supporting safe, stable, and affordable housing is essential for economic mobility, as rising living costs in the region impact workforce retention and create barriers for lower-income residents to access better-paying jobs or move to more affluent areas, limiting opportunities for upward mobility and perpetuating inequality (San Diego Housing Commission, 2023). Both Imperial and San Diego Counties face a severe shortage of affordable options, particularly for essential workers such as firefighters, teachers, and nurses, who are squeezed by the gap in the "missing middle" of affordability (Equity Gaps in Housing in California, 2022). The persistent mismatch between supply and demand has led to increased housing insecurity and homelessness throughout the region (Regional Task Force on Homelessness, 2022). This crisis extends beyond individual families, carrying broader implications for the region's economic stability and growth. Addressing these challenges has the potential to reduce chronic unemployment and poverty while fostering a more equitable and prosperous community for all residents.

Challenges

The Southern Border region is grappling with severe housing affordability challenges, with households across the region spending a disproportionate amount of their income on housing costs (U.S. Census, 2022). These financial pressures make it difficult for residents to afford other essentials, further perpetuating cycles of poverty in both counties. Development constraints also present a significant barrier to addressing the affordability crisis. Limited available land, high construction costs, and complex zoning regulations hinder the development of affordable housing across the region (County of San Diego, 2022; County of Imperial, 2022). Recent housing price increases in Imperial County have further exacerbated the gap between supply and demand, while in San Diego County, a "missing middle" gap leaves essential workers who are above the income limit for subsidized housing but cannot afford

market-rate rents—without adequate options. The demand for affordable housing for lower-income households is especially significant in the region. While housing initiatives often aim to attract new residents or higher-income households, it is crucial for the region to prioritize addressing the housing needs of disinvested communities to ensure equitable access for all.

Furthermore, while regional assets that promote access to affordable housing exist, resources are severely limited by long wait times for assistance programs, insufficient affordable housing supply, inadequate funding, and a lack of awareness about housing resources (Imperial County Housing Element, 2021; San Diego Housing Commission, 2023; City of El Centro, 2024). These issues collectively challenge economic mobility and workforce retention, leading workers to be pushed farther from job centers—exacerbating regional inequality (Imperial County Housing Element, 2021; San Diego Housing Commission, 2023).

Challenges - Imperial County

Imperial County faces distinctive housing challenges driven by its rural setting and significant economic disparities. Housing prices in the County have surged, with five of California’s top ten zip codes for the largest one-year home value increases located here. Communities like El Centro and Brawley saw price hikes up to 19%, deepening affordability issues (San Francisco Chronicle, 2024). Homeownership rates in Imperial County are below the national average, with only 57.7% of households owning homes compared to 64.4% nationally (Data USA, 2024). This affordability crisis is acutely felt by Latino/a residents, with 20% of these households spending over 30% of their income on housing, and 14.2% allocating more than half of their income to housing costs, imposing substantial financial strain (United Ways of California, 2023). Infrastructure gaps further complicate quality of life and economic prospects, particularly in rural and underserved areas, while constrained land availability, high construction costs, and restrictive zoning limit the development of affordable housing throughout the county (Imperial County Housing Element, 2021). The County also faces significant challenges with public housing assistance. Waitlists often extend over a year, leaving many without support. Additionally, income discrimination by landlords, such as refusing to accept housing vouchers or other public assistance, significantly restricts housing options for low-income residents, exacerbating inequities and limiting access to stable, affordable housing (City of El Centro, 2024).

Challenges - San Diego County

San Diego County faces a severe affordable housing crisis, with a shortage exceeding 134,500 homes for low-income renters (San Diego Housing Commission, 2023). Declines in state and federal funding, down by 13% for housing production and preservation, have intensified the shortage (San Diego Housing Commission, 2023). The County’s high renter population—the second largest in California—also faces elevated overcrowding rates, with 6.4% of renter

households affected, compared to only 2% of homeowners (Equity Gaps in Housing in California, 2022). Housing costs are especially burdensome for communities of color, with over 27% of Black residents and nearly 20% of Latino/a residents spending more than half of their income on housing, compared to 15% of white residents (Equity Gaps in Housing in California, 2022). Essential workers and middle-income households face significant challenges, as they earn too much to qualify for assistance but still cannot afford market-rate housing, underscoring a major gap in housing options for this “missing middle” income group (San Diego Housing Commission, 2023). Access to housing resources, such as Section 8 vouchers, is severely limited due to long wait times, with demand far exceeding availability. Each year, tens of thousands of families apply to the San Diego Housing Commission (SDHC) program, resulting in an average wait time of up to 15 years (SDHC, 2024). The high cost of housing in the county further exacerbates the issue, as more funding is required to support existing voucher holders. In the past four years, the average per-family subsidy has increased by 49% (Voice of San Diego, 2024).

Regional Assets (including potential partners)

Both Imperial and San Diego counties benefit from the San Diego Regional Center, which has a field office in the City of Imperial, providing services to all of Imperial County (San Diego Regional Center, 2024). The region also shares access to various federal and state housing programs, such as the Section 8 Housing Choice Voucher program and the HOME Investment Partnerships Program, administered by local housing authorities in both counties (U.S. Department of Housing and Urban Development, 2024). Additionally, the area benefits from collaborative efforts between public and nonprofit agencies to offer affordable housing resources and rental assistance programs (California Department of Housing and Community Development, 2023). Furthermore, given that both counties share similar challenges related to rising housing costs and limited affordable housing stock, joint initiatives and policy approaches can be deployed to address these issues on a regional scale (Imperial County Transportation Commission, 2023).

Regional Assets - Imperial County

The Imperial Valley Housing Authority (IVHA) provides essential affordable housing services, such as public housing units tailored for low-income residents, seniors, and farm workers (Imperial Valley Housing Authority [IVHA], 2023). Given Imperial County's significant agricultural economy, specialized housing programs for farm workers have been critical, with developments such as Sunset Garden Apartments and Tierra del Sol offering income-based rents to farm worker families (IVHA, 2023). The County also offers financial assistance programs to support low-income families in purchasing homes and rehabilitating existing properties, which increases homeownership rates and improves living conditions for residents (Imperial County Economic Development Division, 2024).

Regional Assets - San Diego County

The San Diego Housing Commission (SDHC) plays a pivotal role in providing affordable housing solutions, such as providing rental assistance to more than 16,000 households with low incomes in the City of San Diego (San Diego Housing Commission [SDHC], 2024). Notably, more than 50% of SDHC's rental assistance households are seniors or individuals with disabilities. Additionally, SDHC owns or manages more than 4100 affordable rental housing units and has partnered with developers to produce more than 23,000 affordable rental housing units citywide. SDHC also supports homeownership through its First-Time Homebuyer Program, which has helped over 6000 families and individuals achieve homeownership (SDHC, 2024). San Diego County's "Complete Communities Now" initiative also seeks to accelerate housing development by streamlining the permitting process, particularly for projects near public transportation to increase housing production, including many affordable units (City of San Diego, 2024). Since its adoption in December 2020, the program has already yielded significant results, with the issuance of 22 building permits for the creation of 1,600 homes, including 280 affordable units (California Construction News, 2024). Furthermore, the County of San Diego's "Housing Blueprint" outlines strategic goals to address the housing affordability crisis, emphasizing community input and balancing priorities such as sustainability and equity while maximizing resources for affordable housing development (Engage San Diego County, 2024).

Supporting Strategies

1. Strategy 1: Streamline affordable housing development to meet the needs of lower-income current residents

- a. Action step 1:** Identify surplus land and streamline planning and permitting processes to accelerate affordable housing projects.
- b. Action step 2:** Provide grants and technical assistance to support affordable housing development, rehabilitation of existing affordable housing, ADA compliance and greater accessibility, and the provision of services to individuals living in affordable housing.
- c. Action step 3:** Focus on affordable housing development for low- and middle-income households, ensuring that new developments do not cater exclusively to luxury condos or high-end developments, and implement incentives for mixed-income housing models.
- d. Action step 4:** Increase availability of affordable housing in neighborhoods that are sustainable and near essential services such as public transportation, schools, healthcare facilities, and green spaces. This would promote both economic and ecological stability.
- e. Action step 5:** Create a fund or financial assistance program to help

homebuilders with permitted affordable housing projects that are stalled due to lack of capital access, to facilitate the development of affordable housing and meet demand.

2. Strategy 2: Promote community-driven ownership and anti-displacement initiatives

- a. Action step 1:** Support and scale cooperative housing models, shared equity housing, and other wealth-building initiatives to create sustainable ownership opportunities for residents and community-based organizations, especially in historically disinvested communities.
- b. Action step 2:** Develop and implement anti-displacement strategies to protect existing affordable housing from gentrification pressures and support community ownership through models like cooperatives and community land trusts.
- c. Action step 3:** Remove barriers for nonprofits and community-based organizations to acquire, rehabilitate, and preserve affordable housing units, focusing on small-site acquisition programs and amplifying efforts that support disinvested populations, including refugees and immigrants.
- d. Action step 4:** Mitigate restrictive rental policies by advocating for inclusionary zoning reforms, rental protections, and transparent regulatory frameworks to prevent displacement, by ensuring housing remains accessible for diverse income levels, empowering residents to maintain long-term stability and community ownership in their neighborhoods.

3. Strategy 3: Strengthen workforce development in housing and construction to support local economic growth

- a. Action step 1:** Establish training programs that equip residents with high-demand skills for housing and construction sectors, including pre-apprenticeship and apprenticeship programs.
- b. Action step 2:** Generate employment through affordable housing projects, empowering disinvested communities with local job opportunities.

4. Strategy 4: Expand housing access and equity to meet the needs of essential workers and underserved populations

- a. Action step 1:** Increase the availability of safe, affordable housing options specifically for farmworkers in Imperial County.
- b. Action step 2:** Establish cross-sector collaborations in San Diego to develop housing solutions that consider essential workers' commuting patterns, proximity to workplaces, and affordability thresholds.

- c. Action Step 3:** Create and expand funding mechanisms to support the development of workforce and middle-income housing, including tax incentives and subsidies, while reducing reliance on luxury housing projects.

5. Strategy 5: Integrate climate adaptation and sustainability practices in housing

- a. Action step 1:** Enforce building codes that require new housing to use climate-resilient materials and landscaping.
- b. Action step 2:** Implement programs to incorporate green building materials and sustainable construction practices in affordable housing, prioritizing lower-income communities and ensuring projects reduce climate impact in underserved areas.
- c. Action step 3:** Promote energy efficiency and resource use in affordable housing developments by encouraging renewable energy installations, like solar panels, in new and existing housing to reduce fossil fuel dependency.
- d. Action step 4:** Research the impact of vacant properties on housing accessibility, affordability, and environmental sustainability in San Diego County; if findings indicate a need for policy solutions, identify potential policies based on findings (e.g., incentives for owners to lease at affordable rates; the feasibility of a vacant property tax as implemented in Oakland, California), to encourage efficient land use and support climate resilience.

6. Strategy 6: Develop platforms to facilitate access to housing resources and information

- a. Action Step 1:** Create a centralized platform for housing resources and opportunities in Imperial Valley, including a database to track available unoccupied properties. Expand and integrate existing housing platforms in San Diego County to form a comprehensive database, such as one that provides real-time updates on Section 8 voucher availability and affordable housing listings.
- b. Action Step 2:** Increase education and awareness about available housing resources through outreach campaigns, distributing multilingual informational materials, and utilizing local community centers, social media, and partner organizations to help residents navigate housing opportunities.



Nonprofits and Community-based Organizations: Providing essential services to address resource gaps and create nontraditional career pathways

Description

Nonprofits (NPOs) and community-based organizations (CBOs) are mission-driven entities that provide essential services, address resource gaps, and advocate for disinvested communities through culturally responsive, community-centered solutions that foster resilience and equity.



Challenges

NPOs and CBOs face various challenges, including burnout, staff shortages, and financial constraints. In IC, funding restraints, limited capacity, and gatekeeping practices hinder progress, while in SDC, rising demand, financial instability, limited leadership diversity, and climate change adaptation challenges persist.



Regional Assets

- Established organizations (e.g., El Centro has 547 nonprofits, SDC has 12,851 registered public charities)
- IC: Key partners (e.g., Center for Community Energy and Environmental Justice) and key initiatives (e.g., Activate Imperial/BOOST)
- SDC: Significant reach (e.g., 83% of San Diegans benefit from nonprofit services)



Supporting Strategies

1. **Support disinvested communities:** encourage NPOs and CBOs focused on underserved communities to fill service gaps and generate local employment
2. **Strengthen capacity-building:** support NPOs and CBOs to address inequities, improve service delivery, and advocate for easier access to funding
3. **Support career pathways:** promote staff development, upskilling, fair compensation, and address burnout to create sustainable careers
4. **Equip for climate advocacy:** integrate sustainability, enable climate advocacy participation, align with climate funding, and create green job training programs



Photo by Ron Lach : <https://www.pexels.com/photo/group-of-people-doing-an-environmental-cleanup-9543740/>

Nonprofits and Community-based Organizations

Definition

Nonprofits (NPOs) and community-based organizations (CBOs) refer to mission-driven entities dedicated to providing essential services and addressing critical gaps in resources, especially for communities in need. Through culturally responsive services and community-centered solutions, they address the unique needs of disinvested communities, fostering resilience and equity. These organizations also serve as community advocates, capacity-building centers, and resource hubs.

Under the North American Industry Classification System (NAICS), this industry aligns with code 81 (“Other Services”), with specific subcodes for various related jobs, including code 8131 for religious organizations, 8132 for grantmaking and giving services, 8133 for social advocacy organizations, and 8134 for civic and social organizations. While these codes serve as a practical reference and were used to compile industry information (as available data is often categorized under it), they may not fully capture all nuances or variations within the industry.

Rationale

NPOs and CBOs play an important role in both immediate response and sustained community empowerment. They serve as quick-response organizations in times of need, committed to addressing community challenges effectively, and consistently play a vital role in response efforts. Additionally, they fill service, programmatic, and other gaps for people in need, acting as a valuable complement to public and private sector efforts. Established organizations have built asset portfolios for long-term sustainability and have focused on intersectional issues that relate to resilience. Since the COVID-19 pandemic, the rate of nonprofits being established as a response to service gaps has increased, with more active organizations taking leadership since 2020. In Imperial and San Diego Counties, these organizations are important for providing essential safety nets, reinforcing the social fabric, and empowering residents, thereby enhancing economic stability and community well-being. Nonprofits can also play an important role in serving populations with specific needs, such as people with disabilities, immigrants, non-residents, refugees, and Tribal communities.

Moreover, formal education is not a prerequisite for establishing or working in an NPO or CBO, allowing for a diverse range of leadership, approaches, and solutions. These organizations offer flexible and tailored service delivery, client engagement, and training. They also tend to have inclusive and adaptable hiring practices that facilitate non-traditional career opportunities and pathways. Similarly, nonprofits can contribute to workforce development and the expansion of tradeable industries by providing skill-building and training opportunities.

This foundational industry also builds on local solutions that directly meet the needs of disinvested communities, instead of relying on larger agencies, which often do not have the right tools or understanding to offer personalized support. NPOs and CBOs can play an important role in facilitating collaboration, serving as a bridge between people and local businesses. Community ties enable NPOs and CBOs to support inclusive outreach, recruitment, and hiring efforts in tradeable industries, while ensuring that resources and knowledge are also shared within communities.

Facilitating connections can be particularly relevant, as some community members have highlighted the need to increase awareness of existing aid programs, with many qualified residents not currently benefiting from available opportunities. NPOs and CBOs are well-positioned to promote the utilization of these services, communicating the availability of key programs and services. For instance, nonprofits can help increase awareness of existing local programs that assist homeowners in refinancing (taking advantage of low interest rates), and home repairs (through grants for home improvements). Similarly, nonprofits can drive awareness of training resources (such as available apprenticeships, upskilling initiatives, etc.), and resources for new businesses (including support for first-time farmers).

Lastly, by working with nonprofits that fill essential service gaps and providing foundational support, community members can find employment, conduct training and build skills, start businesses, and fully engage in the workforce. In this way, NPOs and CBOs help create a sustainable, inclusive ecosystem that supports the growth of tradeable industries.

Challenges

Community-based organizations and nonprofits encounter significant challenges that impact their operations and mission delivery. According to the State of Nonprofits 2024, burnout remains a pressing issue. NPO leaders across the nation are increasingly concerned about burnout affecting both themselves and their staff, as resource shortages, high turnover, and unprecedented post-COVID challenges intensify pressures on their organizations' ability to fulfill their missions. Additionally, while many organizations continue to experience stable financial conditions—most anticipating balanced budgets or surpluses—about one-third of leaders recorded a budget deficit in the last year. Furthermore, despite a positive trend in funders committing to more flexible grantmaking practices, staffing difficulties also persist, with nearly 60% of leaders identifying staff-related concerns as a major challenge (The Center for Effective Philanthropy, 2024). These issues highlight the ongoing need for strategic support and resources to enhance the resilience of CBOs and NPOs in achieving their missions.

Moreover, increased accountability for NPOs and CBOs is also essential. Some members of the community have expressed a desire for greater transparency and effectiveness in how NPOs and CBOs operate, emphasizing the need for these organizations to be accountable for

properly managing funds and ensuring equitable access to services. This is important, as some residents have noted that organizations struggle at times to deliver programs effectively, leaving people without the services they need.

Finally, the community has highlighted that nonprofits and CBOs can face limited reach, a challenge further exacerbated by poor infrastructure, which discourages residents from seeking out these organizations and ultimately limits their impact.

Challenges - Imperial County

In Imperial County, funding restraints pose a significant challenge, as reduced funding opportunities are expected in the foreseeable future due to California's state budget constraints. Additionally, a key obstacle identified by local organizations is the lack of capacity, particularly the shortage of grant writers, fundraisers, administrators, fiscal agents, and other technical skills necessary to advance mission objectives. There are a limited number of entities in Imperial County with the workforce or capacity to serve as fiscal agents. When community-based organizations cannot serve as their own fiscal agents, they often incur significant costs by contracting with institutions such as universities, which often take 15% to 35% of grant funds for indirect costs depending on the organization.

Gatekeeping practices also affect many NPOs and CBOs, as most government grant programs operate on reimbursement terms, which are not feasible for many of these organizations. Moreover, several programs are implementing restrictive policies to limit allowable expenses, forcing organizations to either tap into other funds to meet their goals or restrict the services they provide. In general, many grants require nonprofits to do more with less.

Challenges – San Diego County

Nonprofits in San Diego County also encounter various challenges that affect their ability to serve the community. Rising costs of living and a housing crisis have increased demand for services, while inflationary pressures affect financial stability by reducing the value of donations. Smaller organizations often struggle to compete for funding against larger, established nonprofits. Efforts to enhance diversity in leadership are ongoing but progress is gradual, as leadership roles lack representation from disinvested groups. Additionally, NPOs and CBOs are adapting to the impacts of climate change, which requires strategic changes in operations. Lastly, despite a general trust in nonprofits, there is limited public awareness of their crucial roles in addressing community needs (University of San Diego, 2023).

Regional Assets (including potential partners)

Both counties have existing programs and expertise that can be leveraged to expand NPOs and CBOs across the region.

Regional Assets - Imperial County

Imperial County has a growing number of regional assets that can support and enhance the nonprofit sector. The County has been investing in pipeline programs aimed at training and growing the nonprofit workforce. Additionally, the Center for Community Energy and Environmental Justice (CCEEJ), one of 16 centers in the EPA’s Environmental Justice Thriving Communities Technical Assistance Center (EJ TCTAC) Program, is powered by a network of collaborative institutions and organizations across the region. Access to CCEEJ as a capacity-building resource will unlock the potential of both established and new organizations, enabling them to diversify their funding sources and expand the services they provide. Furthermore, initiatives such as “Activate Imperial/BOOST” will bridge philanthropic-grantee connections to diversify resources for organizations that have innovative approaches to problem-solving and successful models for implementation.

Moreover, the importance of NPOs and CBOs in the region can be exemplified by the nonprofit landscape of the El Centro metro area, which is home to approximately 547 organizations. These nonprofits are estimated to employ 3,061 people, generate over \$244 million in annual revenue, and hold assets totaling \$540 million (Cause IQ, 2024). The organizations also vary in size, from small operations with less than \$250,000 in revenue to larger entities with revenues exceeding \$5 million. The sector is diverse, with key categories including religious organizations, recreation and sports, human services, community development, and educational institutions, all of which contribute to the region's economic and social fabric.

Regional Assets - San Diego County

San Diego County's nonprofit sector boasts several strengths, including a strong community impact and high levels of public trust. In 2021, the county was home to 12,851 registered 501(c)(3) public charities—a 20% increase since 2015. In 2022, this sector represented 10% of the region's private employment, with over 3,000 nonprofits employing a total of 101,971 paid staff. Recent data shows that 83% of San Diegans benefit from nonprofit services in areas such as health, arts, education, and environmental protection, underscoring the sector’s important role in enhancing regional quality of life. Additionally, a growing trend of collaboration among nonprofits is strengthening their capacity to tackle social issues (University of San Diego, 2023).

Supporting Strategies

1. Strategy 1: Support organizations serving historically disinvested communities

- a. Action step 1:** Encourage the establishment of NPOs and CBOs that address the needs of disadvantaged communities, particularly communities of color, and that fill service gaps caused by historical disinvestment and insufficient government support. Prioritize the creation of organizations that serve specific

populations with direct services, as this provides an opportunity to generate new employment in areas of need that qualify for diverse funding sources.

2. Strategy 2: Strengthen capacity-building of nonprofits and community-based organizations

- a. Action step 1:** Expand capacity-building opportunities, leveraging new strategies from the state to support local NPOs and CBOs (e.g., through programs such as Activate Imperial/BOOST). This can contribute to creating a supportive community ecosystem that addresses both short-term and long-term inequities for disinvested communities, focused on root causes and delivered through direct service.
- b. Action step 2:** Enhance CBOs' and NPOs' on-the-ground connections to more effectively deliver messaging and services (e.g., establish technical assistance frameworks and communication channels to ensure quick and efficient responses, as community organizations should be among the first groups local agencies contact during emergencies).
- c. Action step 3:** Advocate for reforms in local philanthropy's funding mechanisms. Encourage the removal of barriers so NPOs and CBOs can access funding more easily, by advocating for local philanthropies to allow for broad flexibility in disbursements.
- d. Action step 4:** Foster trust and coordination among community-based organizations and nonprofits by establishing collaborative funding platforms where NPOs and CBOs can adopt a regional approach to fundraising. By coordinating efforts, as applicable, NPOs can maximize access to funding, rather than competing for it. Boosting collaboration can also help NPOs overcome a scarcity mentality by increasing access to resources.
- e. Action step 5:** Foster mechanisms to increase accountability and transparency for services provided by NPOs and CBOs (e.g., through public annual reports, community feedback systems, accountability pacts, or others), with the goal of ensuring that funds are dispersed correctly and that there is equitable service delivery to disinvested communities.
- f. Action step 6:** Support the development of outreach initiatives to assist community members in applying for available programs, opportunities, and services offered by the government or other organizations, addressing barriers such as lack of awareness.

3. Strategy 3: Support long-term career pathways within the sector

- a. Action step 1:** Promote staff development to grow into long-term professional roles. Encourage workforce to acquire skills and knowledge that can be

transferred to multiple career paths, like areas such as behavioral health and public health.

- b. Action step 2:** Support CBOs in positioning themselves as hubs for upskilling workers from sectors at risk, such as agricultural workers affected by water shortages.
- c. Action step 3:** Eliminate barriers to technical and other skills training through language access, culturally relevant technical assistance, and the development of a workforce with lived experience. Ensure adequate hiring of Spanish-speaking individuals, considering the proximity to the California-Mexico border.
- d. Action step 4:** Support fair compensation and benefits for CBO workers by compensating individuals without formal education who can contribute valuable lived experiences to community organization services. Ensuring things like regular healthcare access will improve long-term health outcomes for employees in the sector, many of whom work in sensitive environments most impacted by climate change.
- e. Action step 5:** Address burnout as a critical workplace issue by promoting work-life balance, encouraging adequate staffing levels in NPOs and CBOs, and fostering a culture of recognition and support to help organizations sustain staff well-being.

4. Strategy 4: Equip NPOs and CBO with the ability to lead climate advocacy and prepare businesses and community members for a resilient future

- a. Action step 1:** Integrate sustainability practices into nonprofit operations. Adopt and promote strategies that reduce the organizations' carbon footprints.
- b. Action step 2:** Conduct impact assessments for environmental sustainability. Evaluate the environmental sustainability of materials most used for direct services to help reduce environmental impacts.
- c. Action step 3:** Facilitate involvement in climate advocacy. Support organizations that wish to grow by enabling their participation in climate advocacy and the just transition space.
- d. Action step 4:** Develop funding strategies that align with state and federal programs to provide communities with pathways to climate-friendly strategies, such as weatherization.
- e. Action step 5:** Create training and upskilling programs with environmental organizations to prepare displaced workers for green projects, such as weatherization, climate resilience centers, and cooling centers.

5.2 Locally Serving Industries

Locally serving industries include those that circulate existing money within the Southern Border region by providing goods and services to businesses and consumers within the counties. They represent critical elements that build upon foundational industries and create an environment for tradeable industries to thrive.

Figure 8: Overview of Locally Serving Industries in the Southern Border region



Details on each locally serving industry are in the following pages.



Community Health: Expanding access and addressing social determinants to boost workforce productivity, enhance resilience, and support quality jobs

Description

The Community Health sector focuses on improving public health outcomes by addressing social determinants such as housing, economic stability, and environmental risks. By addressing health disparities and promoting integrated care, the community health sector enhances productivity, fosters resilience, and supports industry growth.



Challenges

Geographic barriers, healthcare workforce shortages, and climate risks exacerbate health inequities.



Opportunity

Invest in integrated care, workforce development, and telehealth to address disparities and increase resiliency.



Regional Assets

- Established telehealth providers and community organizations ecosystem
- IC: Training programs (e.g., Community Health Plan of Imperial Valley) and non-profit ecosystem focused on health and wellness
- SDC: Educational programs and institutions (e.g., UC San Diego, Palomar)



Job quality & access, equity, and climate

- **Expand** stable jobs with healthcare benefits and career growth opportunities, addressing regional workforce shortages and wage gaps
- **Prioritize** telehealth and Community Healthcare Worker (CHW) programs to improve care access in underserved areas and promote workforce diversity through tailored training and scholarships
- **Implement** sustainable practices, including energy-efficient clinics and cooling centers, to mitigate climate-related health risks and enhance resilience



Supporting Strategies

1. **Address social determinants:** link healthcare with services like housing, nutrition, and education to improve well-being and reduce long-term costs
2. **Enhance workforce development:** create tailored training programs, provide scholarships
3. **Develop CHW programs:** recruit, certify, and place CHWs to address care gaps and provide culturally relevant health support
4. **Expand telehealth services:** invest in infrastructure, train providers, and educate communities to improve access to remote care and reduce travel-related barriers



Photo by Photo By: Kaboompics.com: <https://www.pexels.com/photo/a-doctor-on-a-video-call-with-a-patient-7195091/>

Community Health

Definition

The Community Health sector encompasses the branch of public health that focuses on the health outcomes of groups of individuals, emphasizing the interconnectedness of social, economic, and environmental factors in promoting overall well-being. Community health includes a broad spectrum of services, including primary care, mental health services, preventative health measures, and community-based health interventions. In the Southern Border region, this sector specifically focuses on integrated, holistic approaches to health that address not only physical and mental well-being but also the social determinants that impact health, such as economic stability and environmental quality.

Under the North American Industry Classification System (NAICS), this industry is classified under sector code 62 (“Health Care and Social Assistance”). While this code serves as a practical reference and was used to compile industry information (as available data is often grouped under it), it may not fully encompass all nuances or variations addressed in this subsection.

Rationale

Ensuring equitable healthcare access is critical to improving the well-being of all residents, particularly those in underserved and rural communities, as health directly impacts workforce participation and economic stability. Additionally, addressing key social determinants of health such as housing and economic security creates conditions that support physical and mental wellbeing, enabling individuals to sustain consistent employment and pursue career advancement.

A robust healthcare industry not only enhances healthcare delivery, but also attracts and supports the growth of other industries, by fostering a healthier and more efficient workforce. In this capacity, equitable access to community health is critical for developing and expanding the Southern Border region’s tradeable industries—including agriculture, clean energy, manufacturing, arts and tourism, life sciences, quality transportation, and warehousing—by ensuring that the workforce in these sectors remains healthy and productive with benefits that promote long-term health and productivity.

By strengthening the relationship between health and employment and recognizing the positive ripple effects of a strong healthcare sector on other industries, the region can reduce disparities, improve quality of life, and foster a healthier, more equitable, and economically vibrant community.

Challenges

The Southern Border region presents specific health challenges, with metrics indicating a critical need for improvement. For instance, the infant mortality rate is approximately 6.5 deaths per 1,000 live births, higher than the national average of 5.6. Chronic diseases such as diabetes, asthma and hypertension are prevalent, with rates exceeding national figures. Additionally, life expectancy in the U.S.-Mexico border region averages around 78 years, whereas the national average is about 79.5 years (U.S. Department of Health and Human Services, 2020). Addressing these disparities is crucial for fostering healthier communities.

Geographic barriers further complicate access to healthcare services. Many residents live in healthcare deserts, particularly outside metropolitan areas, where facilities are limited. This leads to increased travel times for appointments and often forces residents to seek care in distant locations, compounding existing challenges related to transportation and accessibility.

Specifically, the Southern Border region presents a dual healthcare landscape, with San Diego County benefiting from a robust but unevenly distributed healthcare infrastructure, while Imperial County faces rural isolation, economic challenges, and a scarcity of healthcare resources. Both counties are impacted by climate risks, income disparities, and the unique dynamics of a cross-border healthcare system.

Challenges - Imperial County

Imperial County faces significant healthcare challenges, with a healthcare workforce only 50% of the state average per capita (Location Quotient of 0.50¹¹) and just 6,500 healthcare workers, contributing to long wait times and economic losses from reverse medical tourism (U.S. Bureau of Labor Statistics, 2023). Strategies such as competitive salaries, loan forgiveness, affordable housing, and professional development are essential to attract and retain healthcare professionals. Income disparities exacerbate these issues, as the county's per capita income is \$21,377—well below the state average—limiting access to medical care. High healthcare costs further strain residents, with California's per capita healthcare spending at \$10,299 in 2020 (California Health Foundation, 2023). Health outcomes are similarly concerning, with 12% of adults living with diabetes and childhood asthma rates nearly double the state average, driven in part by poor air quality linked to the receding Salton Sea, drought, and industrial development (CalMatters, 2023).

Limited local healthcare access forces many residents to seek care outside the region. Approximately 5% of residents travel to Mexicali, Mexico for specialized services, while others

¹¹ A location quotient (LQ) is a statistical tool that compares the concentration of a specific industry, occupation, or type of employment in a region to the national average. It's calculated by dividing the industry's share of a region's total for an economic statistic by the industry's share of the nation's total for the same statistic.

rely on providers in San Diego County (Inewssource, 2024). San Diego County's American Indian/Alaska Native population also struggles with limited healthcare facilities, often traveling long distances for emergency and inpatient care. These trends underscore the urgent need to improve local healthcare infrastructure and reduce dependence on external providers.

Uninsured rates in Imperial County remain high, with 11.83% of residents lacking health insurance compared to the state average of 10.5% (Imperial County Health Status Report, 2019). This figure likely underrepresents the need, as many farmworkers and disinvested groups are excluded from official data, despite requiring substantial healthcare support.

These systemic challenges hinder the county's ability to attract investment and grow its workforce. Ranked in the bottom quartile for healthcare access in California (County Health Rankings, 2023), Imperial County struggles to draw businesses and skilled workers. Addressing healthcare shortages and improving access are critical to enhancing the region's economic competitiveness and quality of life.

Challenges - San Diego County

San Diego County's healthcare sector employs 10% of the workforce, approximately 180,000 workers, but rising demand and worker shortages challenge access to quality care, particularly for underserved communities (U.S. Bureau of Labor Statistics, 2023). Despite a high median household income of \$88,240, significant income disparities leave low-income areas like Logan Heights facing substantial healthcare access gaps.

While the county boasts 22 hospitals, rural and low-income urban areas experience shortages in specialty care and endure long wait times for services. These challenges are expected to intensify as San Diego County's population is projected to grow by 10% by 2030, further straining healthcare infrastructure and resources (State of California Department of Finance, 2024).

Opportunity

In addition to the existing assets, the Community Health sector presents a critical opportunity for the Southern Border region to address healthcare access, create high-quality jobs, and ensure disinvested communities can access and maintain those jobs. Strategic investments in healthcare infrastructure, workforce development, and innovative service delivery can drive economic diversification while meeting urgent public health needs. Integrating holistic care—including mental health services, physical activity programs, and nutrition education—will be key to addressing social determinants of health.

San Diego County offers high job creation opportunities driven by growth in telehealth, specialized care, digital health services, and infrastructure expansion. Telehealth, a key driver of healthcare innovation, uses digital and communication technologies to deliver services

such as routine check-ups, mental health therapy, follow-up consultations, and remote monitoring for chronic conditions. While particularly effective for "simple" cases that do not require physical exams or advanced diagnostics, telehealth also supports more complex cases through triage, initial assessments, and remote collaboration with larger healthcare facilities. However, its effectiveness for advanced care depends on access to medical devices and digital infrastructure, which may need to be provided in community hubs or clinics.

Imperial County offers moderate job creation potential, primarily in telehealth and community health worker (CHW) roles, with a critical need for infrastructure development. Telehealth hubs in rural areas can provide preventive care, chronic disease management, and access to specialists through virtual consultations, reducing the need for extensive travel. These hubs can also serve as a bridge for patients requiring advanced diagnostics or treatment at larger facilities. Furthermore, there is emerging potential for climate resilience initiatives, particularly in programs targeting underserved areas to mitigate the impacts of extreme heat and deteriorating air quality.

By leveraging regional assets and aligning healthcare investments with state climate and workforce strategies, the Southern Border region can build a more resilient and inclusive healthcare system. This approach promotes equitable access to care, supports workforce growth, and addresses the pressing healthcare needs of underserved communities.

Regional Assets

The Southern Border region benefits from several key assets in the Community Health sector, though there are notable disparities between Imperial and San Diego Counties. Both counties benefit from telehealth providers like Innercare, and community organizations such as Comité Cívico del Valle that support health access for disinvested communities.

Regional Assets - Imperial County

The healthcare sector in Imperial County employs approximately 6,500 workers, representing 9.3% of total employment in the county (U.S. Bureau of Labor Statistics, 2023). Education and workforce development initiatives play a critical role in addressing local health workforce shortages. Imperial Valley College offers programs in nursing and allied health, although access to advanced degrees remains limited. The college's Nursing Assistant Program emphasizes holistic training approaches, while its Behavioral Science and Social Services Programs prepare students for careers in community health by focusing on broader health determinants.

Additionally, California State University San Marcos, in partnership with Vista Community Clinic, offers a six-month Medical Assistant Training Program that combines classroom instruction with clinical experience. This program has a proven track record, with over 70% of

graduates securing employment. As demand for skilled healthcare professionals rises, this model can be adapted to meet similar needs in Imperial County.

The county's healthcare providers also contribute significantly to the region's assets. The Community Health Plan of Imperial Valley, a locally managed healthcare plan under the Medical Managed Care Program, focuses on providing comprehensive healthcare services, preventive care, and health education programs. Community health centers, such as Clinicas de Salud del Pueblo, deliver essential services to underserved populations across Imperial County, including primary care, dental services, and behavioral health support (Free Clinic Directory, 2024). These services, alongside the initiatives of the Imperial County Public Health Department, support accessible healthcare for low-income and uninsured individuals.

Nonprofits in Imperial County further enhance the region's health and social support infrastructure. As examples, Comité Cívico del Valle works to improve environmental health through education and advocacy for impactful health policies. The Imperial Valley LGBT Resource Center addresses the specific mental health and wellness needs of the LGBTQIA+ community, adopting a holistic approach to health. Additionally, the Imperial Valley Food Bank plays a crucial role in combating food insecurity by providing healthy, nutritious food to vulnerable populations, thereby addressing a key determinant of overall health and helping prevent chronic diseases.

Regional Assets - San Diego County

San Diego County's healthcare sector employs approximately 180,000 workers, accounting for 10% of total employment (US Bureau of Labor Statistics, 2023). Workforce development is supported by institutions such as University of California San Diego and Palomar College, which offer healthcare degrees and certifications. These educational opportunities are further bolstered by the San Diego Workforce Partnership, which provides specialized training programs to meet industry needs. Healthcare access in the region is strengthened by major hospitals and community providers, including ECRMC and Pioneers Memorial Healthcare District, which play critical roles in delivering healthcare.

Increasing Economic Diversification and Resilience

The Community Health sector offers a vital opportunity to diversify the economies of Imperial and San Diego counties, reducing reliance on sectors susceptible to external shocks. By investing in healthcare infrastructure, addressing underlying social determinants of health, and promoting workforce development and telehealth expansion, the region can create stable, high-quality jobs and build long-term economic resilience.

In addition, improving the healthcare system and increasing access to community health resources can enhance the region's competitiveness in attracting private investment. A

healthier workforce also leads to increased productivity, further strengthening the region's economic appeal and resilience.

Alignment with Job Quality and Access, Equity, and Climate

Job Quality and Access

The Community Health sector enhances job quality and access across Imperial and San Diego Counties. As services expand, the sector can create stable, family-sustaining jobs offering healthcare benefits, career advancement, and consistent scheduling.

In San Diego County, healthcare workers earn a median annual wage of \$68,000 (U.S. Bureau of Labor Statistics, 2023), while in Imperial County, the median is approximately \$52,000 (California Employment Development Department, 2023). Both figures fall below the national median for healthcare practitioners and technical occupations, which was \$80,820 (U.S. Bureau of Labor Statistics, 2023). By expanding training programs and developing specialized roles, both counties can enhance the local healthcare workforce and potentially increase wages. That said, low wages result from a combination of factors, including limited reimbursement rates (e.g., Medicare/Medicaid), healthcare providers' financial constraints, regional cost-of-living disparities, and labor market dynamics. Addressing these factors alongside workforce development is critical to effectively improving compensation and job quality (Bodenheimer and Mason, 2016).

Outreach to disinvested communities and partnerships with educational institutions will be key strategies in facilitating skill development. Bilingual certifications and telehealth roles are particularly important facets of ensuring equitable access to training programs.

Stable and sustainable healthcare roles (including medical assistants, telehealth coordinators, and CHWs) can provide an additional career pathway for workers experiencing economic challenges due to factors like automation, market shifts, or declining demand. By matching displaced workers with the growing labor shortages in healthcare, the region can create a more resilient workforce while meeting the region's healthcare needs.

Including immigrants, refugees, and people with disabilities in the sector's employment strategies is essential to addressing workforce shortages and fostering a diverse and innovative workforce. Immigrants and refugees bring multilingual skills and cultural competencies particularly suited for roles like patient advocacy and community health work, where bridging language and cultural gaps is critical to improving healthcare outcomes. They may also have existing health backgrounds and could be well-positioned for patient care, telehealth services, and case management roles, provided credential recognition and training support are in place to facilitate their integration. Similarly, people with disabilities can offer valuable insights and support based on their lived experiences to others navigating similar challenges. Accessible

and tailored training programs are essential to ensure people from a variety of backgrounds can fully participate in community health jobs and programming.

Equity

In Imperial County, where significant barriers exist, deploying CHWs—frontline public health professionals who are trusted members of the communities they serve—can support healthcare access. CHWs do not deliver medical care; instead, they perform key functions such as facilitating access to health services, providing culturally relevant health education, assisting with care coordination, advocating for individual and community health needs, and addressing social determinants of health like housing and nutrition (APHA, 2023). These efforts, combined with enhanced telehealth access, aim to improve health outcomes in underserved areas.

In San Diego, expanding community-based care is critical to increasing access to quality healthcare for low-income neighborhoods. Supporting strategies aim to address the significant financial and systemic barriers many individuals (especially those from disinvested communities) face in accessing education and careers in healthcare, including through scholarships, financial aid, and training programs. Partnerships with local colleges and universities can bolster these efforts, creating a robust pipeline of health workers who reflect and understand the communities they serve.

Climate

The Community Health sector can mitigate environmental impacts and address public health risks from climate change by adopting sustainable practices. Measures such as using energy-efficient technologies in healthcare facilities and expanding telehealth services can reduce emissions, particularly in rural areas, while improving access to care and resilience during extreme weather events.

Establishing climate-resilient cooling centers and deploying air quality monitoring systems in high-pollution areas can further protect vulnerable populations, especially in disinvested communities disproportionately affected by environmental and health challenges. Prioritizing underserved areas for investments in infrastructure, such as solar-powered clinics and mobile healthcare units, supports equitable access to resources. Workforce development initiatives that train residents, particularly from disinvested groups, in clean energy and healthcare jobs can also enhance economic resilience while improving community well-being.

By addressing the intertwined challenges of climate change, public health, and environmental inequities, these strategies align with state policies like California's Climate Adaptation Strategy. They aim to support disadvantaged communities, promote environmental

stewardship, and improve health outcomes, ensuring the sector is prepared for a changing climate while advancing regional health equity.

Workforce Development

Developing a skilled and diverse healthcare workforce is central to the success of the Community Health sector strategy, especially as the region confronts healthcare shortages and the increasing public health risks posed by climate change. Aligning workforce development initiatives with local needs will ensure accessible healthcare services while fostering inclusivity in job opportunities, particularly for residents in disinvested communities. The expansion of healthcare services in Imperial and San Diego Counties necessitates targeted training programs to equip residents with skills for various roles, including CHWs and specialized positions in mental health, telehealth, and public health response. With a Location Quotient (LQ) of 0.50, Imperial County employs about 50% fewer healthcare professionals per capita than the state average, presenting a clear opportunity to upskill the local workforce and meet unmet healthcare demands.

Partnerships with local educational institutions such as Imperial Valley College, University of California San Diego, and San Diego State University will be essential in closing this gap. These institutions can provide bilingual training programs tailored to rural and immigrant populations, ensuring that language and cultural barriers do not hinder access to healthcare careers.

However, access to training programs is often limited or programs are poorly sequenced, making it difficult for students to transition smoothly into healthcare careers. Addressing these gaps by improving the structure and availability of training programs is essential to aligning career pathways with student interest and regional workforce needs.

Special emphasis should be placed on telehealth training, enabling providers to serve remote communities that face physical access barriers. By aligning with state workforce initiatives like the California Workforce Development Board's High Road Training Partnership, the strategy aims to meet current healthcare needs while anticipating future demands, particularly as climate change exacerbates public health challenges.

Ensuring equitable access to healthcare jobs for residents in disinvested communities is a major focus of the workforce development strategy. In Imperial County, where unemployment rates in some areas reach 16%, and in low-income neighborhoods of San Diego County, these healthcare jobs will offer critical pathways to economic mobility. Targeted recruitment efforts will prioritize historically excluded populations, including Latino/a, Black, and immigrant communities. Flexible training programs such as evening and weekend courses can remove barriers to entry for individuals facing economic or time constraints. Additionally, developing

telehealth roles can address local employment needs and healthcare access gaps in rural communities.

Retaining healthcare talent in the region is another key goal, as many workers leave for better-paying opportunities in larger urban centers. The strategy focuses on addressing wage disparity and creating career advancement pathways that enable workers to pursue further education and specialize in higher-paying roles. Recognizing the critical contributions of CHWs through fair salaries, comprehensive benefits, and initiatives such as public acknowledgment programs and professional development opportunities will be essential to improving morale and strengthening workforce retention.

Programs like loan forgiveness for healthcare professionals who commit to serving underserved areas, along with ongoing professional development, can help retain talent and build a more resilient workforce. Furthermore, developing affordable housing presents significant opportunities for job advancement in the Southern Border region. The construction and management of supportive housing requires a skilled workforce, particularly in rural areas like Imperial County, where housing insecurity is prevalent. Research indicates that affordable housing can improve health outcomes by providing stable living conditions, reducing stress, and increasing access to preventive care. By training residents in construction, healthcare support roles, and housing management, the region can address high unemployment rates while improving health outcomes for low-income and disinvested communities.

The workforce strategy also prepares for future public health challenges, particularly those related to climate change. As the demand for healthcare workers rises in response to climate-related health issues—such as heat-related illnesses and respiratory conditions caused by poor air quality—the region will need a workforce equipped to manage these challenges. Training programs should emphasize emergency response, climate resilience, and public health interventions, ensuring healthcare professionals can address the growing needs of the region’s most vulnerable populations.

Alignment with State Strategies

The Community Health sector strategy is designed to align with California’s key state initiatives, ensuring that healthcare expansion not only supports public health but also enhances climate resilience and fosters sustainable economic growth. By strengthening healthcare infrastructure, the strategy addresses the increasing health risks posed by climate change, particularly through investments in resilience centers, cooling centers and telehealth services, such as video consultations, remote patient monitoring, mobile health apps, and digital communication between patients and providers. These initiatives are crucial in areas like Imperial County, where extreme temperatures can exceed 115 degrees Fahrenheit,

significantly increasing the risk of heat-related illnesses (California Natural Resources Agency, 2023).

Additionally, the integration of energy-efficient technologies and solar energy within the healthcare sector aligns with the California Climate Scoping Plan's goal of reducing greenhouse gas emissions by 40% by 2030 (California Air Resources Board, 2023). Expanding telehealth services further contributes to this objective by minimizing travel needs in rural areas such as Calipatria. In addressing water scarcity, particularly in Imperial County, the strategy also aligns with the Sustainable Groundwater Management Act (SGMA) by promoting water conservation technologies in healthcare facilities, thus reducing water usage in a region heavily impacted by agricultural and urban demands (California Department of Water Resources, 2023). Lastly, the sector supports California's 30x30 Initiative, which aims to conserve 30% of the state's land and waters by 2030. By integrating environmental health education within community clinics in areas like Calexico, the healthcare expansion directly contributes to conservation goals and promotes environmental justice (California Natural Resources Agency, 2023).

Sub-regional Spotlights

Imperial County Strategy Implementation

To effectively implement the Community Health strategy in Imperial County, essential partnerships and resources are required. Collaboration between local healthcare providers, educational institutions, and community organizations will be vital for managing and governing the strategy.

- **Necessary Partnerships:** Healthcare providers can offer medical expertise and integrated care. Educational institutions like Imperial Valley College can facilitate training programs tailored to local needs, linking students to in-person and online classes.
- **Funding Sources:** Potential funding sources may include state and federal grants, as well as partnerships with local nonprofits focused on healthcare access.
- **Mitigation Plans:** Addressing potential risks, such as workforce turnover or funding shortfalls, will involve contingency plans ensuring the strategy remains adaptable to changing circumstances.

San Diego Strategy Implementation

For San Diego County, successful strategy implementation will similarly rely on robust partnerships and resource allocation.

- **Collaborative Partnerships:** Local hospitals, community organizations, and academic institutions can work together to expand healthcare access and training programs.
- **Funding and Budget:** Anticipated funding sources may include state health initiatives and private partnerships aimed at enhancing healthcare delivery.
- **Mitigation Plans:** To manage risks, regular evaluations and community feedback mechanisms will ensure that the strategy remains aligned with local health needs and priorities.

Supporting Strategies

1. Strategy 1: Address social determinants of health and environmental risks (e.g., housing, education, economic stability, financial education, access to nutritious food, and air and water quality)

- Action step 1:** Implement integrated care models that link healthcare services with social services, such as housing assistance, programs focused on nutrition, physical activity and mental wellness, and employment support, to provide comprehensive support for residents.
- Action Step 2:** Partner with local organizations to create programs that improve economic stability through job training and financial literacy workshops, addressing social determinants of health by empowering individuals with the skills and resources needed for financial independence and access to healthier living conditions.
- Action Step 3:** Advocate for policies that address housing stability alongside other social determinants such as education, economic stability, access to nutritious food, and financial literacy, all of which directly influence health outcomes.
- Action step 4:** Enhance air and water monitoring capabilities by engaging in community science projects that involve residents in monitoring, reporting, and educating the public. These projects should focus on equipping residents, particularly youth and vulnerable individuals, with knowledge and tools to protect themselves during poor air quality days and other environmental hazards.

2. Strategy 2: Enhance workforce development initiatives

- Action step 1:** Incentivize and preference funding for projects that prioritize a defined (and agreed upon) percentage of jobs for local workers, especially those from disinvested communities. This promotes that the jobs they create offer long-term stability, fair wages, and opportunities for advancement beyond entry-

level or temporary roles, including through collaborations with employers to create pathways to supervisory and technical positions.

- b. Action step 2:** Develop tailored training programs that address emerging healthcare roles, such as telehealth coordinators and mental health specialists.
- c. Action step 3:** Offer scholarships and financial aid encouraging students from disinvested communities to pursue healthcare careers.
- d. Action step 4:** Establish mentorship connections and opportunities between experienced healthcare professionals and trainees to provide guidance and support.
- e. Action step 5:** Ensure that healthcare workers have safe, supportive working conditions, especially during public health emergencies.
- f. Action step 6:** Develop programs and incentive structures to train and retain healthcare workers in the region.
- g. Action step 7:** Employ and deploy trained health navigators to guide individuals through the healthcare system, helping them access services, understand insurance options, and overcome barriers like language or transportation, ensuring timely and effective care.

3. Strategy 3: Develop Community Health Worker (CHW) programs

- a. Action step 1:** Launch campaigns to recruit residents as CHWs, providing culturally relevant training.
- b. Action step 2:** Establish certification programs in partnership with local educational institutions to ensure standardized training.
- c. Action step 3:** Create a job placement program connecting trained CHWs with local healthcare providers and community organizations.
- d. Action step 4:** Expand transportation options to ensure all community members, including individuals with disabilities, can access healthcare providers.
- e. Action step 5:** Develop programs that offer preventative care and early intervention through CHWs to reduce long-term healthcare costs, focusing on culturally sensitive and accessible approaches.

4. Strategy 4: Expand telehealth services to include comprehensive remote healthcare options

- a. Action step 1:** Secure funding/investment to develop and enhance telehealth platforms, ensuring reliable internet access in underserved areas.
- b. Action step 2:** Create training programs for healthcare professionals focused on telehealth best practices and effective technology usage.

- c. Action step 3:** Launch outreach initiatives to educate residents about telehealth options, emphasizing benefits for disinvested communities.
- d. Action step 4:** Expand telehealth options to reach remote and underserved areas, paired with investments in digital infrastructure to improve internet access and digital literacy, supporting telehealth use. Options include virtual primary care visits, remote mental health counseling, chronic disease management programs, and remote patient monitoring devices that track vital signs such as blood pressure and glucose levels.



Water: Ensuring sustainable water management to protect resources, support agriculture, and create jobs in the water sector



Description

The Water sector focuses on ensuring the region maintains a sustainable water supply to support its population and industries, particularly the agricultural sector. By diversifying water sources and bolstering conservation efforts, the region can ensure resilience in the face of droughts while creating jobs in the water sector itself.



Challenges

Climate-induced drought and changing water rights on the Colorado river threaten the region's water supply.



Opportunity

Invest in green infrastructure, recycling, and reuse, and technology solutions to improve conservation.



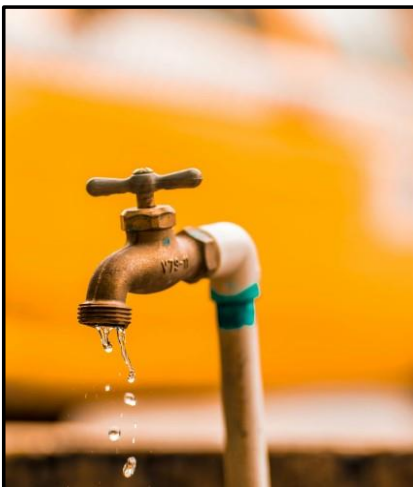
Regional Assets

- **IC:** Investments in localized water infrastructure and recycling initiatives, key partners (e.g., Imperial Irrigation District), and natural assets (e.g., Colorado River, Salton Sea)
- **SDC:** Desalination facilities (e.g., Carlsbad Plant), universities and facilities (e.g., UCSD, SDSU), smart water mgmt. providers



Job quality & access, equity, and climate

- **Partner** with local organizations to strengthen community-level engagement in conservation efforts and awareness of careers
- **Provide** tiered certifications and learning opportunities for workers from disinvested communities to enter and grow in the water sector, including hands-on learning and integrating local knowledge
- **Prioritize** nature-based solutions to combat the urban heat island effect, manage agricultural runoff, and increase water resilience



Supporting Strategies

1. **Expand workforce development training:** design and deliver tailored training and certification programs; provide apprenticeships
2. **Invest in green infrastructure:** build bioswales, rain gardens, and recharge basins
3. **Expand water recycling and reuse:** expand greywater reuse and on-site recycling systems
4. **Advance smart water management systems:** invest in technology solutions and expand research in innovative water resource management
5. **Increase desalination capacity and research:** pilot small-scale plants and increase research

Photo by Luis Quintero: <https://www.pexels.com/photo/photo-of-gray-faucet-2339722/>

Water

Definition

Water, specifically water resource management, refers to water source diversification, conservation, recycling, and green infrastructure. This includes the planning, investment, monitoring, and innovation required to ensure sustainable water resources, infrastructure and management practices. Equitable access to water is critical for many of the Southern Border region's tradeable industries, with a growing population, a significant agricultural sector, and increasingly pressing challenges related to climate-induced drought.

Under the North American Industry Classification System (NAICS), this industry aligns with code 2213 ("Water, Sewage and Other Systems"), with specific subcodes including codes 221310 for water supply and irrigation systems and 221320 for sewage treatment facilities. While these codes serve as a practical reference and were used to compile industry information (as available data is often categorized under it), they may not fully capture all nuances or variations within the industry.

Rationale

Focusing on water as a locally serving industry not only aims to ensure that the water needs of the region are adequately met, but also that high-quality, low-barrier jobs be created within the water resource management sector itself. Strategies like diversifying water sources through processes such as stormwater capture and desalination, as well as improving water conservation through processes like recycling and reuse, have the potential to create high-quality jobs while promoting sustainable growth in the region.

Considering the vital role that the agricultural sector plays in the region's economy and the high water needs associated with agricultural production, many of the strategies identified in this section are closely related to those highlighted within the agriculture section.

Challenges

With the region spanning coastal and desert landscapes, its two counties—Imperial and San Diego—face distinct water management needs. San Diego County relies heavily on imported water, which makes it vulnerable to supply instability and high costs, while Imperial County's agriculture-intensive economy can drive local water demand beyond regional supplies.

Climate change has already intensified water scarcity in California. These conditions strain the region's imported water supplies and groundwater resources. Disparities in water infrastructure investment also place disinvested and rural communities at further risk, as existing systems limit access to clean, affordable water.

Challenges - Imperial County:

Imperial County's agriculture-driven economy relies heavily on water for crop irrigation, making it especially vulnerable to droughts and water restrictions. The county holds the largest allocation of Colorado River water in the state, but potential renegotiations of water rights due to ongoing drought conditions threaten this allocation, raising significant concerns about long-term water security for both agriculture and residential needs.

Agricultural practices in the region also produce substantial runoff that flows into the Salton Sea and the New River, increasing salinity and contributing to environmental degradation. Poor water quality in these water bodies poses serious health risks to nearby communities and creates hazardous conditions for local ecosystems. Coordinated strategies are urgently needed to manage agricultural runoff, treat water pollution, and mitigate the environmental and public health impacts associated with these challenges.

Challenges - San Diego County:

San Diego County depends on imported water for over 80% of its supply, much of it sourced from the Imperial Irrigation District (IID) in Imperial County (San Diego County Water Authority, 2024). This reliance makes the region highly vulnerable to supply reductions, rising costs, and regulatory changes that threaten both affordability and stability.

Low-income and rural areas within the county face additional challenges due to aging and underfunded water infrastructure. Delayed maintenance and outdated systems result in inefficiencies, water loss, and limited reliability, particularly during droughts.

The increasing frequency and severity of droughts driven by climate change further strain San Diego County's water resources. Reduced reliability of both local and imported water supplies heightens the risk of shortages, necessitating diversified and sustainable water management strategies to ensure long-term stability (San Diego Coastkeeper, 2024).

Opportunity

It is crucial to address the need for water resilience in Imperial and San Diego Counties, where natural scarcity and climate pressures threaten supply stability. The strategies presented in this section focus on diversifying supply sources, enhancing recycling and reuse, investing in green infrastructure, expanding desalination, and building a skilled workforce. Each approach aligns with state priorities while ensuring equitable distribution, access and consumption of water, not only for agricultural use but across communities.

Diversifying water sources is a key priority, as San Diego remains reliant on imported water and Imperial County on its allocation from the Colorado river. Further expansion of local sources, including recycled water, desalination, and groundwater, is therefore key to building resilience. These efforts respond directly to local concerns about water dependency and align with

California's goals for supply stability. Enhanced green infrastructure and implementing ecological best practices can strengthen these efforts by improving stormwater management, particularly in San Diego County where rainfall is higher, combatting the urban heat island effect, and supporting aquifer recharge. Prioritizing these efforts will not only increase water security in the region, but can also create high-quality, low-barrier jobs across the value chain, including in construction/installation, maintenance and operations, monitoring, landscaping, conservation, environmental technology and beyond.

Recycling and reuse programs have the ability reduce strain on freshwater sources, particularly critical for agriculture and industry. Similarly, the expansion of desalination capacity, as demonstrated by the Claude "Bud" Lewis Carlsbad Desalination Plant, offers a drought-resistant water source that can be further scaled to serve regional needs. Considering the high cost and energy needs associated with desalination, however, additional research and development will be required to ensure that the scaling of desalination solutions is practical in comparison with other alternatives. In doing so, a regional perspective should be adopted that considers the direct and indirect costs associated with importing water to San Diego County, including impacts on Imperial County's water supply.

In addition to supporting water resilience and creating local jobs, developing desalination expertise may also be tradeable, creating opportunities to share knowledge and best practices with other communities in California and beyond.

Innovation in digital water management solutions also presents an opportunity to improve efficiency and create additional jobs. Technologies such as smart meters, IoT sensors, and data analytics platforms can enable predictive maintenance and real-time monitoring, while creating jobs in these areas.

To support these initiatives, comprehensive workforce development programs are needed. Specialized training, certification, and apprenticeship programs, developed in partnership with local educational institutions and regional agencies such as the Imperial Irrigation District (IID), should be prioritized to ensure programs are tailored to industry needs and create accessible pathways into stable, well-paying jobs.

The Imperial County Tribal Communities Study Report also highlights key water issues identified by Tribal members. Improvements to water quality, cost, and availability were highlighted as key priorities, not only for Elders, but for the IC Tribal community members who are experiencing health impacts from diseases such as diabetes and those suffering from dehydration. Regular water quality testing for pesticides and other impacts from agriculture, along with greater filtration of water entering homes throughout IC Tribal community dwelling and settlement areas, were raised as key opportunity areas. For additional details, please refer to Chapter 7, "Imperial County Tribal Communities Study Report."

Regional Assets

The Southern Border region benefits from a range of water resources management assets across Imperial and San Diego Counties. These resources—spanning advanced research facilities, water-focused community organizations, specialized water infrastructure, and local expertise—provide a strong foundation for developing a resilient water sector. Leveraging these assets allows the region to address water scarcity, improve conservation efforts, and create high-quality jobs.

Regional Assets - Imperial County:

Imperial County has specialized agricultural expertise and a skilled workforce, particularly in water-efficient practices, irrigation management, and soil conservation. Supported by programs at Imperial Valley College, workers are equipped to implement advanced irrigation technologies, water recycling methods, and conservation strategies that maintain agricultural productivity while minimizing water waste.

The county has also made significant investments in localized water infrastructure and recycling initiatives. Projects such as small-scale desalination and greywater reuse pilots offer scalable solutions to address water scarcity in both agricultural and community contexts. These efforts are complemented by the county's extensive irrigation systems, which are managed by the Imperial Irrigation District (IID) and play a critical role in supporting its agricultural base.

Natural resources, including the Colorado River, an extensive canal system, and the Salton Sea, are central to Imperial County's environmental and agricultural landscape. The Salton Sea serves as a vital ecological and climate resilience asset. Restoration efforts focus on managing agricultural runoff, improving water quality, and addressing environmental health risks associated with salinity and pollution, ensuring the long-term sustainability of this critical resource.

Regional Assets - San Diego County:

San Diego County has a skilled workforce with expertise in water resource management, civil engineering, and environmental sciences. Supported by leading educational institutions such as University of California San Diego, San Diego State University, Palomar College, and Cuyamaca College, this workforce is equipped to develop advanced water management systems, predictive analytics, and Internet of Things (IoT)-based monitoring solutions. These capabilities enable more efficient and data-driven water conservation practices across the region.

The county's water infrastructure is equally advanced, with state-of-the-art facilities like the Carlsbad Desalination Plant, the largest seawater desalination facility in the Western

Hemisphere (San Diego County Water Authority, 2024). In addition to providing purified water, the plant serves as a center for research and innovation in water technologies, enhancing the region's ability to reduce its reliance on imported water. Investments in water recycling and reclamation systems further support sustainable practices by repurposing treated wastewater for irrigation, industrial use, and other non-potable applications. San Diego has also implemented smart water grid technologies, including Advanced Metering Infrastructure (AMI), which enables real-time water use monitoring, leak detection, and data-driven conservation efforts (Inside San Diego, 2023).

San Diego County's natural water resources further strengthen its resilience. The region benefits from its proximity to the Pacific Ocean and a network of reservoirs such as the San Vicente Reservoir and Lake Hodges, as well as rivers like the San Diego River. These surface water resources offer opportunities to enhance the county's water resilience and reduce its dependence on imported water supplies.

Increasing Economic Diversification and Resilience

The water sector's development can drive economic diversification by creating high-quality, accessible jobs across a range of skill levels. Investments in water recycling facilities, ecological infrastructure, and conservation technology can provide additional employment opportunities in communities where economic diversification is needed. This diversification can provide pathways to well-paying, sustainable jobs for residents in disinvested communities (beyond seasonal or low-wage jobs), allowing workers to pursue careers with potential for advancement (e.g., in installation, operations and maintenance, or landscaping). The California Climate Jobs Plan indicates a median of \$85,000 annual salary for water systems work.

Reliable water infrastructure is fundamental for supporting the agricultural economy and other tradeable sectors. By stabilizing water resources, the region can reduce exposure to climate risks and secure its economic base. This resilience-building approach is critical to reducing economic vulnerability and supporting sustainable growth across the Southern Border region.

Alignment with Job Quality and Access, Equity, and Climate

Job Quality and Access

The strategy prioritizes robust training and workforce development programs, equipping both entry-level workers and those seeking career advancement with the skills necessary to thrive in water-related roles. These proposed programs will aim to be developed in collaboration with community colleges, trade schools, and industry associations, providing training in areas such as water treatment, infrastructure maintenance, green infrastructure, and smart water

technologies, such that they lead to family-sustaining jobs with competitive wages and benefits.

Career advancement is also critical to ensuring the water sector can create family-sustaining jobs, including tiered certification levels and continuous learning opportunities that enable workers to move up the career ladder. The strategy also aims to ensure inclusive access, actively recruiting individuals from disinvested communities. Culturally relevant and bilingual training options can also help reduce barriers for low-income and minority communities, ensuring that underrepresented groups can access these job pathways.

Furthermore, the strategy will focus on advocating for workers to have a collective voice in negotiations over wages, benefits, and working conditions, promoting fair treatment and workplace protections. The strategy will also look to create apprenticeship and internship programs that provide hands-on, paid training in essential water sector roles, from engineering and environmental management to operations and maintenance.

Equity

The water sector strategy prioritizes engaging with and serving disinvested communities in both Imperial and San Diego Counties. By partnering with trusted community representatives and organizations, outreach campaigns, community workshops and training programs can ensure that all residents, regardless of linguistic or cultural background, have access to information and training related to water programs, services, and careers within the sector.

Practical demonstrations and hands-on activities should be a core part of these outreach initiatives, allowing residents to learn by doing, with local knowledge and daily realities being integrated into the content. These campaigns and workshops can draw on recommendations from workforce studies, such as San Diego County's "Putting California on the High Road: A Jobs and Climate Action Plan for 2030," which includes strategies to support at-risk workers (California Workforce Development Board, 2020).

Youth engagement is another vital component of the equity strategy, aimed at empowering young people in disinvested communities to take active roles in water conservation and environmental stewardship. Through partnerships with local schools, the strategy looks to integrate water-focused education into school curricula and provide extracurricular opportunities that engage students in hands-on conservation projects.

Climate

The water sector is central to building climate resilience in the Southern Border region, addressing both immediate water scarcity challenges and the need for sustainable long-term resource management. By implementing water conservation and efficiency programs, the strategy can reduce overall water demand while strengthening supply sources. Initiatives such

as water-saving technologies, regular water audits, and leak detection help minimize the extraction of natural water sources, protecting the ecological balance in rivers, lakes, and reservoirs vital to regional biodiversity. These conservation efforts decrease stress on limited resources and bolster the region's capacity to adapt to changing climate conditions.

Expanding water recycling and reuse programs further enhances resilience by reducing reliance on the Colorado River and imported water. Investment in advanced water treatment facilities that produce recycled water for non-potable and, where possible, potable uses will further increase the sustainability of the water supply. For instance, expanding recycled water distribution networks can allow reclaimed water to support irrigation, industrial applications, and landscaping needs.

Green infrastructure and nature-based solutions complement these efforts by managing stormwater, promoting groundwater recharge, and combatting the urban heat island effect amid increased construction. For example, permeable pavements, bioswales, and urban tree planting improve stormwater absorption while lowering temperatures in dense urban areas. Additionally, the conservation of wetlands and riparian areas strengthen resilience against flooding and sea-level rise, providing critical habitats and improving water quality through natural filtration.

Workforce Development

The water sector strategy prioritizes comprehensive workforce development programs that align the skills of local workers with the demands of the water industry. Through partnerships with local community colleges, trade schools, industry associations (e.g., California Water Environment Association, Imperial County Farm Bureau), and water agencies (e.g., San Diego County Water Authority, Imperial Irrigation District), the strategy aims to bridge the skills gap and address recruitment challenges by prioritizing the accessibility of training and certification programs that offer specialized skills in areas such as water treatment, green infrastructure, and advanced water technology.

It is important to ensure that immigrants, non-residents, refugees, disabled individuals, members of Tribal communities, and individuals across ages can access the training opportunities to prepare them for the jobs being created and are not discriminated against in accessing the jobs themselves.

Practical, hands-on experience should be a central element of the workforce development initiatives, with a particular focus on apprenticeship and internship programs. These programs can enable workers to earn while they learn, gaining practical skills and providing a clear path to permanent, full-time employment within the sector.

Alignment with State Strategies

The water sector strategy aligns closely with California’s Water Action Plan by advancing water conservation, supply diversification, and ecosystem restoration, as well as supporting investments in infrastructure for recycled water, desalination, and stormwater capture. These investments bolster regional water security while creating jobs in conservation, infrastructure development, and environmental restoration, fulfilling key priorities of California’s Water Action Plan.

The water sector strategy also aligns with California’s Sustainable Groundwater Management Act (SGMA) through promoting groundwater recharge projects to stabilize basin levels, and expands data-driven monitoring systems for real-time groundwater tracking.

Supporting Strategies

1. Strategy 1: Expand workforce development and provide specialized training in water resource management

- a. Action step 1:** Partner with colleges, career and technical education (CTE) high school programs, community science programs and trade schools to provide community-based training in water conservation, irrigation, landscaping, water quality testing and management, and rainwater harvesting, focusing on disinvested communities.
- b. Action step 2:** Create certification programs in water resource management, conservation and smart water systems, leading to roles in utilities, water agencies, and environmental organizations.
- c. Action step 3:** Offer paid “earn and learn” opportunities, including apprenticeships with local agencies, providing structured hands-on learning and prioritizing job access for residents in disinvested areas.

2. Strategy 2: Invest in green infrastructure and ecological best practices

- a. Action step 1:** Develop green infrastructure projects like bioswales, rain gardens, and permeable pavements to combat the urban heat island effect, enhance stormwater capture, and create construction and maintenance jobs. Prioritize projects serving disinvested communities at the highest risk of stormwater impacts.
- b. Action step 2:** Build reservoirs and recharge basins for groundwater storage, creating roles in construction and site operations while supporting local agriculture.
- c. Action step 3:** Implement stormwater harvesting and reuse programs on public and private properties, creating jobs in installation and maintenance, particularly in San Diego County.

3. Strategy 3: Expand water recycling and reuse programs for agricultural and industrial applications

- a. Action step 1:** Build water recycling facilities for greywater and wastewater reuse, creating operational and maintenance roles accessible to disinvested communities.
- b. Action step 2:** Support on-site recycling systems for businesses and institutions, incentivizing implementing greywater systems and creating installation and maintenance jobs.
- c. Action step 3:** Connect recycled water to agriculture by developing pipelines that link facilities to farm operations, creating installation and monitoring jobs.
- d. Action step 4:** Launch public outreach programs for water quality and conservation, creating roles in outreach, monitoring and reporting, program coordination, and education.

4. Strategy 4: Advance smart water management systems

- a. Action step 1:** Invest in water technology systems, including IoT-based solutions for public infrastructure and private use (e.g., smart meters, automated monitoring devices), creating roles in installation, maintenance, and monitoring.
- b. Action step 2:** Partner with universities and hubs for research in smart water solutions, creating low-barrier roles in data analysis, research support, and lab tech.

5. Strategy 5: Increase desalination capacity and research

- a. Action step 1:** Pilot small-scale, modular desalination plants to serve rural and high-need areas, creating jobs in plant operations, maintenance, support, and quality testing.
- b. Action step 2:** Invest in R&D to make desalination processes more energy-efficient and cost-effective, creating low-barrier roles such as lab assistants, sample collectors, and equipment managers.



Training and Workforce Development: Expanding career pathways equitably to support disinvested communities in entering, advancing, and thriving in the labor market

Description

The Training & Workforce Development sector focuses on mobilizing the resources communities need to enter, advance and thrive in the labor market. Expanding training opportunities and career support services can strengthen the region's labor force and create jobs within the Training & Workforce Development Sector itself.



Challenges

Limited local training options in rural areas, coupled with rising cost of living, make career progression challenging.



Opportunity

Strengthen career pathways across all ages and bridge resource disparities to create equitable economic growth.



Regional Assets

- State and national workforce development initiatives (e.g., K-16 Collective, Small Business Administration)
- Workforce development boards
- Regional Occupational Programs (ROPs)



Job quality & access, equity, and climate

- **Co-create and co-deliver** workforce development initiatives in partnership with community organizations, focusing on job access for disinvested communities
- **Advocate** for equitable hiring practices, fair wages, and supportive workplace policies, including mental health, flexible arrangements, and caregiver support
- **Ensure** training opportunities are accessible to individuals across ages and ability levels



Supporting strategies

1. **Strengthen K-12 career pathways and foundational skill development:** increase career education programs, prioritize digital literacy, and create work-based learning opportunities
2. **Enhance access to centralized workforce resources and support services:** expand mobile workforce units, create regional workforce information portal, and appoint industry investment coordinators
3. **Invest in scholarships, apprenticeships, upskilling, and lifelong learning initiatives:** expand "earning while learning" opportunities, create an upskilling fund and support reskilling and adult education



Photo by Mikhail Nilov: <https://www.pexels.com/photo/two-engineers-at-work-9242816/>

Training and Workforce Development

Definition

Workforce development refers to the strategic creation and implementation of programs, resources, and support systems that prepare individuals to thrive in the labor market. This includes skills building, training, and the expansion of career pathways. It encompasses initiatives aimed at building a responsive, skilled workforce that meets the needs of both current and emerging industries, while creating accessible, high-quality jobs within the workforce development sector itself, fostering long-term economic resilience and inclusion.

Under the North American Industry Classification System (NAICS), this industry aligns with code 61 (“Educational Services”), with specific subcodes including code 6117 for educational support services. While these codes serve as a practical reference and were used to compile industry information (as available data is often categorized under it), they may not fully capture all nuances or variations within the industry.

Rationale

The Training and Workforce Development sector is critical to building a robust workforce in Imperial and San Diego Counties, directly creating jobs within the sector and supporting the growth of tradeable and locally serving industries. By strengthening career pathways, creating centralized workforce resources, and investing in lifelong learning, this strategy promotes sustainable employment and economic mobility, especially in disinvested communities.

This section serves a dual purpose, highlighting workforce development strategies that can support the various industries outlined in this report, as well as specific strategies to create jobs within the workforce development sector itself.

Challenges

The Southern Border region faces multiple workforce challenges, including unemployment in rural areas and barriers to training access for underrepresented populations. Imperial County’s geography and relatively limited local training options hinder access to career opportunities, while high transportation costs create additional barriers for residents seeking education or employment. Rising housing costs and high costs of living also impact workforce retention and quality of life. The digital divide in rural and low-income areas compounds these challenges, limiting access to online training and job search resources.

Furthermore, proficiency in English has become a prerequisite for many high-quality jobs, limiting access for non-native speakers. One out of every three workers in California is an immigrant, and nearly half of all children in California have at least one immigrant parent (California Immigrant Policy Center, 2017). In San Diego County, one quarter of all residents

are considered New Americans—immigrants, refugees, and asylum seekers—and many struggle to find work because of limited English proficiency, representing an untapped talent pool of workers who have language and cultural assets to serve their respective communities (San Diego Workforce Partnership, 2023).

Undocumented immigrant workers comprise one in sixteen of California’s workforce (California Immigrant Policy Center, 2022) who generally lack access to adult education programs, job referrals, assessments, career counseling, on-the-job training, and other tools with the potential to improve job quality and expand access to good jobs. They are often excluded due to work authorization requirements, highlighting the need for creating workforce development initiatives that are inclusive of undocumented immigrants while supporting work models that allow workers without work authorization to gain good jobs.

Opportunity

Training and Workforce Development presents substantial opportunities to directly create jobs and drive economic growth across Imperial and San Diego Counties, while addressing structural, institutional, and cultural barriers limiting access to high-quality jobs, particularly in disinvested communities. This strategy envisions a region where all residents are equipped and empowered to access high-quality jobs, regardless of age, experience, or identity.

Strengthening career pathways for K-12 students provides a critical opportunity to introduce young people to a range of high-demand fields early on, creating a pipeline of skilled talent for sectors that are vital to regional economic growth. In addition, centralized workforce resources and mobile support services can help bridge disparities in access to resources, especially for rural and underserved populations. Centralized resources, such as a regional workforce information portal that consolidates relevant resources in an easy-to-access format, combined with partnerships with local organizations, can provide a foundation for sustained community engagement.

Lifelong learning and upskilling initiatives represent another key opportunity. Supporting upskilling and expanding adult education programs can enable workers to gain new skills and credentials that align with evolving industry standards, helping them remain competitive in a dynamic job market. Apprenticeships and “earning while learning” opportunities are particularly critical, as financial barriers are often the most pressing factor preventing members of disinvested communities from accessing learning and upskilling opportunities. Apprenticeships should ensure alignment with the State of California’s Division of Apprenticeship Standards (DAS), which has established and maintains robust standards for state-registered apprenticeship programs, increasing the opportunity for workers to obtain quality workforce training in any given trade/industry sector. Adherence to the DAS and its

registered apprenticeships also decreases the chance that more predatory or lower quality workforce development providers are able to undermine the goals of these efforts.

Focusing on partnerships with local educational institutions and businesses to create tailored training and certification programs in line with prioritized industry qualifications can help ensure that the training opportunities provided are both relevant and transferable.

It is critical for training opportunities to focus on transferable skills that equip participants to take on a variety of jobs across a range of employers, ensuring they are not reliant on specific companies for their livelihood and career progression.

To support these initiatives, the number of approved instructors and trainers will need to increase. The supporting strategies included in this section offer specific steps to create these additional roles and ensure education and workforce development programs are adequate in their quality and coverage of their offerings, accessible to all residents, and affordable for residents to pursue and complete.

Regional Assets

The Southern Border region benefits from strong educational and community assets that support the Training and Workforce Development sector. These assets play a crucial role in aligning workforce training with regional industry needs, and are outlined further below for Imperial and San Diego Counties, respectively.

Beyond assets specific to the region, there are several state-level and national initiatives that comprise the workforce development ecosystem. The K-16 Collective in California, for instance, is a collaborative initiative that aims to improve educational outcomes by connecting and aligning K-12 schools, community colleges, and universities. It focuses on enhancing access, equity, and seamless transitions for students across the educational spectrum, with an emphasis on supporting underserved populations and creating pathways to higher education. ACTION is another initiative in California focused on improving workforce development by aligning education and training programs with industry needs to create career pathways for job seekers. This initiative works to close skills gaps, support economic mobility, and ensure that California's workforce is prepared for current and future job opportunities across a variety of sectors.

California Jobs First has the potential to strengthen and expand the region's workforce development efforts across all the industries listed in this report through strategic partnerships with the K-16 Collective, ACTION, or supporting similar initiatives.

At the national level, the Service Corps of Retired Executives (SCORE) provides free mentoring, resources, and educational workshops for entrepreneurs and small business owners,

leveraging a network of retired executives to offer guidance on business growth and management. The Small Business Administration (SBA), a federal agency, helps small businesses by providing access to capital, loan guarantees, and business counseling through various programs and resources. Together, these organizations foster entrepreneurship, support business expansion, and promote job creation by strengthening the small business sector across the nation.

Regional Assets - Imperial County

Imperial Valley College (IVC) plays a pivotal role by offering targeted programs in the county's key industries, directly aligning with workforce needs and filling critical labor gaps. Similarly, the Imperial Valley Regional Occupational Program (IVROP) provides vocational training for high school students and adults. Developed in collaboration with local employers, these programs ensure that graduates are job-ready and meet immediate industry requirements.

The Workforce Development Board of Imperial County (WDBIC) connects residents to employment opportunities through job placement, career counseling, and specialized training programs. WDBIC focuses on providing access for rural and low-income populations, ensuring that workforce development initiatives reach the communities most in need. Complementing these efforts, rural training programs and mobile workforce units deliver essential skills training directly to isolated areas, overcoming access barriers and equipping residents with competencies in the region's industries.

Community-based organizations and nonprofits, such as Comité Cívico del Valle, further support workforce readiness by offering job training, financial literacy, and healthcare access. These groups focus on underserved populations, reducing employment barriers through language support and culturally relevant resources.

The Comprehensive Economic Development Strategy (CEDS), developed by the Imperial County Community and Economic Development office, also targets sectors such as renewable energy, agriculture, and cross-border logistics, while the county's designation as Foreign Trade Zone #257 attracts international businesses with tax incentives and streamlined customs procedures.

Organizations like the Imperial Valley Economic Development Corporation (IVEDC), the cross-border FourFront initiative, and youth programs such as Future Farmers of America (FFA) also expand career pathways, particularly for young residents. These collaborations contribute to the county's long-term economic resilience by building a skilled and adaptable workforce.

Regional Assets - San Diego County

San Diego County's workforce development infrastructure is supported by its 11 community colleges, including San Diego City College and Palomar College, which provide targeted

training, apprenticeships, and work-based learning opportunities tailored to meet regional industry needs. Complementing these efforts are Regional Occupational Programs (ROPs) and Career Technical Education (CTE) initiatives, which offer hands-on training in fields such as healthcare, IT, and construction trades. These programs, delivered through partnerships with school districts and community colleges, help high school students and adults earn industry-recognized certifications and secure job placements, facilitating smooth transitions into the workforce.

Organizations like the San Diego Workforce Partnership (SDWP) and local workforce boards, including the North San Diego Economic Development Council, provide comprehensive career counseling, job placement, and sector-specific training. These organizations emphasize support for disinvested communities and collaborate with local employers to align training with industry demand in high-growth sectors like advanced manufacturing and green technology.

A diverse network of CBOs enhances workforce readiness by offering culturally responsive job training, financial literacy, and language support. For example, the San Diego Futures Foundation promotes digital literacy, ensuring residents have the skills needed to access online training and employment opportunities.

Specialized industry training programs also play a vital role. Initiatives like the Clean Energy Training Center prepare workers for careers in green technology, energy efficiency, and clean energy installation, equipping them for California's growing renewable energy sector. Industry collaborations across high-growth fields provide paid internships and apprenticeships, offering hands-on experience and valuable skills for essential regional industries.

San Diego County's regional plans, such as the Comprehensive Economic Development Strategy (CEDS) and climate action plans, also support economic diversification and resilience. Academic and research institutions further contribute to this ecosystem by driving innovation, attracting businesses, and developing the skilled workforce needed to sustain the region's economic growth.

Increasing Economic Diversification and Resilience

The Training and Workforce Development sector directly contributes to economic diversification and resilience by equipping the Southern Border region's workforce with the skills needed for emerging industries, reducing dependence on any single sector and enhancing adaptability to economic shifts. Imperial and San Diego Counties' economies benefit from a diversified labor force capable of meeting the needs of tradeable industries like manufacturing and agriculture. By creating a flexible workforce, the region will be better prepared to respond to changing industry demands and economic disruptions.

The strategy's emphasis on foundational skills, digital literacy, and industry-specific certifications ensures that residents can access high-quality jobs and career advancement opportunities, promoting economic stability. Workforce training in sustainability practices—such as water conservation, renewable energy, and green infrastructure—also supports California's climate goals while creating resilient, locally-rooted job opportunities that are less vulnerable to external market pressures. Additionally, the training sector itself drives job creation through roles in program administration, instruction, and support services.

Alignment with Job Quality and Access, Equity, and Climate

Job Quality and Access

The Training and Workforce Development sector in the Southern Border region can provide high-quality jobs that offer stability, competitive wages, and clear pathways for growth. Roles such as career counselors, program managers, outreach coordinators, and curriculum developers include opportunities for on-the-job training with career advancement potential, supported by livable wages and health benefits. Jobs within the sector should prioritize flexible work arrangements, such as remote or part-time options, to accommodate caregivers and individuals with health challenges, promoting inclusive employment practices. Additionally, the strategy prioritizes advocating for supportive workplace policies, including mental health and wellbeing programs, to create a balanced, supportive environment for workers.

Income support measures, such as wage subsidies and stipends for trainees should also be sought to ensure financial stability during training. The sector will actively promote participatory planning processes and encourage committees made up of community members from disinvested communities to advise on ongoing program improvements, aligning job creation with the needs of those it aims to serve.

Equity

Equity is at the forefront of the Training and Workforce Development sector, with a strong focus on inclusive hiring, training, and community-centered planning. Jobs created will emphasize targeted recruitment from disinvested communities, using diverse outreach strategies to reach underrepresented populations. Translating all educational materials into multiple languages and establishing individualized entry-level learning courses, for instance, will ensure that training resources are accessible and tailored to various skill levels and backgrounds. Preferential enrollment should also be provided to members of disinvested communities to encourage their participation and career advancement within the workforce development sector.

Outreach and engagement positions should work closely with community leaders to build trust and ensure that programs are responsive to local needs. Committees comprised of

members from local communities are also expected to play a key role in planning and decision-making, reinforcing community ownership and promoting participatory planning processes. In particular, community-based organizations (CBOs) are often excluded from participating in adult education consortia but are critical partners to bridging connections and supporting adult education services for immigrants and refugees. Ensuring deep collaboration with CBOs will in turn enable more effective engagement with local workforce boards and adult education stakeholders to provide or build access to training and education programs.

Combatting employer bias and ensuring equitable hiring practices are used consistently across sectors is also critical. This includes ensuring job postings are advertised to underrepresented and disinvested groups, such as by publishing open roles on traditional job sites, rather than solely based on individual recommendations and existing relationships.

Critical to ensuring equity in the region's workforce development strategy is making the created training opportunities accessible to individuals across ages and ability levels. This includes providing training that is curated to different learning styles.

Climate

The Training and Workforce Development sector itself is aligned with California's climate and sustainability goals, embedding environmentally conscious practices into program operations and job roles. Many roles, such as program coordinators and curriculum developers, are expected to focus on integrating clean energy, zero-emission technologies, and environmental stewardship into training programs to prepare workers for a climate-resilient economy, as detailed further in each of the tradeable and locally-serving industries in this report.

Training facilities should also prioritize the use of previously abandoned or underutilized properties, converting them into functional spaces for learning and reducing environmental waste. By incorporating environmental restoration programs and clean climate education within the curriculum, roles within the sector will contribute to California's clean energy transition and promote community engagement in climate action.

Workforce Development

The Training and Workforce Development sector plays a pivotal role in creating high-quality, low-barrier jobs that directly contribute to economic stability and opportunity within the workforce development ecosystem itself. Starting with entry-level positions such as program assistants, outreach workers, and administrative coordinators, individuals can enter the workforce with minimal prior experience. These roles provide on-the-job training in essential skills like career counseling, digital literacy, and program coordination. This approach allows individuals from disinvested communities to gain foundational and industry-specific competencies, enabling them to advance professionally.

As employees develop their skills, they can progress to mid-level positions like training program managers, curriculum developers, and job placement specialists, which offer higher wages, comprehensive benefits, and increased responsibilities. Structured training and professional development programs can help employees deepen their expertise in areas such as curriculum development and digital resource management. Advancement can continue into senior-level roles such as workforce development strategists, community engagement directors, and sector-specific training leaders.

Alignment with State Strategies

The Training and Workforce Development strategy aligns closely with the California Workforce Development Board's (CWDB) Unified Strategic Workforce Development Plan, which emphasizes job quality, equitable access, and environmental resilience. The strategy's emphasis on partnerships with community colleges, trade schools, and industry aligns with the state's Strong Workforce Program, designed to enhance career technical education and workforce training through such collaborations.

By expanding K-12 career pathways, the strategy directly supports the California Career Pathways Trust and California Career Technical Education (CTE) initiatives (California Department of Education, 2024), which focus on early career exposure and foundational skill-building for students. The creation of centralized workforce resources and mobile support units also aligns with the state's equity objectives outlined in the High Road Training Partnerships (H RTP) initiative (California Workforce Development Board, 2024), ensuring that training and job opportunities are accessible to all communities, including rural and disinvested areas.

Beyond State policy, funding through the federal Workforce Investment and Opportunity Act (WIOA) can mobilize additional private and public funding sources to enhance workforce development and adult education services, particularly for immigrant and refugee communities.

Supporting Strategies

1. Strategy 1: Strengthen K-12 career pathways and foundational skill development

- a. Action step 1:** Integrate career awareness programs in K-12 schools, involving career coaches, program coordinators, and industry liaisons who introduce students to diverse fields like agriculture, energy, and manufacturing.
- b. Action step 2:** Prioritize soft skills and digital literacy within K-12 curricula, creating jobs in program development, training, and digital resource support.
- c. Action step 3:** Develop internships and work-based learning programs for high school students, employing local coordinators to connect schools with industry partners, especially in disinvested communities.

- d. Action step 4:** Align federal, state, and philanthropic funding (e.g., K-16 Collaborative) to focus on the most high-impact initiatives, building on existing programs and preventing duplication of efforts.

2. Strategy 2: Enhance access to centralized workforce resources and support services

- a. Action step 1:** Establish a regional workforce information portal, employing tech support, data analysts, and content specialists to consolidate training resources, job listings, and career counseling.
- b. Action step 2:** Create mobile training and workforce support units for rural and underserved areas, offering in-person advising and skills assessment while creating roles for advisors and program coordinators.
- c. Action step 3:** Offer workforce services tailored to community needs, such as transportation assistance and financial aid counseling, creating jobs for support staff in community centers to provide these services.
- d. Action step 4:** Appoint industry investment coordinators to facilitate collaboration between industry, community organizations, government, education and training providers, and other organizations to lower barriers to participation, creating positions in outreach coordination and partnership management.
- e. Action step 5:** Provide training to HR and management teams of companies on bias awareness and equitable hiring practices, creating training roles while strengthening workforce diversity.

3. Strategy 3: Invest in scholarships, apprenticeships, upskilling and lifelong learning initiatives

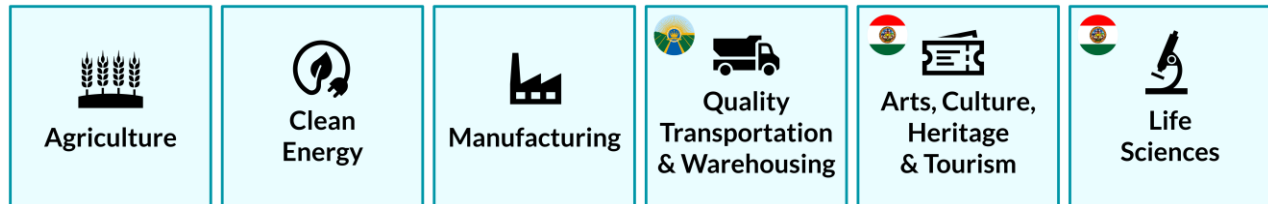
- a. Action step 1:** Expand apprenticeships, technical courses, and “earning while learning” opportunities in partnership with businesses, educational institutions and community organizations, creating roles for instructors and counselors specializing in career-focused education.
- b. Action step 2:** Expand adult education programs, including providing scholarships and supporting individuals who face barriers to employment such as single parents, immigrants, refugees, and youth in foster care, creating positions for teachers and support staff dedicated to helping residents receive career-relevant credentials.
- c. Action step 3:** Develop a regional upskilling fund, creating jobs for fund administrators and program advisors while providing financial support for training for residents in disinvested areas.

- d. Action step 4:** Create retraining initiatives for displaced workers, creating new roles for instructors and career transition counselors within these programs.
- e. Action step 5:** Support collaboration and alignment between various sector-specific community-based hubs, offering resources for skill-building and entrepreneurship while employing program coordinators, training facilitators, and innovation advisors focused on supporting local small businesses and start-ups.
- f. Action step 6:** Foster public awareness campaigns promoting lifelong learning, both to increase community participation and access and to create roles in community outreach, public relations, and digital media.

5.3 Tradeable Industries

Tradeable industries include those with the potential to pull in money from outside of Imperial and San Diego Counties. These industries have the potential to drive material economic development across the Southern Border region.

Figure 9: Overview of Tradeable Industries in the Southern Border region



The Southern Border region faces persistent systemic barriers that perpetuate inequities, particularly for historically excluded and disinvested communities. Research and feedback from SBC community engagement as well as other community engagement efforts across California highlight how structural challenges—including systemic discrimination and inequities, lack of access to quality education and training, and gaps in affordable housing, transportation, and infrastructure—create significant obstacles to economic mobility. The barriers limit access to essential resources such as information, networks, and training opportunities; critical supports like affordable childcare, transportation, and digital infrastructure; and broader systemic factors including stable housing and access to healthcare (SBC, 2024; SCAG, 2024). These challenges disproportionately impact disinvested communities, with data showing significant racial and gender disparities in upward occupational mobility (Breemersch et al., 2017). In recognition of these systemic barriers, this Plan seeks to center the needs of disinvested groups by prioritizing support for disinvested workers, particularly those with low educational attainment and historical barriers to opportunity. To that end, the Plan highlights strategies that promote labor unions, ownership, fair wages, economic inclusion, environmental protection, and training and workforce development needs. It also highlights guardrails to ensure that public resources and investments drive measurable benefits for all residents—particularly those from historically underinvested groups, such as Tribal communities, immigrants, refugees, LGBTQIA+ individuals, youth, and people with disabilities.

By elevating these equity-centered strategies, tradeable industries seek to support the creation of an inclusive economy that works for all residents. The following chapter outlines specific initiatives and partnerships designed to implement these strategies across the Southern Border region.

The supporting strategies outlined in this chapter aim to ensure all tradeable sector projects demonstrate sustainable practices, uphold labor standards, and contribute meaningfully to the local economy. These strategies seek to address challenges such as inadequate labor or environmental standards, persistent inequities, limited opportunities in disinvested communities, and the need for quality jobs and appropriate workforce development, along with other factors that may exacerbate socioeconomic disparities.

In some cases, feedback from the community reflected diverse and varied viewpoints rather than a single perspective. This underscores the importance of evaluating projects holistically and through an integrated lens, rather than applying a one-size-fits-all approach or narrowly focusing on specific industries. Thus, to maximize community benefits while minimizing harm, projects should prioritize sustainable practices and fair labor standards while ensuring decisions are informed by diverse community perspectives.



Agriculture: Investing in community farms and businesses, including local processing, to strengthen the agricultural value chain and position the region for success

Description

The agriculture sector, encompassing crop production, organic farming, ranching, food processing, agricultural technology (agtech), and distributing agricultural goods, is a foundational pillar of economic stability in the region.

Industry development

- **Local market signals:** droughts, changes to water rights, rising land costs, wage pressures, and working conditions
- **Key infrastructure needs:** processing and packaging facilities, cold storage, agtech innovation, local food hubs
- **Key regional assets:** Colorado River and All-American Canal, research and training institutions



Job quality, equity & climate

- **Enhance** workplace conditions, including wage standards, providing healthcare, and improving workplace safety
- **Increase** access to land, capital, and training for entrepreneurs from disinvested communities
- **Support** climate-smart solutions



Workforce development

- **Create** opportunities for upskilling and career growth in disinvested communities (e.g., becoming managers, inspectors, technicians)
- **Strengthen** training and mentorship programs in partnerships with local institutions to provide in-demand skills



Supporting strategies

1. **Strengthen career pathways:** provide training opportunities and apprenticeships, improve working conditions, incentivize local hiring, align initiatives with state and federal programs
2. **Support and modernize existing small farms and businesses:** establish innovation hubs, create regional food hubs, and develop funding opportunities for farming tools, agtech solutions and ecological practices (e.g., revolving loan fund)
3. **Develop new farms and businesses in disinvested communities:** incubate and provide land for new farms, businesses, and co-ops in disinvested communities (e.g., via community land trusts)
4. **Expand agricultural processing:** invest in local processing hubs and supporting infrastructure

Photo by Photo By: Kaboompics.com: <https://www.pexels.com/photo/delicate-growing-plants-being-watered-4207905/>

Agriculture

Definition and Rationale

The agriculture sector, encompassing crop production, organic farming, ranching, food processing, agricultural technology (agtech) and distributing agricultural goods, is a foundational pillar of economic stability in the region. Imperial County's agriculture industry ranks in the top 10 agricultural counties in California and is the county's largest industry, while San Diego has the largest combined farm and fishing sales of any county in the US, at over \$1.8 billion annually (San Diego Food Vision, 2023).

Under the North American Industry Classification System (NAICS), this industry aligns with code 11 ("Agriculture, Forestry, Fishing and Hunting"), with specific subcodes for various agriculture-related jobs, including codes 1111-1114 and 1119 for various types of crop farming, 1121-1124 for ranching, poultry and egg production, and 1151-1152 for associated support activities. While these codes serve as a practical reference and were used to compile industry information (as available data is often categorized under it), they may not fully capture all nuances or variations within the industry.

The rationale for focusing on agriculture is as follows:

- **Job Creation and Economic Potential:** Imperial County's expansive farmlands and access to Colorado River water—with over 70% of California's Colorado River allocation belonging to Imperial County—make it one of California's top agricultural producers, ranking 9th out of 58 counties in the state in gross value of agricultural production (KUNC News, 2023; Imperial County Agricultural Commission Crop Report, 2023). San Diego County leads the state in organic farming, with 545 organic farms, the most of any county in the state (California Agriculture Organic Report, 2023). These assets offer opportunities to create a wide range of jobs, from farm labor and food processing to agtech and logistics. Importantly, the sector provides accessible employment for disinvested communities, offering low-barrier entry points into the workforce and career advancement opportunities.
- **Environmental Imperative:** Transitioning to sustainable, climate-smart farming practices, such as precision irrigation and renewable energy integration, is crucial for conserving water, increasing drought resistance, and reducing the environmental impact of agriculture—particularly considering the potential renegotiation of Colorado River Water rights. These practices not only protect vital natural resources but also create additional jobs in agtech, farm management, and green infrastructure, aligning with California's climate goals while fostering a more resilient agricultural economy.
- **Equity Considerations:** With proper policies and funding, agriculture can provide a clear pathway for addressing historical inequities. It can do so by offering jobs and

economic opportunities to disinvested communities while improving working conditions and preventing exploitative practices, and accounting for the unique dynamics of the region. For instance, a significant number of workers cross the Mexican border daily to support the agricultural sector in Imperial County, which may not be adequately represented in existing statistics. Programs that support minority and first-generation farmers, along with workforce development initiatives, can ensure that members of disinvested communities have access to agricultural careers, land ownership opportunities, and the skills needed to thrive in the evolving sector. By focusing on equitable job creation, Imperial and San Diego Counties can ensure that agricultural growth benefits the region's most historically disinvested populations.

The Imperial County Tribal Communities Study Report also highlights key agriculture needs identified by Tribal members. Increasing the knowledge of Native lands to restore and protect natural resources was identified as a top priority, along with supporting the creation of community gardens, food co-ops, local markets, Tribal nurseries, and replanting and stewarding culturally significant species as potential pathways to jobs that can sustain communities and pursue food justice, security, sovereignty, and equity. For additional details, please refer to Chapter 7, “Imperial County Tribal Communities Study Report”.

Industry Development

Agriculture in Imperial and San Diego counties is a cornerstone of the region's economy, playing a critical role in food production, environmental sustainability, and rural employment. According to the Imperial County Agricultural Commission Crop Report (IC Agricultural Commission, 2023), agriculture production in Imperial County has “exceptionally high levels of economic diversification, which provides important economic resilience to the industry and the larger county economy.” The key commodities produced in this region are cattle, alfalfa, lettuce, Bermuda grass hay, spinach, onions, alfalfa seed, and carrots. However, the Imperial County agriculture industry processes most, if not all, of its raw agricultural products outside the county. The industry can add local value by developing the infrastructure needed to process these products within the county. In San Diego County, smaller farms are more common, specializing in high-value crops like avocados, citrus, and nursery plants. More than 217,000 San Diegans are employed in the food system, equivalent to ~12% of all jobs in the county (San Diego Food Vision, 2023). In addition, San Diego County has an active fishing community and diverse catch, with California spiny lobster, spot prawn, and red sea urchin generating the most sales.

Both counties benefit from distinct agricultural strengths—Imperial County’s agricultural economy thrives due to its extensive water rights and vast desert farmland, while San Diego County excels in high-value crops, organic farming, and technological innovations in water conservation and urban agriculture.

- **Location Quotient (LQ):** Imperial County's farm employment has an LQ of approximately 3.87, indicating a much higher concentration of agricultural employment than the national average (U.S. Bureau of Labor Statistics, 2023). San Diego County's LQ is lower at around 0.43, reflecting a more specialized role for agriculture.
- **Total Sector Employment:** In Imperial County, agriculture provides jobs for about 20,000 workers, an 8% increase from 2021. Approximately three quarters of these jobs are direct jobs in agricultural production. The remaining quarter are indirect jobs along the agricultural value chain. This represents approximately 1 in 6 of all jobs in the county, a key source of livelihood for rural communities (IC Agricultural Commission, 2024). In contrast, San Diego County's agricultural sector employs around 16,000 people, approximately two thirds of which are direct roles in agricultural production and processing (County of San Diego Department of Agriculture Weights and Measures, 2016). This represents about 1.2% of the workforce, focusing more on small-scale, high-value farming (California Employment Development Department, 2023). In Imperial County, employment in the agricultural sector is projected to grow by 5.8% between 2020 and 2030 (U.S. Bureau of Labor Statistics, 2023), reinforcing the potential of the sector in the County. In San Diego County, employment in the agricultural sector is expected to decline by 7.6% (U.S. Bureau of Labor Statistics, 2023), reflecting threats to farm viability in the county, including rising costs (especially land costs) and development pressures.
- declined by nearly 6 year-over-year in 2022, compared to stagnating growth nationally. On the other hand, farm employment grew by nearly 10% year-over-year in 2022 in San Diego County. However, this was in response to prior job losses, and farm employment in 2022 was still approximately 1% less than in 2002 in the county (Regional Economic Analysis Project, 2022).
- **Median Annual Wage:** The median annual wages for farm workers in Imperial County and San Diego County are \$37,140 and \$36,960, respectively, corresponding to the national average at \$37,140 (U.S. Bureau of Labor Statistics, 2023). However, when considering broader employment in the agriculture sector beyond farmworkers, greater differences emerge. There are also variances in wages depending on the location, farm size, crop type, and seasonality, with many workers unable to work year-round and earning significantly less than the tracked median income.
- **Workforce Development and Education:** Both counties invest in agricultural education and innovation to remain competitive. Imperial County's efforts focus on workforce development aligned with precision agriculture and water management, essential for maintaining productivity in arid conditions. San Diego County emphasizes sustainable practices and urban agriculture, partnering with institutions like the

University of California's Cooperative Extension programs to advance technologies in sustainable farming and water-efficient practices.

Both counties face increasing challenges, including water scarcity and competition from other producers and distributors. Yet local innovations can position the sector for growth, including the expansion of value-added processing hubs in both counties, in which farmers can transform raw goods into packaged products to capture higher margins, supporting the creation of additional family-owned farms and businesses along the agricultural value chain.

Local Market Signals

Water from the Colorado River is vital to the region's agriculture. Imperial County's Imperial Irrigation District (IID) holds the largest single allocation of the river's water, and 80% of San Diego County's water is imported from IID. Water scarcity and droughts are a key challenge, with growing water stress and increasing costs reducing production and jeopardizing the long-term viability of farms and ranches in the region. Investments in water efficiency and enhancement technologies at local, state, and federal levels are essential to conserve water use and sustain agricultural production across both counties.

In Imperial County, a significant number of agricultural producers are older than 65, with the average age of U.S. farm producers rising to 55.1 in 2022 (USDA, 2022). Without effective efforts to recruit and support the next generation of farmers, both regions risk losing valuable agricultural knowledge and productivity, threatening the continuity of farming operations. Additionally, demographic disparities exist, as many agricultural producers in Imperial County are white males, while 90 percent of California's hired farm workers were born in Mexico (UC Davis Centre for Population Studies, 2024). Food and farm workers in Imperial County receive some of the lowest wages in the state, with minimal healthcare, retirement, and paid leave benefits.

San Diego County's agricultural sector is shrinking due to development pressure, declining agricultural lands, rising water costs, and the changing climate (San Diego Food Vision, 2023). Global, national, and state trends highlight a decline in agriculture and commercial fisheries, and San Diego County's small and mid-sized farmers, fishermen, and food businesses are struggling to remain viable. Similarly, Imperial County is seeing consolidation in agriculture, with 45% of farms now spanning over 1,000 acres, making it increasingly difficult for smaller, independent producers to compete. Access to land remains one of the most critical barriers faced by aspiring farmers and producers in Imperial County, as larger farms dominate the market.

Urban development pressure is also shrinking available agricultural land in San Diego County, compounding the challenges faced by small and mid-sized farmers trying to gain a foothold in the market. In addition, Imperial County is one of only five counties in California to not have

renewed its Williamson Act contracts—referring to the California Land Conservation Act of 1965, which preserves agricultural and open space lands. Both counties must prioritize equitable access to land to ensure a diverse and resilient agricultural economy.

Despite being major agricultural regions, both Imperial and San Diego Counties also experience persistent food insecurity, with Imperial County having the highest food insecurity rate in the state. The food insecurity rates in Imperial and San Diego Counties are 21% and 10.9%, respectively, with Black, American Indian/Alaska Native, and other communities of color disproportionately impacted (Feeding America, 2022; San Diego Hunger Coalition, 2024). These communities face limited access to healthy food, alongside persistent inequalities in food environments, driving nutritional inequities and health disparities.

Lastly, food and farm workers in San Diego County earn some of the lowest wages in the state. In both Imperial and San Diego Counties, many food workers lack healthcare, retirement plans, and paid leave, contributing to economic insecurity and high turnover in the agricultural labor force. Food waste is another major issue in San Diego County, where it represents the third-largest source of landfill waste (San Diego Food System Alliance, 2018). This waste not only harms the environment but also reflects inefficiencies in the agricultural value chain. Reducing food waste through improved processing, value-added production, and distribution systems can help mitigate environmental damage while creating new economic opportunities for both counties, especially in food processing and logistics.

Many agricultural workers in the region have suffered low wages, poor working conditions, and limited upward mobility, exacerbated by the exploitative practices of large industrial farms. This plan aims to tackle this status quo by promoting smaller community-owned farms in disinvested communities, fostering improvements in wages and job quality, and providing upskilling opportunities to drive career progression.

Value Chain and Infrastructure

Imperial County possesses extensive farmland, historically reliable access to Colorado River water, and a strong foundation in large-scale agricultural production. However, alternative land uses may compete with farming for land access, and water rights negotiations and future droughts can threaten the reliability of the county's water access. To fully unlock its potential, investments are needed in local processing facilities, cold storage, and transportation infrastructure. Currently, a significant portion of Imperial's agricultural products are processed outside the region, which limits local economic benefits. By expanding its infrastructure, including processing plants and improved transportation links to major highways and cross-border trade routes, Imperial can better integrate into regional and international markets.

San Diego County, with its focus on smaller, high value farms, contributes to the agricultural value chain through specialty crop production, such as avocados. The region's infrastructure supports the sustainable scaling of local food systems, with a focus on reducing the need for external processing and increasing farm-to-market efficiency. By investing in local food hubs, San Diego can continue to support its agricultural sector's growth while reducing its carbon footprint. Both counties are united by their geographic and logistical strengths, ensuring efficient movement of products to broader state, national, and cross-border markets.

Strengthening the agricultural value chain in Imperial and San Diego counties requires targeted investments not only in farms but also in the businesses that support and extend the value of agricultural production. This includes expanding distributors, small-scale processing plants, and packaging facilities that can process raw agricultural products locally, allowing for value-added activities to take place within the region. Strengthened cross-border trade infrastructure also has the potential to streamline agricultural exports and imports with Mexico.

Investments in these areas will enable local farmers to retain a greater share of economic benefits, reduce reliance on external processors, and open up new markets for processed goods. Supporting workforce training providers is also crucial; by offering specialized training in areas like agribusiness management, food safety standards, and new agricultural technologies, the region can ensure a skilled workforce ready to meet the growing demands of the agricultural sector.

Innovation Ecosystems

The innovation ecosystems in Imperial and San Diego counties are pivotal for advancing agricultural technologies and sustainable practices. Imperial County, with its abundant land and favorable climate, provides an ideal environment for testing and scaling new agricultural innovations. Research institutions like the University of California's Desert Research Extension Center (DREC) and Imperial Valley College are key players in advancing climate-smart agriculture, precision farming, and efficient water management practices. These institutions work closely with local farmers to bring cutting-edge technologies from research to implementation, ensuring the region's long-term agricultural sustainability. However, there is an opportunity to add agricultural research capacity in Imperial County to reflect the important role agriculture plays in the region's economy, including additional labs and research facilities.

San Diego County complements Imperial by serving as a hub for agtech innovation. With its proximity to major research institutions, such as University of California San Diego, and a sizeable startup ecosystem, San Diego focuses on developing advanced technologies like hydroponics, aquaculture, and regenerative farming. The county's innovation incubators and support programs help early-stage agricultural businesses bring new products and

technologies to market. Together, these efforts create a dynamic innovation ecosystem that supports both traditional and urban agriculture across the two counties.

Regional Assets

Imperial County's vast agricultural land, year-round growing conditions, and access to water from the Colorado River via the All-American Canal have historically provided a solid foundation for large-scale agriculture. However, these conditions are evolving, requiring careful planning to ensure the long-term viability and vitality of the agricultural sector.

The county is home to over 500,000 farmable acres of land, and roughly 2.8 million acre-feet of water is used per year to grow crops and support livestock in the county (U.S. Department of Agriculture, 2017). Winters are mild and dry, with daily maximum temperatures in the 65–75-degree Fahrenheit range. Summers are extremely hot, with daily maximum temperatures of 104–115 degrees Fahrenheit. The annual rainfall is just over 3 inches, most of which comes in late summer or midwinter (US Climate Data, 2024). As noted above, the county is also home to key research and training institutions like Imperial Valley College, which offers several plant science and agricultural business programs at both the associate degree and certificate levels of achievement, as well as the University of California Cooperative Extension (UCCE) and the Desert Research Extension Center (DREC), which specialize in education related to vegetable crops, alfalfa, desert cattle feeding, irrigation and drainage management, and pest management.

San Diego County is characterized by its diverse microclimates and topography, making it one of the most agriculturally diverse regions in the country. San Diego County's climate is ideal for year-round production, with coastal areas benefiting from mild temperatures and inland areas experiencing warmer, drier conditions. Average winter temperatures range from 55–65°F (13–18°C) along the coast, while summers can reach 85–95°F (29–35°C) in the inland valleys. Rainfall varies dramatically across the county, from 10 inches (25 cm) per year in coastal zones to 40 inches (100 cm) in the mountains, enabling a wide variety of crops to thrive (US Climate Data). As noted above, San Diego State University (SDSU) and the University of California San Diego contribute cutting-edge research in agtech, supporting innovation in water conservation, regenerative agriculture, and pest management. In addition, the San Diego Food System Alliance plays a pivotal role in promoting sustainable and equitable local food systems, providing capacity building and cultivating a network of cross-sector organizations and advocates. These assets, combined with San Diego County's proximity to the Port of San Diego for export, support the resilience of the region's agricultural sector.

Increasing Economic Diversification and Resilience

Agriculture offers a pathway to diversify the economies of both Imperial and San Diego counties, providing stability against economic disruptions in other sectors. By focusing on

local food production and reducing reliance on non-renewable resources, the region can increase its economic self-sufficiency.

Promoting smaller, diversified farm operations—particularly in Imperial County through land access programs and incubator initiatives—will not only create jobs but also ensure that the agricultural economy is less vulnerable to market volatility. Expanding sustainable practices, such as regenerative farming and water conservation, will enhance soil health, drought resistance, and improve the long-term viability of agriculture in both counties.

Developing processing facilities within the region will further increase local economic resilience. For example, local cold storage and food processing hubs can increase market flexibility, allowing farmers to store products during periods of low demand and sell them when prices are more favorable. This will reduce farmers' dependence on volatile commodity prices and ensure that more revenue remains within the region.

Alignment with Job Quality and Access, Equity, and Climate

Job Quality and Access

Job quality improvements—such as raising wage standards, providing healthcare, and enhancing workplace safety—are key to attracting and retaining workers in the agriculture sector. Partnerships with local labor organizations and community colleges will also support advocating for job quality and working standards, preventing exploitative practices while offering clear career pathways for advancement.

Workforce training programs should focus on equipping workers with the skills needed for higher-paying, specialized roles, such as food safety inspectors, logistics coordinators, and equipment technicians. Partnering with local communities should be prioritized to ensure widespread access to training programs, including through the use of mobile workforce development units. In addition, trainings should aim to be designed such that they are accessible to individuals of all ages, ability levels, and learning styles.

Equity

The strategy emphasizes equitable access to land, capital, and leadership positions for disinvested communities, particularly farmers and small business owners in the agricultural sector. The establishment of Community Land Trusts (CLTs), for instance, can enable these farmers to lease land at affordable rates, preventing the consolidation of farmland into large corporate holdings. Low-cost loans and grants can further support minority farmers in purchasing equipment and investing in sustainable farming practices.

In addition, this strategy emphasizes mentoring and educating new farmers from disinvested communities, offering them the tools and resources needed to establish and grow profitable

farms. These incubation and mentorship opportunities should especially look to support immigrants, refugees, individuals with disabilities, and members of Tribal communities. By prioritizing land access and capital for underrepresented groups, the strategy can foster a more inclusive agricultural sector that reflects the diversity of the region.

Climate

Sustainable farming practices are essential to reducing the environmental impact of agriculture in the Southern Border region. Both Imperial and San Diego Counties should adopt climate-smart practices such as precision irrigation, crop rotation, and integrated pest management to reduce water usage, improve soil health, and minimize carbon emissions.

Renewable energy solutions, such as solar-powered irrigation systems, will help reduce the agricultural sector's reliance on fossil fuels. These systems can be implemented across large-scale operations in Imperial County as well as smaller organic farms in San Diego County. Additionally, conservation agriculture, which involves minimal soil disturbance and the use of cover crops, can increase the resilience of farmland to droughts and extreme weather events. Value-added agricultural processing hubs should also be developed with close consideration to impacts on local communities, ensuring that the created hubs are not polluting or discharging environmental waste.

Workforce Development

Training and Recruitment

Tailored training programs at institutions like Imperial Valley College and University of California San Diego aim to equip farmworkers with the skills needed for modern agriculture. These programs need to evolve in their scale and subject matter to meet the needs of the region's agriculture sector. Moreover, traditional programs are often costly and time consuming for students and workers looking to upskill and develop their careers. As such, beyond traditional institutions, this strategy emphasizes apprenticeships, in alignment with California's Division of Apprenticeship standards. It also focuses on community-level mentorship, training, and incubation programs that prioritize emerging technologies in water management, renewable energy, and agtech, ensuring that the workforce is prepared to meet the evolving demands of the industry. Recruitment efforts should target disinvested communities, providing pathways to higher-paying jobs in agriculture and food systems.

Equitable Access and Economic Mobility

Mentorship programs that support minority-owned farms and initiatives to transition farmworkers into farm ownership can create opportunities for upward mobility. This strategy suggests providing financial support for first-generation farmers, helping them access land and capital. Such programs will ensure members of disinvested communities have access to

technical training, business development resources, and affordable leases, ensuring their success in the agricultural sector.

Retention & Advancement

To retain skilled agricultural workers, the strategy suggests implementing measures to improve job quality, including wage increases, access to healthcare, and safer working conditions. Furthermore, training programs should be designed to promote career advancement, allowing workers to transition into higher-skilled roles, such as agtech operators, farm supervisors, and environmental managers. Collaborations with local educational institutions will help workers stay up-to-date on industry trends and emerging technologies.

Addressing Future Needs

As climate change continues to affect the agriculture sector, ongoing education in climate-adaptive practices will be pivotal, including by creating education programs that focus on precision agriculture, renewable energy integration, and water conservation techniques. Continuous collaboration with industry leaders and educational institutions will be key to ensuring that the workforce remains agile and equipped to tackle future challenges.

Alignment with State Strategies

The Southern Border Coalition's agricultural strategy is aligned with California's state-level climate, sustainability, and water management goals, while addressing regional economic needs in Imperial and San Diego counties.

A key component of this strategy is addressing water use efficiency. The region's reliance on the Colorado River is governed by the Law of the River—a series of legal agreements, compacts, and treaties that dictate how Colorado River water is allocated. As climate change continues to reduce water availability, future negotiations around water rights will have significant impacts on the agricultural sector. The strategy supports the adoption of advanced irrigation technologies and participation in the Deficit Irrigation Program, which incentivizes voluntary agreements by farmers cultivating either alfalfa, Bermuda grass, or Klein grass, to reduce their water use from the Colorado River. This program encourages the use of deficit irrigation methods, allowing farmers to adjust water usage without significantly affecting crop yields, aligning with the Sustainable Groundwater Management Act (SGMA) and California's broader water conservation goals.

In both counties, the integration of precision farming technologies, such as solar-powered irrigation systems and soil moisture sensors, aligns with the California Climate Adaptation Strategy and the California Climate Scoping Plan. These innovations can reduce greenhouse gas emissions, conserve water, and improve resource efficiency, supporting the state's climate goals while ensuring the long-term viability of agriculture in the region, all while creating

additional jobs in the sector. These technologies also contribute to compliance with the California Irrigated Lands Regulatory Program (ILRP), which promotes sustainable water use and the reduction of water pollution.

The strategy also aligns with the California Department of Food and Agriculture's Ag Vision for the Next Decade, which emphasizes sustainable practices, climate-smart agriculture, and resilience. By modernizing farms with renewable energy solutions and promoting organic and regenerative farming, the Southern Border Coalition's strategy directly supports these state priorities. Initiatives such as value-added processing hubs and local food systems also contribute to economic resilience while fostering sustainable practices.

The strategy aligns with the state's 30x30 Initiative as well, which aims to protect 30% of California's land by 2030, by promoting practices such as organic farming, integrated pest management, regenerative agriculture, enhancing soil health, and protecting biodiversity.

Finally, air quality improvements have also been considered, aligning with state air pollution reduction targets. The adoption of low-emissions equipment, combined with sustainable practices that reduce dust and particulate emissions, supports California's Air Resources Board standards, contributing to improved air quality in agricultural communities.

Sub-regional Spotlights

Imperial County

Imperial County's agricultural sector is uniquely positioned for large-scale production. However, with the potential renegotiation of Colorado River water rights and climate-induced water scarcity on the horizon, the county faces potential reductions in water allocations, which could significantly impact production. To address this, the proposed strategy includes a proactive approach by encouraging more drought-resistant crop varieties and innovative water-saving techniques. The plan also recognizes the opportunity for cross-border agricultural partnerships with Mexico, allowing the county to leverage its strategic location for bi-national trade and knowledge exchange, further ensuring the region's resilience.

The plan also focuses on diversifying farm sizes away from the primarily large farms that exist in the county today and encouraging the creation and sustainment of locally owned farms and businesses along the agricultural value chain, strengthening the agricultural sector in the county and ensuring that the economic benefits of investing in agriculture in the region are realized by historically disinvested communities.

San Diego County

San Diego County's agricultural industry is built on diversity and innovation, with a focus on small-scale, high-value specialty crops such as avocados and organic produce. While land

prices and urban development pose constant pressures, San Diego has cultivated a system of local food markets and agritourism, drawing on the region's proximity to urban centers and tourism hubs. However, the county's relatively small farms face economic vulnerabilities, including market access and the high cost of land ownership.

Contrary to Imperial County, most of the county's approximately 5,000 farms are under 10 acres. These smaller farms are vulnerable to rising land costs and urban encroachment, yet they benefit from proximity to urban markets and a well-established direct-to-consumer food network. This strategy addresses challenges by promoting land trusts and other mechanisms to secure affordable farmland and sustain small farming operations. The plan also emphasizes helping small-scale farmers capture premium markets both locally and internationally by strengthening value chains.

Supporting Strategies

1. Strategy 1: Strengthen career pathways

- a. Action step 1:** Implement mentorship and training programs that offer farmworkers technical skills in precision agriculture, farm management, agtech operations, and ecological practices. Building on the innovation hubs proposed in strategy 2, action step 2, providing hands-on experience and formal certifications will create pathways to higher-paying, specialized roles such as farm supervisors, irrigation technicians, and food safety experts. Apprenticeship models could also be introduced to give workers prolonged, on-the-job learning experiences where they can earn wages while acquiring new skills, eventually progressing into supervisory or technical specialist roles. Given the seasonal nature of many farming jobs, learning opportunities that would enable seasonal workers to have year-round income should be prioritized. The creation of digital learning platforms and mobile training can be leveraged to expand access to training, enabling workers in more remote areas of Imperial and San Diego Counties to participate. By offering bilingual training programs, the strategy would further remove barriers for non-English-speaking workers.
- b. Action step 2:** Implement policies that elevate wages and improve working conditions, such as workplace safety and labor intensity protocols, ensuring that the agriculture sector attracts and retains workers. By working with labor organizations, farm owners, and local governments, these policies will address critical issues such as healthcare access and safety protocols, as well as reduce labor intensity. This strategy can include efforts to establish industry-wide wage standards for roles in agriculture in collaboration with state employment boards. Improved benefits packages, such as affordable healthcare, paid sick leave, and retirement plans can also be negotiated as part of collective agreements to

attract and retain workers in the sector. Implementing workplace safety protocols—especially concerning pesticide exposure, machinery handling, and extreme weather conditions—will further ensure that current and new agriculture jobs being created are truly high-quality.

- c. Action step 3:** Leverage state and federal programs to augment training and recruitment efforts. These programs can provide additional resources for outreach, training curriculum development, and the recruitment of individuals from disinvested communities into the agriculture sector. For instance, California Workforce Development Board grants can be used to promote collaboration between employers, workers and community organizations—including through the establishment of innovation hubs (action step 2.2 below).. Another example is the USDA’s Beginning Farmer and Rancher Development Program, which provides funding specifically for new entrants into agriculture, particularly those from disinvested communities.
- d. Action step 4:** Prioritize projects with a defined (and agreed upon) percentage of jobs designated for local workers, especially those from disinvested communities, ensuring those jobs offer long-term stability, fair wages, and opportunities for advancement beyond entry-level or temporary roles. Collaborations with employers can help create pathways to supervisory and technical positions.

2. Strategy 2: Support and modernize existing small farms and businesses

- a. Action step 1:** Develop funding opportunities (e.g., revolving loan funds) that will allow farmers in both counties to invest in necessary tools and equipment (e.g., green equipment), advanced agricultural technology (agtech) solutions, and in implementing ecological practices. This will allow existing farms to upgrade their infrastructure, reduce water use, and transition to climate-smart practices, while also creating higher-skilled jobs. Consideration should be given to providing incumbent workers with training on the equipment and technologies obtained using this funding, with certifications provided when available. These programs should emphasize precision farming technologies like drip irrigation, soil moisture sensors, and solar-powered irrigation systems to reduce water use, as well as renewable energy solutions, which can lower farm operational costs and reduce emissions. This can enable small farms to increase their margins and expand operations, in turn creating additional jobs in the sector along the agricultural value chain. Funding should prioritize new farmers who were previously field workers or who are from disinvested communities, and should be offered at subsidized loan rates or with other conditions that enable access to funds. It is also important to ensure that the terms of these funding

opportunities do not place undue risk burdens on farmers, by providing forgiveness clauses for instances like drought conditions that render farmers unable to repay their loans.

- b. Action step 2:** Establish innovation hubs that serve as centers for research, technology development and cross-sector collaboration, bringing together universities, trade programs and other public and private sector partners. These hubs should focus on fostering knowledge exchange and providing farmers and other businesses in the agriculture sector access to the latest advancements in the sector, including water conservation, renewable energy adoption, urban agriculture and regenerative farming. In addition, expanding cross-border collaboration with Mexico can increase regional agricultural partnerships and create a more robust innovation ecosystem. Partnerships with key educational institutions such as UCCE, the DREC, SDSU and UCSD can help strengthen the reach of these hubs, with institutions acting as conveners for ecosystem actors to both benefit from and deliver programs.
- c. Action step 3:** Strengthen local food supply chains by creating regional food hubs that will enable small and mid-sized farms in both counties to aggregate and distribute their products more effectively, reducing reliance on large distributors and allowing local farmers to retain more value from their crops. These hubs can connect small farmers to direct-to-consumer markets, expanding opportunities for farmers' markets and local retail partnerships. This can help ensure economic value remains within the region across the value chain, including harvesting, processing, packaging, and distribution. In addition, partnering with statewide distribution networks can help scale operations beyond the local market. By collaborating with logistics companies, regional food hubs, and retailers, these farms can consolidate, store, and transport produce across California, tapping into larger markets such as farm-to-table restaurants, grocery stores, and subscription services.

3. Strategy 3: Develop new farms and businesses in disinvested communities

- a. Action step 1:** Invest in farm and food business support and incubation programs that provide technical training, mentorship, ongoing technical assistance, and other business development resources to help new and emerging farmers and entrepreneurs establish successful operations. These programs should focus on recruiting from disinvested communities and offering access to low-interest loans, lines of credit or grants to support the purchase and leasing of land and securing the materials and equipment required for starting new farms and businesses. Financing programs should be designed to be accessible to field workers and disinvested community members. By

prioritizing helping first-generation entrepreneurs build profitable and sustainable operations across the agricultural value chain (e.g., indoor and outdoor farms, ranches, processing facilities, equipment providers, distributors), a variety of jobs can be created, not just in farming but across the region's agricultural sector. Supporting farming co-ops and other community ownership models should be prioritized, as these models can enable cost sharing and increase the competitiveness of small farms while bolstering farming incomes. New farmers can also benefit from programs delivered as part of the innovation hub(s) outlined in action step 2.2.

- b. Action step 2:** Invest in and support the operation of Community Land Trusts (CLTs)—or Agricultural Land Trusts (ALTs)—that identify, acquire and lease land at affordable rates, including publicly owned land, private donations, and conservation easements, ensuring that land remains available for businesses along the agricultural value chain rather than being lost to urban or commercial development, ensuring long-term access to land for workers in the agricultural sector from disinvested communities. CLTs can also combat the impacts of speculative development that drives up land costs, displaces small farmers and business owners, and reduces the availability of land for local food production, particularly in San Diego County, where urban encroachment is most severe. In Imperial County, CLTs can also help prevent the consolidation of farmland by large corporations, preserving access for small and mid-sized farms and helping build a pipeline of future farmers. Access to CLT land should be contingent upon the quality of working conditions and factors such as crop type, prioritizing crops with lower water consumption and encouraging a shift towards more drought-resistant crops.

4. Strategy 4: Expand agricultural processing

- a. Action step 1:** Support the creation of value-added processing hubs, particularly in disinvested communities, enabling farmers to turn raw agricultural goods into packaged, market-ready products (e.g., packaged vegetables). In Imperial County, where large-scale farming of perishable crops like alfalfa is common, cold storage and processing facilities will allow the County to process these goods locally, reducing the reliance on external processing centers and expanding market potential. Renewable energy solutions like solar power should be examined further to address high electricity costs associated with cold storage in the region and ensure processing hubs are not polluting communities. In San Diego County, value-added processing would instead focus on specialty crops such as organic produce, enabling packaged and branded products to be prepared for sale in premium markets, both locally

and internationally. Investing in localized processing would not only increase the margin that local farms can capture and contribute to their long-term viability, but it would also create additional jobs across the agricultural value chain, including in processing, transportation, storage, sales, and marketing. Community benefit agreements should be prioritized when funding such initiatives, ensuring they are developed with robust stakeholder engagement and new jobs created are filled by individuals from disinvested communities.

- b. Action step 2:** Increase the visibility and export potential of locally produced food by building a strong brand identity and working with state and local marketing agencies and chambers of commerce to promote and showcase the region's agricultural products. Working with schools and government agencies can also increase the consumption of locally grown and processed food products. Additionally, participation in international trade shows and food expos can showcase the region's products to global buyers, increasing export opportunities and forming connections with foreign distributors and retailers. Expanding agritourism initiatives can further strengthen the export potential of the region's products, such as farm-to-fork experiences, agricultural tours and food festivals that draw tourists to the region. Working with partners in food packaging innovation also has the potential to help make the region's products more competitive and drive export potential.



Clean energy: Supporting innovation and growth to drive sustainability, reduce emissions, and promote healthier communities

Description

The clean energy sector includes renewable sources like solar, wind, and geothermal, along with innovations such as green hydrogen, energy storage, and smart grids, minimizing environmental impact. The sector has the potential to be a key driver of economic growth and sustainability, reducing emissions and creating jobs.

Industry development

- **Local market signals:** IC's geothermal (1,000 + MW), solar farms and emerging resources, alongside SDC's leadership in energy storage, green hydrogen, and cleantech
- **Key infrastructure needs:** Transmission line expansion and grid modernization
- **Key regional assets:** IC's geothermal & solar resources, SDC's R&D and cross-border trade



Job quality, equity & climate

- **Create** high-wage, stable & long-term jobs with trainings for advanced energy roles
- **Distribute** energy benefits equitably through investments on infrastructure, allocation of energy, and affordable access
- **Enhance** sustainability with safeguards protecting air and water quality



Workforce development

- **Cultivate** local talent with training programs in solar, geothermal, and hydrogen technologies
- **Support** transitions from gas and fossil fuels with accessible resources and retraining
- **Create** jobs through investments in existing technologies



Supporting strategies

1. **Commit to provide clean local energy:** ensure locally produced clean energy benefits communities through local supply and equitable infrastructure
2. **Invest in workforce development:** align training, prioritize local hiring, and support retention
3. **Scale existing technologies:** grow investments in solar and biofuels to maximize job creation
4. **Attract emerging technologies:** foster investments in green hydrogen, biofuels, and energy storage
5. **Expand cleantech manufacturing:** promote energy-efficient production & circular economy practices
6. **Position IC as clean energy leader:** leverage benefits (e.g., streamlined permitting) to attract investment
7. **Position SDC as clean tech innovator:** invest in R&D, and cleantech to expand energy solutions



Photo by Los Muertos Crew: <https://www.pexels.com/photo/solar-technician-installing-solar-panel-8853502/>

Clean Energy

Definition and Rationale

The clean energy sector is a pivotal driver of economic development in Imperial and San Diego Counties, encompassing a range of technologies that contribute to sustainability and environmental protection. For the purposes of this chapter, "clean energy" refers to energy sources and technologies that minimize environmental impact and promote sustainability as compared to fossil fuels. This includes renewable energy sources such as solar, wind, and geothermal, as well as innovative solutions like green hydrogen. Clean energy also encompasses energy efficiency measures and technologies that reduce overall energy consumption and emissions, as well as innovative solutions like energy storage, which involves capturing and storing surplus energy for future use, and smart grid systems that enhance grid reliability and sustainability of energy use.

By transitioning to clean energy, Imperial and San Diego Counties aim to significantly lower carbon emissions, mitigate climate change effects, and promote a healthier environment for current and future generations. This definition aligns with California's ambitious climate goals, such as achieving 100% clean electricity by 2045 and reducing greenhouse gas emissions to 40% by 2030.

... "clean energy" refers to energy sources and technologies that minimize environmental impact and promote sustainability... This includes renewable energy sources such as solar, wind, and geothermal, as well as innovative solutions like green hydrogen... energy efficiency measures and technologies to reduce overall energy consumption and emissions...

This chapter will explore how clean energy contributes to regional economic diversification and sustainability, while also emphasizing the critical role of clean technology manufacturing, which focuses on producing the equipment and components necessary for generating clean energy, including batteries and energy-efficient technologies.

The rationale for focusing on clean energy is as follows:

- **Economic Potential:** San Diego County's clean technology ecosystem is one of the most advanced in the nation, with over 925 companies driving innovation in renewable energy technologies. Meanwhile, Imperial County's solar and geothermal capacity provides an opportunity for significant energy production, manufacturing, and job creation.
- **Environmental Imperative:** Transitioning to clean energy is not only aligned with California's climate goals but is also important for reducing air pollution, enhancing energy resilience, and addressing climate change.

- **Equity Considerations:** Both counties have the opportunity to ensure that clean energy growth benefits disinvested communities through targeted job creation, training programs, and access to affordable clean energy.

Under the North American Industry Classification System (NAICS), this industry aligns with code 22111 (“Electric Power Generation”), with specific subcodes depending on the energy type (e.g., 221114 for solar, 221116 for geothermal, and 221118 for other electric power generation). While this code serves as a practical reference and was used to compile industry information (as available data is often categorized under it), it may not fully capture all nuances or variations within the industry.

Industry Development

The clean energy sector in Imperial and San Diego counties is experiencing notable growth, driven by market demand and California’s ambitious climate goals. Current trends show a shift toward renewable energy technologies, such as solar, geothermal, and emerging sectors like green hydrogen and sustainable aviation fuels. As the region seeks to reduce its reliance on natural gas, it becomes imperative to invest in programs that facilitate workforce transitions, ensuring that job impacts are effectively managed. These advancements are supported by state and federal policies like the California Climate Scoping Plan. Additionally, clean technology manufacturing, which produces essential components like energy-efficient machinery, solar panels, and battery systems, has emerged as an important contributor to local economic growth. Clean tech manufacturing not only provides the equipment necessary for renewable energy production but also creates jobs in high-tech sectors, as outlined in the Manufacturing Section.

- **Location Quotient (LQ):** Imperial County has an LQ of 2.6, while San Diego County shows an LQ of 1.8, both indicating a strong presence of clean energy employment (U.S. Bureau of Labor Statistics, 2024). This high concentration highlights the importance of clean energy as a major economic driver, with both counties positioned for continued growth in the sector. As California advances its renewable energy goals, these regions are likely to see further job creation and investment in technologies like solar, geothermal, and energy storage, reinforcing their roles as key players in the state's clean energy transition.
- **Total Sector Employment:** The clean energy sector employs approximately 12,500 workers across both counties (U.S. Bureau of Labor Statistics, 2023), with Imperial County employing around 3,500 workers and San Diego County accounting for about 9,000 workers. In Imperial County, employment is distributed across various subsectors, including approximately 4,500 workers in solar energy, 2,000 in geothermal, and 1,000 in biogas. In San Diego County, employment is driven primarily

by solar energy, followed by energy storage and other renewable technologies (U.S. Bureau of Labor Statistics, 2023).

- **Median Annual Wage:** Workers in the clean energy sector earn a median annual wage of \$72,000, well above the regional average for other industries (U.S. Bureau of Labor Statistics, 2023). Furthermore, wages vary by subsector, with solar energy technicians earning an average of \$68,000, while roles in energy systems engineering can command salaries upwards of \$90,000 (U.S. Bureau of Labor Statistics, 2023). These figures underscore the sector's potential for providing high-quality jobs.
- **Workforce Development and Education:** Educational institutions in the region, such as Imperial Valley College and University of California San Diego, are expanding clean energy programs, focusing on solar technology, energy systems engineering, and biofuel research to support future workforce needs. These programs are designed to equip students with the skills necessary to thrive in the growing clean energy job market, including by providing certifications in solar panel installation and training in energy efficiency audits and renewable energy management.

A non-exhaustive list of clean energy technologies primed for growth in the region includes:

Established technologies in the region:

- **Solar:** Large-scale solar projects in Imperial County, supported by the region's high solar irradiance, and San Diego County's innovations in solar energy storage, are both projected to grow 20% over the next decade (Qcells, 2022).

Emerging technologies:

- **Geothermal:** Imperial County's over 1000MW potential geothermal capacity (GeoVision, U.S. Department of Energy, 2019) is a key driver for stable, high-wage jobs. Geothermal energy supports the local economy's shift away from agriculture.
- **Biofuels and Aviation Fuels:** Imperial County's agricultural resources make it a prime candidate for biofuel production, particularly sustainable aviation fuels (SAF). The region generates significant biomass from agriculture, including crop residues and energy crops, which serve as feedstocks for biofuels. Additionally, the Imperial Valley's abundant sunlight and warm climate facilitate algae cultivation, providing the region the potential to become a leader in algae bio-crude production. This positions the area to create jobs in plant operations and R&D, supported by advantages such as low-cost land and established water rights (Imperial Valley Economic Development Corporation, 2024).
- **Green hydrogen:** San Diego County is emerging as a hub for green hydrogen fuel cell technologies, particularly in fuel cell engineering and hydrogen system integration. This

hydrogen is produced through electrolysis (using renewable energy sources to split water into hydrogen and oxygen), ensuring a clean and sustainable process that eliminates concerns about pollution. Imperial County, with its abundant renewable resources, is well-positioned to support green hydrogen production, further enhancing the region's sustainable energy profile. It is recommended that green hydrogen be specifically allocated for hard-to-electrify applications, such as industrial processes, heavy-duty transportation, and energy storage, rather than for use in pipelines to buildings.

- **Energy Storage:** San Diego County's leadership in battery manufacturing and energy storage technology is critical for meeting grid demand. Jobs in energy systems engineering and battery storage are increasing, benefiting both counties.
- **Electric Vehicles and EV Charging Infrastructure:** The increasing adoption of electric vehicles (EVs) in the region is driving demand for comprehensive EV charging infrastructure. This shift not only supports the transition to cleaner transportation but also creates job opportunities in installation, maintenance, and manufacturing of EV-related technologies. San Diego County's initiatives to expand EV charging stations align with state goals for reducing greenhouse gas emissions and promoting sustainable urban mobility.
- **Energy Efficiency and Clean Energy Installation:** In addition to renewable energy sources, the definition of clean energy includes a strong focus on energy efficiency measures and the installation of electrified end uses. Energy efficiency refers to using less energy to achieve the same level of service or output, which can significantly reduce overall energy consumption and greenhouse gas emissions. This includes measures such as upgrading insulation, installing energy-efficient appliances, and implementing smart technologies. Clean energy installation involves deploying renewable energy technologies, such as solar panels and heat pumps, to provide sustainable energy solutions.

While biofuels and green hydrogen offer substantial growth opportunities, it is crucial to address the significant environmental concerns associated with these industries. Local advocacy groups such as Comité Cívico del Valle, Earthworks, and the San Diego Regional Clean Cities Coalition have raised issues related to environmental impacts, particularly concerning air and water quality. Key challenges include resource—especially water—scarcity, and the potential for increased emissions from biofuel and green hydrogen production. Hydrogen technologies also raise concerns, including heightened water and energy demands, safety risks associated with hydrogen handling, potential leakage, the complexities of using ammonia as a hydrogen carrier, and the environmental and logistical implications of carbon capture and storage.

To mitigate these concerns, the U.S. Department of Energy mandates the development of community benefit plans that specifically address these issues. For instance, Funding Opportunity Announcement DE-FOA-0003213 provides funding for research, development, demonstration, and deployment activities related to affordable hydrogen production, transport, storage, and utilization. This funding emphasizes that hydrogen technologies can offer significant benefits, such as improved resiliency, reduced emissions, and economic prosperity. Implementing rigorous environmental safeguards and maintaining ongoing community engagement will be essential in effectively managing any risks. With proper safeguards and mitigations in place, biofuels and green hydrogen can play a key role in advancing California's clean energy transition while ensuring the protection of local communities.

While biofuels and green hydrogen offer substantial growth opportunities, it is crucial to address the significant environmental concerns associated with these industries.

Local Market Signals

Imperial and San Diego Counties are positioned to lead California's clean energy transition, with strong market signals driving this growth. The clean energy sector is projected to grow by 15-20% over the next decade, creating significant opportunities for job creation and investment in the region. San Diego is a national hub for clean technology R&D, supported by University of California San Diego and the Southern California Energy Innovation Network, with market projections showing growth in clean tech over the next decade, particularly in energy storage and electric vehicle infrastructure.

Recent surveys such as the California Clean Energy Survey (2023) indicate that residents in both Imperial County and San Diego County generally support clean energy initiatives, especially in underserved areas that stand to benefit from cleaner air and improved energy resilience. However, concerns have been raised by community members including Tribal representatives regarding land use and environmental impacts associated with clean energy projects. These concerns were highlighted during public forums held by local advocacy groups, including Comité Cívico del Valle and the San Diego Regional Clean Cities Coalition.

While some community members remain apprehensive, others, including industry leaders, have expressed confidence due to the potential implementation of sustainable practices and the job creation opportunities these projects present, as indicated in feedback gathered during community engagement sessions and stakeholder meetings. Continuous community engagement and responsible development practices will be essential in addressing these concerns, ensuring both economic growth and environmental stewardship as California moves forward with its clean energy goals.

Value Chain and Infrastructure

Imperial County and San Diego County are well-positioned to drive California's renewable energy expansion through complementary infrastructure and value chain connectivity. Imperial County boasts vast undeveloped land and established geothermal and solar farms, making it a relevant site for renewable energy generation. With access to major highways like Interstate 8 and proximity to the U.S.-Mexico border as part of the CaliBaja Bi-National Mega-Region, the county can efficiently facilitate the transport of energy technologies and materials. Additionally, key transmission lines link Imperial County to California's energy grid, enhancing clean energy distribution, while the region's low operational costs and streamlined permitting processes make it an attractive destination for energy investments.

San Diego County supports this with its Port of San Diego, a hub for international trade in energy components, and its strong highway network, which bolsters cross-border collaboration with Mexico. San Diego County's proximity to innovation hubs and clean tech companies further strengthens the region's ability to integrate advanced energy storage and smart grid technologies, facilitating efficient renewable energy distribution.

To fully unlock the potential of these regions, future infrastructure investments, strategic water resource management, and optimized land use planning are critical. Key priorities include:

- **Expand transmission lines in Imperial County** to support increased renewable energy production and strengthen connections to the state grid.
- **Develop energy storage facilities** to ensure a reliable energy supply during peak demand periods.
- **Implement grid modernization and smart grid technologies in San Diego** to efficiently manage growing energy capacity.
- **Enhance cross-border infrastructure** to facilitate seamless trade and collaboration with Mexicali's manufacturing sector.
- **Upgrade the Port of San Diego** to support trade flow and economic growth in energy-related sectors.
- **Invest in clean tech manufacturing infrastructure** across both counties to boost growth in solar panel production, battery storage systems, and energy-efficient technologies.
- **Implement water resource management** and conservation practices to balance agricultural, urban, and environmental needs (for more details, please refer to the Water section).

- **Reassess land use optimization** to balance industrial development with the preservation of agricultural lands and natural habitats, ensuring sustainable growth and minimizing conflicts.

Innovation Ecosystems

The innovation ecosystems of Imperial and San Diego Counties complement each other. San Diego County's leadership in clean tech innovation, backed by renowned research institutions and incubators, plays a vital role in advancing frontier energy technologies such as green hydrogen and sustainable aviation fuels. At the same time, Imperial County is increasingly positioned to contribute to research and development (R&D) in energy-related technologies. Recently, an education consortium that includes University of California Riverside and San Diego State University received a planning grant from the U.S. Economic Development Administration to prepare a competitive application for a Clean Technology Hub designation in Imperial County. With its lower operational costs, growing R&D capabilities, and abundant renewable energy resources, Imperial County provides an ideal environment for scaling these innovations to market.

Regional Assets

The Imperial County and San Diego regions offer notable renewable energy potential, driven by their access to abundant solar and wind resources, alongside strategic infrastructure. Both regions benefit from their proximity to the U.S.-Mexico border, creating opportunities for cross-border collaboration and trade in energy technologies.

Imperial County is uniquely positioned with some of the highest solar irradiance in the U.S. With approximately 300 sunny days per year, it boasts an irradiation averaging over 6.5 kWh/m²/day (National Renewable Energy Laboratory, National Solar Radiation Database, 2022). The region's geothermal resources near the Salton Sea add to its diversified energy portfolio, capable of generating over 2,900 megawatts of geothermal energy. Vast open land and access to existing transmission lines further support its role as a hub for renewable energy expansion.

San Diego boasts a dynamic clean energy ecosystem with over 40 energy startups, 925 clean tech companies, and significant natural resources, including high solar irradiance and wind potential (California Energy Commission, 2021). The region's geothermal and offshore wind resources further diversify its energy portfolio. Key initiatives like the Southern California Energy Innovation Network and San Diego Gas & Electric's Energy Innovation Center foster collaboration and provide support for startups, advancing energy technologies. The area hosts 48,000 energy storage projects with 1,452 MW capacity, including major projects like the 400 MW Applied Energy Services Corporation facility. San Diego ranks #2 nationally for solar

installations, with support from Department of Energy-funded battery recycling and fusion research at General Atomics, solidifying its leadership in clean energy innovation.

Increasing Economic Diversification and Resilience

The clean energy sector can be a key pillar in diversifying the economies of Imperial and San Diego Counties, reducing their reliance on industries like tourism and agriculture. In Imperial County, where agriculture has historically dominated and faces increasing challenges from water scarcity and fluctuating market demands, the growth of renewable energy projects—such as large-scale solar farms, geothermal plants, and manufacturing related to clean tech initiatives—provides an alternative economic base. For example, the Salton Sea Lithium Valley project diversifies the region's economy by introducing battery manufacturing, which supports the growing electric vehicle (EV) market. This shift reduces the county's dependence on agriculture, offering high-wage, year-round employment opportunities that are less affected by environmental or market volatility.

In San Diego County, diversification comes through investments in clean tech innovation, including energy storage and smart grid systems. San Diego County's clean tech companies and incubators like the Southern California Energy Innovation Network foster resilience by attracting startups and facilitating the development of technologies such as advanced energy storage, which aims to ensure the region's energy security during peak demand. This diversification strengthens the local economy by embedding long-term, high-skilled jobs in research, development, and technology deployment, reducing reliance on tourism and seasonal industries. Additionally, both counties' investments in clean energy infrastructure help mitigate the economic risks associated with climate change, such as extreme weather events, by providing stable energy solutions that enhance the resilience of local economies and energy systems.

Alignment with Job Quality and Access, Equity, and Climate

Job Quality and Access

The clean energy sector has the potential to create high-quality, family-sustaining jobs focused on equitable access for underserved communities. Prioritizing roles with benefits like healthcare and retirement plans, this strategy aims to build safe, inclusive workplaces. Jobs such as solar installers and wind turbine technicians offer competitive wages—\$26.34 and \$30.52 per hour, respectively—exceeding California's median wage of \$22.25 (U.S., Bureau of Labor Statistics, 2023). Advanced energy roles like engineers and project managers also offer strong career growth, with wages rising up to 35% within five years (California Employment Department, 2024). Job stability is highlighted, with turnover rates in the sector 15% lower than in adjacent industries (NREL, 2023).

In 2023, the California Clean Energy Job Creation Program enrolled over 2,500 trainees from underserved areas, focusing on economic revitalization in regions like Imperial County. Diversity in hiring is also improving, with 28% of new hires coming from underrepresented minority groups, up from 21% in previous years (U.S. Energy and Employment Report, 2024). Workforce gaps in high-skill roles are being addressed through expanded training and apprenticeship programs tailored to local needs.

The proposed strategies focus on retaining high-quality jobs while creating new ones by expanding clean energy projects and attracting large-scale investments in emerging technologies like green hydrogen, sustainable aviation fuels, and advanced biofuels.

However, it is essential to recognize that some clean energy technologies, including solar, geothermal, and biofuels, may not always lead to sustainable long-term jobs. Many roles in these sectors, such as solar panel installers or geothermal drilling technicians, are concentrated in the initial deployment and construction phases. Afterward, the number of workers needed for ongoing maintenance and operations significantly declines. For instance, solar projects typically see a workforce reduction after the first two years, while geothermal and biofuels face similar patterns due to their capital-intensive initial development phases (IRENA, 2023; DOE, 2024).

To address the short-term nature of some clean energy roles, these strategies emphasize diversifying the workforce into roles that support long-term growth, such as grid modernization, energy storage system operations, smart grid integration, and energy efficiency retrofits. These technologies provide a more stable and sustained employment pipeline compared to construction-heavy sectors (IEA, 2024).

Equity

The energy sector could potentially offer meaningful benefits to disinvested communities in Imperial County and San Diego County, particularly through job creation and community development. In Imperial County, where unemployment rates are among the highest in the state, clean energy projects will create direct jobs in construction, maintenance, and operations, along with indirect jobs in local supply chains, including manufacturing and logistics. The transition to clean energy will also require skilled workers specializing in electrical mechanics and system maintenance to handle the repair and upkeep of emerging energy systems. This includes electricians and mechanics trained to address the unique demands of clean energy technologies, such as solar panels, battery storage, and smart grid infrastructure. San Diego will similarly benefit from energy efficiency and smart grid projects, which not only provide direct technical jobs but also support roles in logistics, transportation, and infrastructure upgrades.

Both counties can ensure that clean energy growth benefits disinvested communities through targeted job creation, training programs, local supply chains with small businesses, and access to affordable clean energy. Immigrants and refugees, who make up a significant portion of the labor force in these counties, represent an underutilized talent pool for clean energy roles. Targeted programs can ensure these groups have access to training and employment opportunities. Proposed strategies also focus on engaging other disinvested communities, including agricultural workers in Imperial County and low-income neighborhoods in San Diego County. In Imperial County, retraining programs can prioritize transitioning agricultural workers into renewable energy roles through partnerships with community-based organizations and local colleges. Outreach efforts in disinvested areas of San Diego County can connect residents to opportunities in emerging energy technologies through various initiatives, such as workshops, job fairs, and collaborations with local nonprofits.

The proposed strategies aim to ensure local communities benefit directly from the clean energy transition by allocating energy resources locally and supporting distributed generation. Renewable energy companies, in partnership with local governments, can allocate a portion of energy production to reduce costs for underserved areas and enhance local energy resilience. Infrastructure investments—such as transmission lines, storage facilities, and microgrids—can prioritize low-income and rural areas, creating jobs and equitable access to clean energy.

To further support local distributed generation, incentives can encourage residents and small businesses to install solar panels and energy storage systems, along with community solar options for those without suitable rooftops. Collaborations with utilities will integrate locally generated clean energy into the grid, improving reliability for disinvested communities. Immigrant and refugee workers can be included in outreach and recruitment efforts, supported by partnerships with local nonprofits and workforce development organizations. Training programs can focus on equipping local workers with the skills needed for system maintenance, repair, and installation. Educational outreach and strict environmental standards will ensure community needs and concerns are addressed.

The proposed strategies aim to ensure local communities benefit directly from the clean energy transition by allocating energy resources locally and supporting distributed generation.

Climate

The clean energy sector could play a critical role in reducing the environmental footprint of economic development and combating climate change. By transitioning to renewable energy sources such as solar, wind, and energy storage technologies, the sector could limit greenhouse gas emissions while fostering sustainable growth. In regions like Imperial County

and San Diego County, where clean energy infrastructure is expanding, these projects are directly and can continue contributing to California's goal of achieving 100% clean energy by 2045.

The proposed strategies encourage renewable energy projects to minimize land disturbance and resource consumption by prioritizing previously developed or degraded lands, with a strong emphasis on protecting Tribal lands and preserving air and soil quality. Additionally, they explore tax incentives and grants to encourage businesses to adopt practices that help protect local lands and communities beyond existing legal and regulatory requirements, such as enhancing land restoration and employing advanced emissions reduction technologies. These measures aim to drive innovation and sustainability beyond compliance obligations, creating value for local communities and ecosystems.

Collaboration with Tribal representatives is also critical to ensuring that clean energy projects respect and incorporate environmental and cultural priorities. This includes protecting cultural resources and historical sites, as well as fostering meaningful partnerships that align project goals with the needs of American Indian/Alaska Native communities. By integrating these considerations into planning and implementation, the strategies aim to ensure that projects deliver benefits equitably while honoring the region's diverse heritage.

The proposed strategies encourage renewable energy projects to minimize land disturbance and resource consumption by prioritizing previously developed or degraded lands, with a strong emphasis on protecting Tribal lands, preserving air and soil quality, and adopting practices beyond existing legal and regulatory requirements.

The proposed strategies also aim to mitigate the anticipated impacts of climate change, particularly in sectors vulnerable to extreme weather events. In Imperial County, where temperatures can exceed 110 degrees Fahrenheit during the summer, investments in clean energy infrastructure such as microgrids are projected to reduce electricity demand spikes, alleviating strain on the grid and protecting agricultural operations. San Diego County, where energy demand is expected to increase by 15% during peak heatwave months (California Energy Commission, California Energy Demand 2023-2024), can improve energy resilience through smart grid and energy storage solutions, ensuring stable access during climate-related disruptions. Special focus is placed on disinvested communities, where public health concerns like poor air quality and limited access to cooling resources are prevalent. By implementing clean energy solutions in these regions, the strategy aims to reduce exposure to harmful pollutants, directly benefiting public health in these communities.

Workforce Development

The energy sector's rapid growth necessitates a skilled workforce. The proposed strategies focus on cultivating local talent to align with the sector's evolving needs. In both Imperial County and San Diego County, partnerships among businesses, community colleges, and labor organizations will provide targeted training for roles in solar, wind, and energy storage. In Imperial County, there are several existing training programs, including high school and adult education initiatives that feature Career and Technical Education (CTE), the Imperial Valley Regional Occupation Program (IVROP), and job training programs offered by the Imperial County Workforce Development Board.

Additionally, the High Road Training Partnership has released a report on Lithium Valley, highlighting further opportunities for workforce development in emerging energy sectors. These programs can prioritize upskilling workers to fill critical positions in clean energy, supported by specific initiatives to ensure that local workers are prepared for future opportunities in advanced energy technologies.

Training and Recruitment

The proposed strategy places a strong emphasis on workforce development to equip Imperial and San Diego Counties with the skills needed to support their rapidly expanding clean energy sectors. Public-private partnerships between educational institutions like San Diego State University and Imperial Valley College, alongside energy companies, can be instrumental in creating tailored training programs. These programs can focus on geothermal plant operations, solar installation, energy system integration, biofuel processing, and battery storage technologies—all aligned with the needs of growing industries like lithium extraction at the Salton Sea and green hydrogen production in San Diego County. Hands-on training will be combined with certifications like NABCEP Solar Installer, Certified Energy Manager (CEM), and Battery Storage Specialist, and regulated by state agencies such as the Division of Apprenticeship Standards (DAS) within the California Department of Industrial Relations (DIR), ensuring that workers are fully prepared for roles in both traditional and emerging energy technologies.

Equitable Access and Economic Mobility

As mentioned in the workforce development section within locally serving industries, ensuring equitable access to training programs is central to addressing the needs of disinvested communities in both counties. Mobile training units and bilingual course modules can be deployed to rural areas and disinvested communities, removing barriers for individuals without access to traditional educational institutions. These efforts can also target immigrants and refugees, recognizing their potential to contribute to the clean energy workforce in roles such as energy data analysis, quality assurance, and technical operations with tailored training and

support. Specifically, programs can target different underrepresented groups, providing certifications in fields such as energy storage system maintenance and solar project management.

The proposed strategies prioritize job opportunities in renewable energy sectors that align with the region's strengths and are designed to support worker safety and public health. By partnering with local CBOs and workforce development agencies, the strategy targets that all residents can benefit from the region's clean energy growth regardless of their educational background or location, fostering inclusion and long-term economic resilience. This includes those with disabilities, who can benefit from accessible training environments and assistive technologies.

Retention and Advancement

Retention strategies can center on providing clear career pathways, helping workers move from entry-level roles to more specialized positions such as geothermal plant operators, energy engineers, and clean energy project managers. Programs can offer certification tracks, including Certified Renewable Energy Professional (CREP) and Project Management Professional (PMP), allowing workers to advance into leadership roles. The clean energy transition would require recruitment from a broader, more diverse talent pool, particularly in fields like energy storage management, hydrogen fuel cells, energy analytics, and grid modernization. Paid internships and apprenticeships can help build a skilled workforce while offering career growth in critical areas like smart grids, green hydrogen fuel technology, and data analytics, aiming to ensure the region is prepared for the future demands of the clean energy sector.

Addressing Future Needs

The energy sector's rapid expansion would require a highly skilled workforce to meet growing demand in areas such as solar installation, energy storage, battery manufacturing, and grid modernization. Energy sector strategies also emphasize new investments in emerging technologies, including green hydrogen production, biofuels, and sustainable aviation fuels, which are expected to drive additional workforce needs. While addressing concerns about environmental impacts, community acceptance, and the equitable distribution of economic benefits, roles in these emerging areas are projected to grow by over 20% in the next decade, particularly as Imperial County becomes a hub for green hydrogen and biofuel production. Furthermore, these technologies would require ongoing maintenance, ensuring long-term job stability across all energy sectors.

To meet future needs, the proposed strategies focus on equipping workers with specialized skills in hydrogen fuel cell technology, biofuel production, and advanced energy systems. Community colleges, technical institutes, and industry partnerships can deliver targeted

certifications. Collaboration with state workforce initiatives can ensure a steady pipeline of qualified workers for both traditional renewables and emerging sectors like green hydrogen and biofuels, supporting broader clean energy goals.

Alignment with State Strategies

Growing the clean energy sector in the region aligns closely with California's broader climate and sustainability goals. By promoting large-scale renewable energy projects like solar, wind, and geothermal, these strategies support the California Climate Scoping Plan to reduce greenhouse gas emissions 40% by 2030 and achieve carbon neutrality by 2045. Investments in clean energy infrastructure would also bolster the California Climate Adaptation Strategy by increasing energy resilience through microgrids and smart grid technologies, helping mitigate the effects of extreme weather events.

Additionally, these strategies contribute to sustainable water use under the Sustainable Groundwater Management Act (SGMA), as solar and geothermal projects in Imperial County require minimal water. The prioritization of clean energy development on previously disturbed lands aligns with California's 30x30 Initiative, ensuring environmental protection while advancing renewable energy. Furthermore, efforts to expand EV infrastructure in San Diego County can directly support the state's transportation decarbonization goals, reducing emissions from one of the state's largest polluting sectors.

Supporting Strategies

The region's energy strategies are supported by a comprehensive approach to investment, workforce development, and community engagement. By focusing on expanding current clean energy projects, attracting investments in emerging technologies, and providing equitable access to training and job opportunities, Imperial and San Diego Counties will be well-positioned to lead California's clean energy transition.

1. Strategy 1: Commit to providing clean local energy, and supporting energy resilience in disinvested communities while safeguarding against environmental and social injustice

- a. Action step 1:** Work with renewable energy companies and local governments to establish commitments ensuring that a percentage of the clean energy produced in Imperial and San Diego Counties is used to supply local locals and businesses with lower-cost electricity. For instance, as a condition for permits or government incentives, companies could be required to dedicate a percentage of their energy output to local grids. The proportion of energy provided should correspond to the economic value of the approvals and incentives received, ensuring that clean energy directly benefits disinvested communities and enhances local energy resilience.

- b. Action step 2:** Support local clean energy production by promoting distributed energy resources that enable community participation in energy generation. This includes financial incentives and streamlined permitting for residents and small businesses to install solar panels and energy storage systems, as well as community solar initiatives for those without suitable rooftops. Collaborate with utilities to integrate locally produced energy into the grid, enhancing reliability for underserved communities.
- c. Action step 3:** Invest in regional infrastructure, particularly in low-income and rural areas, to support the deployment of clean energy. This includes building the necessary transmission lines, energy storage facilities, charging stations, and microgrids that can distribute renewable energy to under-resourced neighborhoods. This investment would address the need to upskill local workers, create jobs in construction, maintenance, and operations, and ensure equitable access to clean energy.
- d. Action step 4:** Implement community engagement and impact assessments to safeguard local populations from potential environmental injustices as these industries develop. This includes ensuring, through third-party monitoring, that any new energy projects adhere to strict environmental standards and actively involve community input to address concerns related to pollution, land use, and health impacts. Support the development of community benefit agreements that ensure increased funding is equitably shared with disinvested communities, particularly those which have borne the externalized costs and environmental impacts of clean energy development. These agreements aim to go beyond mitigating harm, laying the groundwork for community-based prosperity and ensuring that the benefits of clean energy projects directly support those most affected. By prioritizing the voices of disinvested communities, the strategy aims to prevent the exacerbation of existing inequalities while promoting sustainable development.
- e. Action step 5:** Assess and plan for short-term impacts on the power grid during the construction phase of new renewable energy projects. This phase may temporarily increase demand on grid infrastructure due to construction equipment and setup processes. Implementing measures to manage this demand and ease impacts on disinvested communities will help minimize potential disruptions, ensuring that the grid remains stable while transitioning to increased local energy production.
- f. Action step 6:** Proactively address potential displacement risks associated with clean energy industry growth. Recognizing that clean energy projects may attract highly skilled professionals, creating limited opportunities for other groups, proactively encourage the implementation of measures such as affordable

housing practices, community benefit agreements, property tax assistance programs, etc., to prevent displacement of working-class residents in Imperial and San Diego Counties.

- g. Action step 7:** Incentivize projects to minimize land disturbance by using previously developed or degraded lands, focusing on protecting Tribal lands and preserving air and soil quality, and providing tax incentives and grants. Additionally, proposed incentives should support land restoration and consultations with Tribal representatives to incorporate cultural and environmental priorities into projects. These measures aim to uphold environmental standards and address community concerns regarding pollution, land use, and health impacts. To go beyond basic compliance, suggest project managers engage third-party entities to monitor and regularly report on environmental compliance, and community benefit agreements. These measures aim to uphold environmental standards, foster accountability, and address community concerns regarding pollution, land use, and health impacts.

2. Strategy 2: Invest in workforce development to prepare the region for clean energy jobs

- a. Action step 1:** Assess labor demand across both Imperial and San Diego Counties in key clean energy industries, such as solar, wind, geothermal, battery storage, and green hydrogen production. This analysis is crucial for shaping effective workforce development strategies, as it identifies the specific skills and job roles required in each county. By creating tailored labor projections, the region can ensure that training programs align with future job growth, supporting the California Energy Commission's forecast of 15-20% clean energy job growth by 2030. This proactive approach can help develop a skilled local workforce ready to meet the demands of the growing clean energy sector.
- b. Action step 2:** Incentivize projects that prioritize a defined (and agreed upon) percentage of jobs for local workers, especially those from disinvested communities, by providing preferential funding to such projects. Facilitate that the jobs they create offer long-term stability, fair wages, and opportunities for advancement beyond entry-level or temporary roles, including through collaborations with employers to create pathways to supervisory and technical positions.
- c. Action step 3:** Recognize community concerns regarding issues like the environmental impacts of green hydrogen and biofuel production. Ensure programs include the ongoing training of workers on best practices for mitigating environmental risks, and provide support for third-party monitors to ensure those practices are being consistently followed. By integrating strong

environmental safeguards such as air and water quality protections, the workforce will be better equipped to implement technologies that are both sustainable and responsive to the community's needs.

- d. **Action step 4:** As the region transitions away from natural gas, allocate funding to support workers affected by this shift. Implement programs that provide retraining opportunities for those displaced by the reduction of natural gas reliance, ensuring they can successfully transition into emerging clean energy roles.

3. Strategy 3: Expand investment and jobs in existing energy technologies in Imperial and San Diego Counties

- a. **Action step 1:** Scale investment in existing clean energy projects like solar, geothermal, and biofuels across Imperial and San Diego Counties. In Imperial County, prioritize investments in geothermal energy and biofuels, which are the most valuable sectors for the county due to their potential for local job creation and alignment with unique regional resources. Geothermal projects like those at the Salton Sea already provide energy (over 1,000 MW) and can create high-quality, stable jobs for locals. By utilizing Imperial County's agricultural capacity, biofuels are also well-positioned to generate jobs in both production and processing, particularly for disinvested communities. In San Diego County, build on the county's established clean tech ecosystem, focusing on its advanced R&D capabilities in clean energy technologies and over 925 clean tech companies. Support smaller emerging start-up companies with high growth potential by providing targeted resources to help them scale.
- b. **Action step 2:** Utilize state and federal funding sources (e.g., California Jobs First, California Energy Commission, and USDA) to de-risk energy projects in both regions. Focus on securing capital for scaling large, established energy companies in Imperial and San Diego Counties while also offering tailored support (e.g., grants, mentorship programs) to help smaller companies grow. Encourage companies benefiting from public incentives to commit to community-centered practices, such as providing quality jobs, implementing local hiring and vendor programs, and adhering to the highest environmental standards. Incorporate guardrails to ensure that public resources are used to prioritize community needs and prevent business incentives from overlooking disinvested communities' most pressing concerns. Examples of guardrails could include linking incentive disbursement to benchmarks like improved job quality (i.e., increased wages and benefits), or mandating periodic audits to ensure compliance with equity-focused goals like improving access to affordable housing or small businesses support.

- c. Action step 3:** Leverage Imperial County’s lower energy costs (30-50% below the state average) and expedited permitting process, which can reduce development timelines by up to 40%. Promote Imperial County as a cost-effective hub for large-scale energy-intensive industries like battery manufacturing and biofuels, while positioning San Diego County’s R&D capabilities as the go-to location for smaller, innovative clean energy companies to test and develop cutting-edge technologies. Promote that private capital investment be linked to broader community benefits by requiring community benefit agreements that outline specific commitments. These can include funding for local infrastructure projects or workforce training programs, mandating a percentage of investment be allocated to affordable childcare facilities or public health programs, and establishing oversight committees with community representation to monitor and enforce commitments. By combining Imperial County’s cost advantages and San Diego County’s innovation leadership, the region can create new demand for renewable energy, expanding clean energy production across both counties.
- d. Action step 4:** Encourage projects to minimize land disturbance by using previously developed or degraded lands, focusing on protecting Tribal lands and preserving air and soil quality. Provide tax incentives and grants to encourage businesses to adopt practices that protect local lands and communities. Additionally, proposed incentives should support land restoration, emissions reduction technologies, and consultations with Tribal representatives to incorporate cultural and environmental priorities into projects. These measures aim to uphold environmental standards and address community concerns regarding pollution, land use, and health impacts.

4. Strategy 4: Attract new investments to generate high-quality jobs in emerging energy technologies in Imperial and San Diego Counties

- a. Action step 1:** Focus on attracting investments in emerging technologies such as green hydrogen, sustainable aviation fuels, battery storage and advanced biofuels. Imperial County’s large undeveloped industrial lands, particularly in areas like the Southeast Port of Entry, and its geothermal infrastructure provide an ideal environment for clean energy production. San Diego County can complement this by leveraging its advanced research institutions (e.g., University of California San Diego, Scripps Institute) and clean tech incubators to innovate and test new technologies. Additionally, the strategy should include the installation of energy efficiency measures, such as heat pumps, which can enhance the overall energy sustainability of both counties. Encourage companies receiving public incentives to prioritize community-centered

practices, including by creating high-quality jobs, implementing local hiring programs, and adhering to strict environmental standards, to ensure investments benefit residents equitably.

- b. Action step 2:** Facilitate that these new investments meet best-in-class environmental standards to mitigate identified risks such as emissions, water consumption, and resource depletion. By prioritizing sustainable development practices, these projects can minimize negative impacts on local ecosystems and communities. Additionally, integrate environmental safeguards by implementing guardrails related to environmental protection (e.g., air and water quality monitoring, emissions control, and sustainable resource usage) to ensure technologies are safe and eco-friendly. Include provisions for accountability, requiring companies to engage in community benefit agreements, fund monitoring initiatives, and demonstrate tangible benefits for disinvested communities.
- c. Action step 3:** Foster collaboration between Imperial County's energy production capabilities and San Diego County's tech-forward initiatives to create a cross-county manufacturing and research pipeline, ensuring an innovative and responsible supply chain from production in Imperial County to innovation and commercialization in San Diego County.

5. Strategy 5: Leverage industry growth to drive expansion in clean tech components production and facilitate circular economy growth in Imperial and San Diego Counties

- a. Action step 1:** Expand local production of energy-efficient machinery, solar components, microgrids and battery storage systems by collaborating with clean tech manufacturers. Leverage Imperial County's low operational costs and San Diego County's innovation hubs to create manufacturing clusters that support clean energy growth (for more detail, please refer to the Manufacturing section).
- b. Action step 2:** Offer tax incentives and streamlined permitting processes to attract clean tech manufacturers to the region, ensuring they contribute to the production of essential energy components while aligning with California's sustainability goals (for more detail, please refer to the Manufacturing section). Consider incorporating conditions to receiving these incentives, such as requiring clean tech manufacturers to offer quality jobs, implementing local hiring initiatives, prioritizing local vendors who can source the required materials, and adhering to environmental standards.

- c. **Action step 3:** Implement technologies that promote the circular economy, such as advanced recycling processes, materials recovery, and the repurposing of waste materials from manufacturing into new products or energy sources.

6. Strategy 6: Position Imperial County as a leader in frontier clean energy technologies

- a. **Action step 1:** Promote Imperial County's capacity to attract energy-intensive industries such as manufacturing, battery recycling, and biofuel production.
- b. **Action step 2:** Highlight Imperial County's large tracts of affordable land (e.g., 6,000 acres available near the Salton Sea), abundant renewable energy resources, fast-tracked permitting processes, and low operational costs (significantly less expensive energy costs – up to 50% less than nearby geographies) to attract investments in biofuels and battery manufacturing.
- c. **Action step 3:** Develop a targeted marketing campaign showcasing Imperial County's existing infrastructure, proximity to Mexicali, and low-cost logistics, along with opportunities for cross-border trade and collaboration with Mexicali's manufacturing sector.

7. Strategy 7: Position San Diego County as a leader in clean energy innovation by investing in R&D, clean tech incubators, and smart grid integration, building upon existing assets

- a. **Action step 1:** Expand R&D initiatives in energy storage, renewable technologies, and microgrids through partnerships with local universities like University of California San Diego and companies specializing in clean tech.
- b. **Action step 2:** Strengthen grid resilience by investing in grid modernization projects, focusing on smart grid systems that can manage peak demand, balance renewable energy, and increase efficiency. Ensure these innovations directly contribute to San Diego County's resilience and energy security.
- c. **Action step 3:** Attract clean energy startups by offering incentives and streamlined permitting processes for developing projects in San Diego County, collaborating with incubators like the Southern California Energy Innovation Network.
- d. **Action step 4:** Leverage public-private partnerships to scale up innovations like EV infrastructure, battery storage, and energy-efficient technologies.



Manufacturing: Investing in nearshoring and innovation to drive quality jobs and position the region as a competitive manufacturing hub

Description

Manufacturing is a cross-cutting industry driving economic growth and innovation across key sectors such as agriculture, clean energy, and life sciences. It enhances value chains, fosters regional diversification, and strengthens economic resilience by aligning with nearshoring trends and California's sustainability goals.

Industry development

- **Local market signals:** Nearshoring and cross-border trade fuel growth in IC; advanced manufacturing thrives in SDC
- **Key infrastructure needs:** Development of industrial parks, expansion of transportation networks, & modernization of utilities
- **Key regional assets:** IC's logistics parks, resources, and SDC's Port, advanced manufacturing & workforce



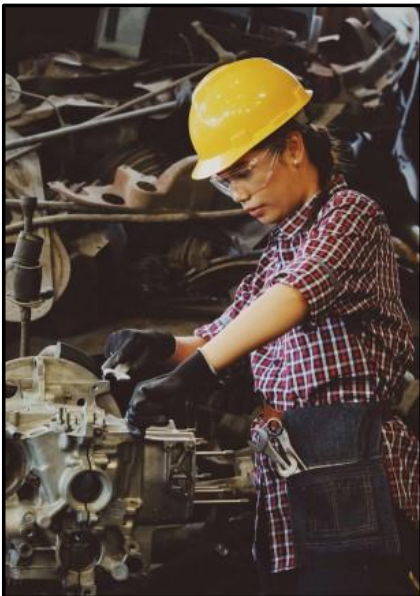
Job quality, equity & climate

- **Create** stable, family-sustaining jobs with benefits, while ensuring worker protection through labor union collaboration
- **Ensure** career growth opportunities through tailored programs
- **Reduce** emissions through energy-efficient technology, clean practices & sustainable resource usage



Workforce development

- **Partner** with colleges to develop programs
- **Provide** scholarships, apprenticeships, and bilingual trainings
- **Support** career progression through mentorships & wage-linked certifications
- **Expand** STEM education & technical training to prepare workers for emerging industries



Supporting strategies

1. **Create quality jobs:** collaborate with unions to set wage standards & ensure worker protection
2. **Develop workforce programs:** align training initiatives with advance manufacturing needs
3. **Establish industrial parks:** focus on environmentally responsible logistics and assembly hubs in IC
4. **Foster collaboration:** build synergies between IC and SDC to create complementary supply chains
5. **Strengthen value chains:** enhance local manufacturing value chains by integrating assembly and production into key industries, securing funding, and prioritizing local entrepreneurs
6. **Enhance R&D hubs:** invest in SDC's innovation ecosystem for biotech, cleantech, and aerospace advancements

Photo by Los Muertos Crew: <https://www.pexels.com/photo/solar-technician-installing-solar-panel-8853502/>

Manufacturing

Definition and Rationale

Manufacturing is a crucial, cross-cutting industry that plays an integral role in driving economic growth across key sectors such as agriculture, clean energy, life sciences, aerospace, defense, and assembly in both Imperial and San Diego Counties. Rather than operating in isolation, manufacturing seamlessly integrates into these industries, enhancing their value chains and contributing to the region's economic resilience and diversification.

Manufacturing is a crucial, cross-cutting industry that plays an integral role in driving economic growth across key sectors.

Considering this, this present chapter focuses on the vital role of manufacturing as a cross-cutting industry in both counties. Specific strategies related to agricultural manufacturing, clean energy, and life sciences are covered in their respective chapters. Here, we will concentrate on manufacturing's capabilities to create high-quality jobs and its influence on the region's overall economic resilience. It is important to recognize that manufacturing in Imperial County extends beyond agricultural applications; it encompasses a diverse range of sectors that support California's extensive trade network. Special attention is given to the aerospace and defense sectors, as well as assembly operations in Imperial County, which are closely tied to maquiladoras and the growing trend of nearshoring. Since these industries do not have standalone chapters, this section highlights their potential to reshape the region's manufacturing landscape. They are crucial in driving regional growth, strengthening supply chains, and enhancing the competitiveness of the California–Baja California (CaliBaja) border region.

The rationale for focusing on manufacturing is threefold:

- **Economic Potential:** Manufacturing plays a pivotal role in localizing production, enhancing supply chain efficiency, and leveraging regional strengths across key sectors such as aerospace, clean energy, and lithium production. Imperial County has significant potential to establish industrial parks for assembly and logistics tied to cross-border trade, given that Mexico is California's largest trade partner. With over 80% of two-way trade conducted by truck, California exported \$178.88 billion in goods in 2023 to more than 220 foreign markets, with Mexico being the largest export market at \$33.38 billion. Furthermore, California imported \$450.38 billion in products in that timeframe, with China and Mexico as the state's largest import markets (International Trade Administration, 2024). The trade composition reflects a strong demand for parts and semi-assembly products, highlighting opportunities for manufacturing growth. These trends present a unique opportunity for nearshoring and supply chain resiliency,

with some estimates forecasting the potential for a 33% increase in Mexican manufacturing exports to the U.S. over the next five years, positioning Imperial County as a critical hub for assembly and logistics (Imperial County, Comprehensive Economic Development Strategy, 2024). San Diego County, meanwhile, can drive advanced manufacturing innovation across various sectors.

- **Resilience and Diversification:** Manufacturing plays an important role in helping both Imperial County and San Diego County diversify their economies and reduce dependency on dominant industries, such as agriculture in Imperial County and services in San Diego County. By creating high-paying jobs and fostering innovation, manufacturing enables local economies to become more resilient. As an example, military and defense installations in Imperial County and adjacent Yuma County, Arizona provide opportunities for aerospace and defense manufacturing, positioning the region for additional investment and R&D growth in these industries. Meanwhile, San Diego County can leverage its advanced manufacturing sector, driving growth in clean tech, biotech, aerospace, and defense, supported by its thriving innovation ecosystem.
- **Job Multiplier Effect:** According to the Economic Policy Institute, manufacturing has a relevant multiplier effect due to its strong backward and forward linkages in the economy. For example, every 100 direct jobs in durable manufacturing generate an additional 744 indirect jobs in related sectors such as suppliers and service industries. Similarly, a \$1 million increase in demand for durable manufacturing generates 16.5 additional jobs throughout the economy (on average across the U.S.). These ripple effects make manufacturing a powerful driver of regional employment and economic activity, creating impacts on both local and forward-linked industries (Economic Policy Institute, 2019).

Manufacturing has a relevant multiplier effect due to its strong backward and forward linkages in the economy... Every 100 direct jobs in durable manufacturing generate an additional 744 indirect jobs in related sectors such as suppliers and service industries.

Under the North American Industry Classification System (NAICS), this industry falls under sector codes 31-33 (“Manufacturing”), with specific subcodes depending on the type of manufacturing (e.g., 335 for electrical equipment, appliance, and component manufacturing, 339 for miscellaneous manufacturing, etc.). While these codes serve as practical references and were used to compile industry information (as available data is often grouped under them), they may not fully capture all nuances or variations discussed in this subsection.

Industry Development

The manufacturing sector in Imperial and San Diego Counties is poised for expansion, playing a pivotal role in enhancing the region's industrial base and supporting economic diversification. Each county can harness its unique advantages: Imperial County's growth is driven by assembly and logistics operations tied to cross-border trade, while San Diego thrives on R&D. Together, these counties can leverage their manufacturing sectors to create high-quality jobs, reduce reliance on traditional industries, and position themselves as critical hubs in the broader Cali-Baja region.

- **Location Quotient (LQ):** In Imperial County, the LQ for manufacturing is approximately 0.5, reflecting a relatively low concentration of manufacturing employment compared to the national average, but highlighting room for growth (U.S. Bureau of Labor Statistics, 2023). In San Diego County, the LQ is higher at 1.1, indicating that manufacturing employment is above the national average and remains an important driver of economic activity.
- **Total Sector Employment:** Imperial County has approximately 2,300 manufacturing jobs, accounting for 4.4% of total employment in the county. San Diego County, by comparison, employs roughly 121,000 in the manufacturing sector, representing about 9% of the workforce (California Employment Development Department, 2023). In Imperial County, about 25% of manufacturing jobs are in food processing, while San Diego County has around 35% of its manufacturing workforce in biotech and pharmaceuticals, highlighting the diverse nature of the industry across both counties.
- **Median Annual Wage:** Manufacturing jobs in Imperial County offer a median annual wage of \$63,321, which is 9% higher than the County's median income of \$47,500. In San Diego County, the median wage for manufacturing workers is higher, averaging \$103,000, reflecting the region's focus on high-tech sectors like biotech and aerospace (U.S. Bureau of Labor Statistics, 2023; California Employment Development Department).
- **Workforce Development and Education:** To meet the growing demand for skilled labor, both counties should continue investing heavily in STEM education and workforce development programs. These efforts are aimed at equipping workers with the skills necessary for advanced manufacturing, including precision engineering, energy-efficient technologies, and general tech production. In San Diego County, partnerships with institutions like University of California San Diego and the San Diego Workforce Partnership are central to these efforts, while in Imperial County, initiatives like battery production in Lithium Valley are driving the need for specialized training in energy storage and logistics.

Key sectors driving manufacturing growth include:

- **Aerospace and defense:** Both counties benefit from their proximity to military and defense installations, with Imperial County also leveraging its proximity to Yuma County, Arizona for potential R&D and manufacturing investment in aerospace and defense.
- **Logistics and assembly:** Imperial County is developing industrial parks focused on assembly and logistics operations tied to maquiladoras and cross-border trade, offering growth opportunities tied to nearshoring trends.
- **Biotech:** San Diego County is a national leader in biotech manufacturing, particularly in biopharmaceutical production and medical devices, which are critical to the region's advanced manufacturing base (for further details, please refer to the Life Sciences section).
- **Clean tech:** San Diego continues to lead in clean tech manufacturing, particularly in renewable energy and energy storage technologies, while Imperial County aligns its clean energy production with industrial development (for further details, please refer to the Clean Energy section).
- **Advanced manufacturing technologies:** Both counties are well-positioned to integrate cutting-edge technologies like 3D printing, robotics, and digital twin systems. These advancements can enhance production efficiency, reduce costs, and foster innovation, creating significant opportunities for the region's manufacturing sector.

Local Market Signals

Manufacturing in Imperial and San Diego Counties is well-positioned to leverage emerging market trends, supported by local, state, and federal policies, such as the California Competes Tax Credit and the Advanced Manufacturing Sales and Use Tax Exemption. However, challenges like infrastructure limitations and competition from other states persist.

In San Diego County, advanced manufacturing benefits from an established innovation ecosystem, strong academic partnerships, and a well-established defense sector. The region's proximity to military installations and key defense contractors strengthens the aerospace and defense sub-sectors, though competition from other states such as Texas, Nevada, and Florida—which offer more favorable business incentives, fewer regulations and compliance requirements—poses a growing challenge.

Imperial County focuses on assembly and logistics, capitalizing on its strategic location in the CaliBaja region and proximity to maquiladoras and cross-border trade. In fact, over 4,000 trucks cross the California-Mexico border daily, facilitating significant trade in parts and semi-assembled products (U.S. Customs and Border Protection, 2023).

This vibrant trade environment, alongside increasing nearshoring opportunities, provides substantial potential for manufacturing growth. The sector is currently projected to grow by approximately 10-15% the next decade in Imperial County due to nearshoring and cross-border trade, while San Diego County's advanced manufacturing sector is expected to expand by 7-10%, driven by innovations in biotech, clean tech, and aerospace (Imperial County CEDS, 2024; San Diego Economic Development Corporation, 2023). However, with a Location Quotient (LQ) of 0.5, the sector remains underdeveloped compared to national standards, highlighting the need for investment in infrastructure, including water and power, and workforce development to fully capitalize on its potential.

The areas of manufacturing competitiveness closely align with other traded industries, such as clean energy and life sciences, which also emphasize the importance of innovation, skilled labor, and infrastructure development. These synergies indicate a collaborative approach to industry growth that can enhance overall regional competitiveness.

State policies focused on sustainability also align with the region's potential for manufacturing growth, particularly for clean tech and lithium processing. Federal support for aerospace and defense also bolsters San Diego County's competitive edge. Both counties have strong community support for expanding manufacturing jobs, particularly in disinvested areas, with Imperial County targeting assembly and logistics linked to nearshoring trends, and San Diego County focusing on advanced manufacturing in biotech, clean tech, and aerospace.

However, concerns remain over the quality of jobs being created, especially in sectors like assembly and logistics, where there is a risk of lower-wage or temporary positions dominating the market. Community stakeholders have voiced the need for manufacturing expansion to focus on creating high-quality, stable jobs that offer career advancement, healthcare benefits, and sustainable wages. Without proper regulation and policies that ensure equitable job creation, the sector's growth could exacerbate existing inequalities. Therefore, workforce development initiatives and collaboration with local labor unions are essential to ensure the manufacturing sector's expansion provides opportunities for local workers and fosters long-term economic resilience.

Without proper regulation and policies that ensure equitable job creation, the sector's growth could exacerbate existing inequalities... Therefore, workforce development initiatives and collaboration are essential...

Value Chain and Infrastructure

Imperial and San Diego counties both possess strategic advantages that can bolster the manufacturing value chain. Imperial County's crucial role in assembly and logistics calls for further development of industrial parks in the region, supported by investments in water and

power infrastructure, both essential for scaling operations, as well as supporting diverse manufacturing initiatives. Additionally, Imperial County is actively discussing the development of an Inland Port in collaboration with the Port of Los Angeles, as part of the Specific Plan for Lithium Valley. This initiative aims to enhance the County's capacity for logistics and supply chain management, positioning it as a key hub for manufacturing and trade.

In San Diego County, the region's advanced manufacturing sectors benefit from an established innovation ecosystem and well-connected infrastructure. The Port of San Diego and its transportation network enhance the region's role in global supply chains. Ongoing infrastructure projects, including grid modernization, port upgrades and water and water infrastructure, are critical for accommodating the increasing flow of manufacturing components and supporting international trade.

“Ongoing infrastructure projects, including grid modernization, port upgrades and water and water infrastructure, are critical for accommodating the increasing flow of manufacturing components and supporting international trade”.

Key infrastructure priorities include:

- **Industrial Park expansion** in Imperial County to strengthen assembly and logistics operations linked to nearshoring trends.
- **Water and power infrastructure improvements** to ensure sustainable manufacturing growth.
- **Transportation and grid upgrades** in San Diego County, such as the binational trolley and the San Diego-Ensenada ferry to enhance advanced manufacturing capabilities and facilitate seamless trade with Mexico.
- **Potential inland port development in Imperial County** in collaboration with the Port of Los Angeles to support logistics, reduce supply chain bottlenecks, and integrate with broader trade and manufacturing networks.

[Innovation Ecosystems](#)

Investing in R&D hubs across Imperial and San Diego Counties is a key component of the proposed strategies aimed for advancing manufacturing in sectors like aerospace, clean tech, and agtech. In San Diego County, strong partnerships with institutions like University of California San Diego drive innovation in biotech and energy technologies, while Imperial County focuses on developing hubs for clean energy and assembly. These hubs support local production, testing, and technology development, fostering high-tech manufacturing and attracting long-term investment.

To further enhance these ecosystems, integrating advanced manufacturing technologies such as 3D printing, robotics, and digital twin systems will be prioritized. These technologies enable more efficient production processes, accelerate prototyping, and support the testing and development of high-tech solutions, strengthening the region's position in competitive global markets.

Regional Assets

Imperial and San Diego counties benefit from a diverse set of regional assets that support the growth of the manufacturing sector. In San Diego County, the region's innovation ecosystem is a key asset, with strong partnerships between academic institutions like University of California San Diego, R&D centers, and the thriving biotech and clean tech clusters. Access to the Port of San Diego enhances trade, while the region's transportation networks support efficient logistics for both domestic and international markets. Additionally, San Diego County's quality of life, bolstered by local government and economic development support, attracts a highly skilled workforce, driving continued investment in high-tech manufacturing.

Imperial County, as part of the CaliBaja Bi-National Mega-Region, offers a strategic location that facilitates cross-border trade with Mexico, particularly through its well-developed transportation networks and recent border infrastructure improvements. The county's abundant and competitively priced natural resources—land, water, and energy—create capacity for new development, especially in clean energy production. The Brawley Bypass and upgrades to Brawley airport have also opened new areas for potential business development (Imperial County, Comprehensive Economic Development Strategy, 2024). Additionally, Imperial County's renewable energy production and large undeveloped land areas make it attractive for industries looking to set up R&D hubs or large-scale manufacturing facilities. Projects like the Calexico East POE Bridge Expansion and Forrester Road improvements will further boost operational efficiency and cross-border trade.

However, to enhance competitiveness and attract more manufacturing investment, both counties should prioritize incentive packages that include tax breaks, reduced permitting fees, and grants for infrastructure development. By offering tailored incentives, local governments could make these regions more appealing to businesses seeking to set up or expand their operations. These incentives also support workforce training programs, helping ensure that companies have access to a skilled labor pool aligned with industry needs.

... to enhance competitiveness and attract more manufacturing investment, both counties should prioritize incentive packages that include tax breaks, reduced permitting fees, and grants for infrastructure development...

Increasing Economic Diversification and Resilience

The manufacturing sector in Imperial and San Diego counties presents opportunities for economic diversification and resilience by reducing reliance on seasonal industries such as agriculture and service-based sectors. Expanding local manufacturing creates a more stable, year-round economy capable of withstanding external shocks like global supply chain disruptions or market fluctuations. This shift to high-paying, stable jobs in manufacturing not only strengthens the local economy but also mitigates the risks of dependency on single industries.

In Imperial County, the growth of assembly and logistics operations, particularly those linked to maquiladoras and cross-border trade, enhances the region's integration into global supply chains. This development provides a consistent flow of goods and materials, helping the region—and country—weather disruptions like those seen during the COVID-19 pandemic. San Diego County, with its focus on advanced manufacturing, further bolsters regional resilience by localizing production, ensuring quicker access to critical components, and minimizing dependence on international suppliers. Additionally, the job multiplier effect mentioned above reinforces economic stability across the region, fostering job creation and supporting overall growth.

Both counties are also investing heavily in R&D hubs and innovation ecosystems, which drive technological advancements in high-value industries. These initiatives create resilient manufacturing clusters capable of adapting to changing market demands. In Imperial County, the growth of aerospace-related manufacturing further diversifies the economy, reducing its reliance on agriculture and positioning the region for sustained long-term growth.

By integrating supply chains, creating high-quality jobs, and fostering local production, manufacturing plays a vital role in building economic resilience, ensuring that Imperial and San Diego Counties are well-positioned for sustainable future growth.

Alignment with Job Quality and Access, Equity, and Climate

Job Quality and Access

The manufacturing sector in Imperial and San Diego Counties offers a valuable opportunity to create high-quality, stable jobs, addressing local economic challenges and providing an alternative to seasonal, low-wage employment, particularly in industries like agriculture. While concerns about wage levels and job security in manufacturing remain—especially given the national trend of declining unionization and lower average wages—these strategies aim to raise job standards across the region. Workforce development programs can be essential in closing the skills gap and improving job quality in both counties. Data from the San Diego-Imperial Community Colleges shows that 62% of graduates from advanced manufacturing

programs secured employment within a year of completing their education, reflecting strong demand for skilled workers in the area (Palomar College, 2023). However, employers still face challenges in recruiting qualified candidates for specialized roles, such as computer numerically controlled (CNC) machine tool programmers, mechanical engineers, and machinists.

...While concerns about wage levels and job security in manufacturing remain—especially given the national trend of declining unionization and lower average wages—these strategies aim to raise job standards across the region...

To address these gaps, partnerships with local educational institutions, such as the San Diego Community College District and University of California San Diego, can create tailored training programs focused on advanced manufacturing. In parallel, employers can invest additional resources in training their workforce, providing clear pathways for career progression from entry-level positions to specialized technical roles. This approach prioritizes that workers advance into higher-paying positions over time. The retraining and upskilling programs should also be culturally inclusive, with bilingual training options to ensure access for underrepresented communities (for more details, refer to the Workforce Development section).

By emphasizing stable, high-quality jobs with clear advancement opportunities, the manufacturing sector can offer more equitable access to employment that provides both financial security and long-term career potential. Many manufacturing roles, especially in assembly and logistics, have relatively accessible learning curves, making them attractive alternatives to agriculture for local workers. These positions offer faster transitions into stable employment, with opportunities for progression into higher-paying, year-round roles. Moreover, manufacturing jobs are generally less physically demanding than agricultural labor, providing a more sustainable option for workers seeking long-term career paths.

Employers are also expected to invest in training programs that support career growth from entry-level to specialized roles, ensuring workers can transition from low-barrier positions to those offering higher pay and greater stability. By providing competitive wages, clear career advancement pathways, and accessible entry points, the manufacturing sector will enhance economic resilience in both Imperial and San Diego Counties, expanding access to stable, year-round employment.

Equity

Manufacturing has the potential to drive equity in Imperial and San Diego Counties, especially for disinvested communities, including American Indian/Alaska Native groups. Historically a major employer for those with limited education or language skills, manufacturing offers

accessible, stable, higher-paying jobs. Community members have highlighted manufacturing as a promising career path due to its growth opportunities, though these pathways and advancement prospects often need better communication to reach and inform local residents.

The proposed strategies emphasize inclusive recruitment and tailored workforce development. They suggest partnering with community organizations and local workforce boards to provide culturally sensitive training. Career pathways in high-growth sectors like clean tech and logistics can connect underrepresented groups to quality jobs. Successful models from other regions, like Massachusetts' Workforce Training Fund and Detroit's Manufacturing Renaissance, show how targeted training can increase minority representation in advanced manufacturing (Massachusetts Clean Energy Center, 2023; World Economic Forum, 2023).

In Imperial and San Diego Counties, the strategies aim to reduce barriers like limited training access and lack of transportation. Scholarships, mentorships, and apprenticeships, along with cross-border workforce initiatives, will further support equitable access to manufacturing jobs.

Beyond employment, manufacturing growth benefits local businesses, enabling small firms in disinvested communities to secure contracts with larger manufacturers, fostering a ripple effect of economic stability. These efforts aim to make manufacturing a vehicle for social progress, bringing long-term benefits to vulnerable communities and contributing to a more equitable regional economy.

Climate

The manufacturing sector in Imperial and San Diego Counties presents an opportunity to contribute positively to California's climate goals, though its environmental impact, particularly in relation to emissions and resource consumption, remains a concern. Manufacturing activities account for approximately 21% of California's total greenhouse gas (GHG) emissions, with industries such as petroleum refining, cement production, and metal processing being major contributors to these emissions due to their energy-intensive processes (California Air Resources Board [CARB], 2023).

Statewide data from CARB underscores the significant environmental footprint of manufacturing and provides context for understanding the broader challenges both Imperial and San Diego Counties face as they expand their industrial activities. In San Diego County, facilities like Miramar Metal Processing and Premier Metal Processing Inc. engage in metal processing activities, and the proposed Warehouse C project by Mitsubishi Cement Corporation includes plans for a bulk cement warehouse and loading facility, indicating future cement-related operations in the region. While specific data on petroleum refining and cement

production in Imperial County is limited, the CARB Board for Community Air Protection Program identifies emissions sources in both counties, including those tied to industrial activities (California Air Resources Board [CARB], 2023). This highlights the need for targeted emissions reduction strategies based on regional inventories as the sector is responsible for a substantial portion of the state’s overall emissions, underscoring the need for concerted efforts to reduce their environmental footprint.

The proposed strategies prioritize cleaner technologies and sustainable practices, with a focus on clean tech manufacturing and renewable energy production. In particular, investments in energy-efficient machinery, electric and hybrid technologies, and the adoption of circular economy principles—such as minimizing waste and promoting recycling—are critical for mitigating the environmental impact of manufacturing in both counties. These efforts align closely with California’s broader climate targets, including its goal of achieving 100% clean energy by 2045.

In both counties, there are already notable efforts underway that support these initiatives. San Diego has established itself as a leader in clean tech, with the Port of San Diego playing a critical role in facilitating international trade for energy components. Additionally, San Diego Gas & Electric, along with Community Choice Aggregators such as San Diego Community Power and the Clean Energy Alliance, and Regional Energy Networks like the San Diego Regional Energy Network and SoCal Regional Energy Network, have been actively involved in grid modernization and clean energy integration. Similarly, Imperial County’s clean energy production, particularly in solar and geothermal power, offers a foundation to expand sustainable manufacturing practices.

Public health concerns, particularly in vulnerable communities, have also driven efforts to reduce the sector’s impact on air and water quality. For instance, in Imperial County, where residents have been disproportionately affected by industrial pollution, transitioning to cleaner manufacturing processes is seen as essential. These efforts can include adopting technologies that minimize emissions, improving water recycling, and mitigating industrial runoff, all of which are crucial to safeguarding both the environment and community well-being.

These examples show how through local investments in sustainable manufacturing practices and continuous alignment with California’s aggressive clean energy goals, the manufacturing sector in Imperial and San Diego Counties can achieve a balanced approach between economic development and environmental responsibility.

Workforce Development

The manufacturing sector in Imperial and San Diego Counties offers an opportunity to enhance workforce development, aligning local talent with the growing needs of manufacturing

industries. As these industries expand, particularly with nearshoring trends, the growth of clean energy, and technologies such as blockchain and AI, local workforce training programs need to equip residents with the necessary skills to access high-paying, stable jobs. Collaborations between community colleges, technical schools, high school CTE programs and industry stakeholders are essential for creating targeted training pathways that address the unique demands of advanced manufacturing. Additionally, both counties should prioritize efforts to ensure equitable access to these opportunities, focusing on disinvested communities to ensure broad-based economic mobility.

This subsection explores general workforce development strategies along with those tailored to the aerospace, defense, and assembly sectors. Specific strategies for clean tech, biotech, and agriculture manufacturing are addressed in their respective subsections.

Training and Recruitment

Training and recruitment efforts in Imperial and San Diego Counties are being enhanced to address the specific demands of advanced manufacturing. In aerospace and defense, partnerships with institutions like the San Diego Community College District (SDCCD) and University of California San Diego are expanding workforce programs that focus on CNC machining, robotics, and precision manufacturing—critical skills for these industries. Imperial County, through Imperial Valley College, has introduced tailored programs for logistics and energy storage aligning with the region’s clean energy and industrial expansion (SDCCD, Career Education Programs, 2024).

However, the capacity of existing training courses may not be sufficient to meet the growing demand for skilled workers. Efforts to ensure equitable access target disinvested communities, including rural, low-income, Latino/a, and American Indian/Alaska Native populations. Programs like Imperial County’s "Career Pathways" and San Diego County’s "Pathways to Manufacturing" provide hands-on training and certifications, offering entry points into high-paying roles in assembly, logistics, and manufacturing (San Diego Workforce Partnership, 2024). These initiatives focus on reaching disinvested communities through partnerships with local workforce boards, community organizations, and employers, offering bilingual training, apprenticeships, and job fairs to bridge skills gaps.

Imperial County’s "Logistics Academy" and similar programs in San Diego County are directly aligned with assembly and logistics needs tied to maquiladora operations and cross-border trade, ensuring that the region’s workforce is prepared for expanding opportunities in supply chains and clean energy. Steps must be taken to enhance the capacity of these programs to better serve the increasing number of participants and meet industry needs. The proposed strategies seek to expand these efforts by creating collaborative programs between academic

institutions and industry players, to ensure that recruitment efforts align with the growing needs of high-tech manufacturing.

Equitable Access and Economic Mobility

The manufacturing sector in Imperial and San Diego Counties has the potential to advance equitable access and promote economic mobility. These industries can provide stable, higher-paying jobs for underrepresented communities, helping to address economic disparities faced by historically disinvested groups such as Latino/a, American Indian/Alaska Native, and low-income populations.

To address these disparities, these strategies focus on expanding access to training and employment by partnering with local educational institutions and community organizations. Programs like Imperial County's Logistics Academy and San Diego County's Pathways to Manufacturing are designed to bring hands-on training and certifications to disinvested communities. These initiatives help eliminate barriers such as language, cost, and access to skills training, enabling individuals to move into higher-paying roles within assembly and logistics. Immigrants bring valuable experience from their countries of origin, often having already developed technical skills or manufacturing expertise that can be adapted to local industries. Tailored training programs that recognize and build upon these skills, supported by bilingual instruction, allow immigrants to excel in roles like quality assurance, assembly line operations, and logistics management—helping to address labor shortages in the region.

Moreover, the proposed strategies include provisions to protect workers' rights by promoting inclusive recruitment efforts and ensuring the offer of benefits, better wages, and comprehensive training in both English and Spanish, both in schools and on the job. For refugees and immigrants, targeted support like credential recognition and access to childcare can address barriers to entry, enabling them to thrive in a sector that demands flexibility and problem-solving. This is essential to address ongoing workers' rights violations that originated before the pandemic. By collaborating with employers and technical schools, these initiatives ensure that disinvested communities profit from the growth of the sector.

This focus on equitable access can foster long-term economic mobility, allowing individuals to transition from entry-level jobs to more specialized, higher-paying roles, driven by increasing demand for skills in CNC machining, robotics, and project management. Additionally, people with disabilities can bring unique strengths to specialized roles. With proper accommodations, including assistive devices and inclusive training environments, they can contribute effectively to a more diverse and innovative workforce. By promoting such efforts, these strategies can encourage businesses and educational institutions to commit to promoting inclusion, ultimately making a broader positive impact on the regional workforce and economy.

Retention and Advancement

The manufacturing sector in Imperial and San Diego Counties offers opportunities for career growth and employee retention. For example, in aerospace, workers who start in entry-level roles in component assembly or quality control can advance into more specialized positions such as systems engineers or aerospace technicians with the right training and certifications. As mentioned above, programs like San Diego County's Aerospace Engineering Career Pathways initiative provide structured training designed to help workers progress from basic assembly roles into advanced aerospace positions.

Similarly, in logistics and assembly operations tied to cross-border trade, employees who enter the workforce as material handlers or logistics coordinators can transition into supply chain management or operations leadership roles as they gain experience and participate in upskilling programs.

The proposed strategies aim to support retention and advancement through a focus on mentorship programs, continuing education, and certification-linked wage increases, and to support employers to incentivize investment in workforce training. These efforts encourage workers to pursue ongoing professional development and growth within the manufacturing sector.

By fostering an environment where employees can advance through skill development and where career progression is tied to competitive wages and leadership opportunities, these programs can boost retention in manufacturing industries. Ensuring that workers, particularly from disinvested communities, have a clear path to upward mobility helps build a stable, resilient workforce, positioning the region's manufacturing sector for sustained growth.

Additionally, recognizing that some of these jobs bring inherent risks, the proposed strategies should incorporate robust training programs focused on hazard recognition and management, alongside the implementation of stringent safety protocols. By prioritizing these security measures, the sector can create a safer working environment while building a skilled workforce.

Addressing Future Needs

The manufacturing sector in both Imperial and San Diego Counties is positioned for growth, driven by the expansion of aerospace, clean energy, and advanced manufacturing industries. However, this rapid development brings challenges, particularly for Imperial County, where the manufacturing sector is relatively small, employing only 4.4% of the workforce. As the sector scales up it will be essential to address workforce readiness, infrastructure gaps, and industry adaptation to new technologies.

In Imperial County, adapting to the demands of a growing manufacturing sector will require an increase in skilled labor to meet the needs. Workforce development programs should expand their capacity, focusing on STEM education and technical training in collaboration with Imperial Valley College and local high schools. These programs should also emphasize energy-efficient manufacturing, automated processes, and supply chain management to prepare workers for the region's emerging industries.

As the manufacturing sector grows in both counties, strategic planning and coordination between local governments, educational institutions, and industry leaders will be crucial to ensuring that the region remains competitive, responsive to market demands, and capable of providing high-quality jobs that fuel economic resilience.

Alignment with State Strategies

The manufacturing sector in Imperial and San Diego counties aligns closely with several key California state strategies. Efforts to decarbonize transportation and reduce greenhouse gas emissions in clean tech manufacturing and advanced vehicle components production directly support the goals of the California Climate Adaptation Strategy and the Climate Scoping Plan. Both counties can contribute to clean energy expansion, particularly through the production of solar technologies, energy storage systems, and electric vehicle components. Additionally, manufacturing's shift toward energy-efficient technologies can help reduce emissions, aligning with state efforts to lower the carbon footprint of industrial activities. The sector's growth in renewable energy technologies, such as those involved in battery production and green hydrogen fuel, would reinforce the state's commitment to clean energy by 2045.

Moreover, Imperial County's focus on sustainable water management through initiatives like water recycling systems aligns with the Sustainable Groundwater Management Act, ensuring that its industrial expansion remains water-efficient and compliant with state guidelines. By also supporting circular economy practices and minimizing land use impacts, the manufacturing sector contributes to the California 30x30 Initiative, which aims to conserve 30% of the state's land and waters by 2030. This alignment aims to keep the sector's growth environmentally responsible while promoting economic resilience in the region.

Supporting Strategies

- 1. Strategy 1: Ensure high-quality, inclusive, and safe jobs with clear career pathways are created as manufacturing grows**
 - a. Action step 1:** Work with employers and/or labor unions to establish wage standards and ensure all new assembly jobs include healthcare, retirement plans, and paid leave, creating high-quality employment opportunities that attract and retain a skilled workforce while improving economic stability and worker well-being.

- b. Action step 2:** Incentivize projects that prioritize a defined (and agreed upon) percentage of jobs for local workers, especially those from disinvested communities, by providing preferential funding to such projects. Aim to ensure the jobs they create offer long-term stability, fair wages, and opportunities for advancement beyond entry-level or temporary roles, including through collaborations with employers to create pathways to supervisory and technical positions.
- c. Action step 3:** Implement comprehensive protections for workers' rights and safety within the growing assembly manufacturing sector. Strengthen oversight mechanisms to monitor and enforce workplace safety standards, particularly for high-risk activities, to protect workers from potential hazards associated with the industry. Introduce clear accountability measures, including penalties and sanctions for companies that fail to meet these standards, ensuring that companies are held responsible for upholding workers' rights and safety.
- d. Action step 4:** Partner with local educational institutions to create stackable credential programs for assembly workers, allowing them to progress from entry-level roles to supervisory, technical, or managerial positions. Offer flexible entry points, allowing individuals with less than two years of college education to access and benefit from credentialing opportunities to facilitate upward mobility and long-term career development opportunities in the sector.
- e. Action step 5:** Encourage companies to adopt apprenticeship programs, allowing workers to earn money while learning practical skills, facilitating access to higher-wage roles and specialized positions in the future.

2. Strategy 2: Collaborate with colleges and businesses to create workforce training programs aligned with advanced manufacturing needs in high-tech sectors in San Diego County

- a. Action step 1:** Partner with San Diego Community College District and industry players to design programs tailored to the needs of high-tech manufacturing.
- b. Action step 2:** Provide incentives for businesses to offer apprenticeships in collaboration with the San Diego Workforce Partnership.
- c. Action step 3:** Encourage the implementation of inclusive recruitment programs targeting underrepresented groups, ensuring that local educational institutions and businesses are committed to expanding access for disinvested populations.
- d. Action step 4:** Encourage employers to invest in workforce training programs to ensure clear pathways for career advancement, from entry-level positions to specialized roles.

3. Strategy 3: Establish environmentally responsible industrial parks in underutilized areas to support assembly, logistics, and manufacturing in Imperial County

- a. Action step 1:** Continue utilizing underutilized areas (e.g., low-productivity agricultural areas) near the Salton Sea and Mexicali for industrial development, leveraging available land and proximity to transportation networks. These regions offer competitive land costs and access to renewable energy sources, positioning them for growth in different industries (e.g., aerospace and defense, clean tech, maquiladoras, etc.).
- b. Action step 2:** Form a task force with the Imperial Irrigation District, renewable energy developers, and private investors to ensure water and power connectivity in industrial parks. This aims to ensure that utilities are available to scale the sector, as water access remains a key barrier, especially in areas like the Salton Sea, and addressing this up front will support faster facility development and attract larger investments.
- c. Action step 3:** Collaborate with logistics companies and warehousing firms to integrate efficient transportation routes, supporting cross-border trade. Nearshoring trends are boosting demand for assembly and logistics, and by strengthening ties with Mexicali's Maquiladora sector—worth over \$30 billion annually—Imperial County can position itself as a vital link in the supply chain.
- d. Action step 4:** Develop targeted incentive packages for businesses locating in these industrial parks, including tax breaks, grant funding for infrastructure improvements, and workforce training subsidies. These incentives can make Imperial County more attractive to new investors and help existing companies expand their operations. Offering financial incentives tailored to the needs of the logistics and manufacturing industries can accelerate growth in the sector, especially as companies seek cost-effective nearshoring options.
- e. Action step 5:** Implement stringent environmental protections and regulatory measures to safeguard nearby underinvested communities from pollution and other environmental impacts. Encourage all industrial parks to adhere to strict air, water, and soil quality standards, with regular monitoring to ensure compliance. Establish buffer zones and green infrastructure around industrial sites to minimize pollution spread and reduce health risks to surrounding communities. Additionally, involve community representatives in the planning and oversight processes to ensure transparency and responsiveness to local concerns. These protections will help balance economic development with the health and well-being of nearby residents.

4. Strategy 4: Foster a collaborative manufacturing ecosystem, leveraging synergies between Imperial County and San Diego County

- a. **Action step 1:** Facilitate partnerships between Imperial and San Diego Counties' advanced manufacturing-dependent sectors to form complementary supply chains.
- b. **Action step 2:** Set up joint projects that leverage both counties' capabilities in manufacturing. Nearshoring trends offer a unique opportunity to attract manufacturers seeking to reduce supply chain risks by establishing facilities within the region.
- c. **Action step 3:** Encourage cross-county knowledge sharing and technology transfer to improve production efficiency. This can include joint R&D initiatives to streamline advanced manufacturing processes, enhance technological development, and tackle regulatory barriers in the two regions.

5. Strategy 5: Strengthen value chains by encouraging value-added products for Imperial County's manufacturing related sectors

- a. **Action step 1:** Collaborate with institutions like the California Energy Commission and USDA to fund manufacturing projects in promising sectors (e.g., clean tech, agtech, aerospace, etc.), reinforcing regional value chains.
- b. **Action step 2:** Establish partnerships with local producers to integrate manufacturing or assembly, focusing on adding value to clean energy and aerospace supply chains, ensuring long-term regional competitiveness.
- c. **Action step 3:** Seek state and federal funding to further de-risk private investment, with a strong focus on encouraging and supporting local entrepreneurs. Prioritize local business owners starting or expanding manufacturing facilities in the industrial park, targeting that the benefits of economic development remain within the community rather than solely benefiting outside businesses.

6. Strategy 6: Develop R&D hubs for advanced manufacturing enhancing San Diego County's innovation ecosystem

- a. **Action step 1:** Partner with institutions such as University of California San Diego, Scripps Institute, and the San Diego Military Complex to establish dedicated R&D hubs in prioritized sectors (e.g., biotech, clean tech, aerospace and defense, etc.).
- b. **Action step 2:** Launch public-private partnerships to fund pilot projects and innovation in advanced manufacturing. These partnerships should aim to further the development of crucial components for aerospace, biotech and clean tech.

- c. Action step 3:** Provide tax incentives for companies investing in local R&D to promote local design, production, testing, etc., encouraging further development of manufacturing technologies across industries.



Arts, Culture, Heritage & Tourism: Investing in SDC's existing arts scene to support economic diversification and safeguard regional identity

Description

This sector combines artistic production with cultural tourism to drive economic growth through creative subsectors, heritage sites, and tourism entities. The diverse ecosystem includes educators, entrepreneurs, vendors, and cultural practitioners generating artistic goods, services, and experiences that strengthen regional identity.

Industry development

- **Local market signals:** Growth in cultural districts and tourism drives investment in SDC cultural districts and centers
- **Key infrastructure needs:** Development of collaborative spaces, performance venues, and digital infrastructure to expand sector reach
- **Key regional assets:** 200+ cultural facilities, Arts District Liberty Station



Job quality, equity & climate

- **Create** stable careers with competitive wages and growth potential
- **Ensure** equitable access to resources such as funding and network support for disinvested communities
- **Reduce** environmental impact through sustainable facility management



Workforce development

- **Partner** with local cultural programs for specialized training in cultural management and digital arts
- **Provide** scholarships, apprenticeships and mentorship programs for arts in disinvested communities
- **Support** creative career progression through networking opportunities



Supporting strategies

1. **Foster creative entrepreneurship:** provide business development resources and capital access
2. **Strengthen workforce development:** create internship and apprenticeship programs and advocate for living wages and benefits
3. **Elevate community initiatives:** develop or invest in programs that support creative entrepreneurs from disinvested communities
4. **Build cross-sector partnerships:** launch collaborative initiatives including those that bring together leaders from arts, tourism, technology, education, business, and government sectors



Photo by Ikaia Pal: <https://www.pexels.com/photo/sea-beach-and-house-on-cliff-10864052/>

Arts, Culture, Heritage, and Tourism (San Diego County)

Definition and Rationale

The Arts, Culture, Heritage, and Tourism (“Arts”) sector in San Diego County is an important part of the regional economy, combining artistic production with cultural tourism to drive economic growth. This ecosystem includes creative subsectors, heritage sites, tourism entities, and a diverse creative workforce comprising educators, entrepreneurs, vendors, policymakers, and funders. Together, they generate artistic-based goods, services, and experiences that are often integrated into tourism and cultural attractions. San Diego County's identity is deeply intertwined with its arts and culture scene, showcasing a diversity of traditions across three officially designated cultural districts such as Balboa Park and Barrio Logan. As San Diego County's population grows and diversifies, the demand for expanded cultural resources will rise, emphasizing the need to address access barriers.

Justification for focusing the sector on San Diego County only

Note on sector focus on San Diego, and sector potential in Imperial County

The Arts, Culture, Heritage, and Tourism (“Arts”) has been prioritized for San Diego only, as current employment (#16th biggest industry), LQ (0.15), and current GDP (lowest tracked industry in IC) do not justify inclusion for Imperial County (U.S. Bureau of Labor Statistics, 2022). The Arts, Culture, Heritage, and Tourism (“Arts”) has been prioritized for San Diego County only, as current employment (#16th biggest industry), LQ (0.15), and current GDP (lowest tracked industry in IC) do not justify inclusion for Imperial County (U.S. Bureau of Labor Statistics, 2022). Nonetheless, the sector holds significant potential for Imperial County. Valuable opportunities exist to strengthen the sector by further developing existing assets and leveraging the region's unique natural and cultural landscapes. The Imperial Valley Desert Museum, which preserves, interprets, and celebrates the deserts of Southern California through its collections, research, and programs, serves as a key asset supporting awareness of Kumeyaay culture and artists. Additionally, natural features such as the Salton Sea, the Imperial Sand Dunes, and other desert landscapes offer potential for eco-tourism initiatives and environmental art projects focused on preservation (Imperial Valley Desert Museum, 2024; Bureau of Land Management, 2024). Imperial County can build on the learnings from San Diego County's creative ecosystem that are outlined in this section by expanding heritage preservation efforts, improving access to arts education, and fostering initiatives that

Under the North American Industry Classification System (NAICS), this industry aligns with code 71 (“Arts, Entertainment, and Recreation”). While this code serves as a practical

reference and was used to compile industry information (as available data is often categorized under it), it may not fully capture all nuances or variations within the industry.

The rationale for focusing on Arts is as follows:

- **Economic Potential:** This sector is a key driver of job creation and economic diversification. By linking arts with tourism in the proposed strategy, San Diego can attract a diverse array of visitors, increasing demand for local cultural experiences and generating revenue across multiple sectors such as hospitality and entertainment.
- **Environmental Imperative:** The sector can drive sustainability by fostering a connection to natural landscapes and historic sites. By adopting eco-friendly practices such as green tourism and responsible site management, the sector minimizes environmental impact. Additionally, the arts can raise awareness about climate change and inspire both locals and visitors to engage in environmental stewardship.
- **Equity Considerations:** The sector can address rising living costs and seek to ensure equitable access to cultural offerings. The proposed strategies promote affordable spaces and resources and can support the sector's long-term viability while fostering inclusivity in both well-known areas such as Old Town and disinvested communities seeking to develop their tourism sector.

By focusing on this integrated sector, San Diego County can maximize the social, cultural, and economic benefits of its creative assets while positioning the city as a premier destination for cultural tourism.

Industry Development

San Diego County's Arts sector plays a vital role in the regional economy, fueled by its rich cultural assets and growing demand for cultural tourism. The industry benefits from government programs aimed at fostering local arts and heritage preservation. It also benefits from private sector support. Recent trends highlight a growing interest in cultural experiences, driving investment in arts infrastructure, programming, and events. As a major employer, the sector sustains thousands of jobs while contributing to the region's identity and quality of life. Continued growth will depend on the development of arts spaces, programs, and partnerships with educational institutions, all of which are important for expanding economic opportunities and sustaining the sector's future growth.

- **Location Quotient (LQ):** San Diego County has an LQ of 1.21 for private sector arts jobs and 2.13 for local government-supported arts programs, indicating higher concentrations of employment in these areas compared to the national average (U.S. Bureau of Labor Statistics, 2022).

- **Total Sector Employment:** The sector supports approximately 42,702 jobs in San Diego County, ranking #14 by industry size (Data USA, 2022). When including broader impacts, such as indirect employment, the industry contributes over 170,000 jobs (San Diego Regional Policy and Innovation Center, 2024).
- **Median Annual Wage:** Workers in this sector earn a median annual wage of \$62,216. While relatively competitive, this wage ranks #17 among San Diego County's top industries, just above the local living wage of \$61,401 (Data USA, 2022; MIT Living Wage, 2024).
- **Workforce Development and Education:** Investment in workforce development through education and partnerships is essential for continued growth, offering opportunities in roles such as curators, arts managers, and cultural administrators. (Data USA, 2022).

However, the sector faces challenges related to equitable access, preservation, and environmental sustainability. Advocacy for preserving cultural heritage sites, maintaining public access to these spaces, and ensuring responsible development is crucial, as increased tourism and urban expansion could strain local resources and alter the cultural landscape. Concerns regarding the preservation of historical districts, environmental impacts from large-scale tourism, and the equitable distribution of funding need careful monitoring. By maintaining strong community engagement and implementing sustainable practices, San Diego can ensure that this sector grows responsibly. Proper stewardship of cultural and environmental assets will enable the sector to continue playing a key role in the region's development while safeguarding its long-term viability.

[Local Market Signals](#)

San Diego County's Arts sector is poised for growth, supported by local, state, and federal initiatives. Locally, efforts focus on expanding arts education, promoting equitable access to cultural resources, and integrating arts into public education, which helps develop a diverse cultural workforce. State programs, such as those from the California Arts Council, provide grants to support inclusion and job creation. Federally, the National Endowment for the Arts supplies additional funding, spurring investment in cultural preservation, artistic innovation, and tourism. These aligned policies ensure that San Diego County's Arts sector remains a key driver of economic development (San Diego Regional Policy and Innovation Sector, 2024). Additionally, the Arts and Economic Prosperity 6 (AEP6) study highlights the sector's national impact, revealing that in 2022, nonprofit arts organizations and their audiences generated \$151.7 billion in economic activity, supported 2.6 million jobs, and contributed \$29.1 billion in tax revenue nationwide.

Value Chain and Infrastructure Investments

Investing in collaborative spaces and infrastructure is crucial for the growth of San Diego County's Arts sector. Further developing collaborative creative hubs can connect creative professionals with industries such as media, technology, and tourism, fostering resource-sharing and innovation. Enhancements in performance venues and digital infrastructure can expand the sector's reach, supporting artists to showcase their work locally and globally, and boosting San Diego County's cultural visibility.

Innovation Ecosystems

Investments in San Diego County's Arts sector can play a pivotal role in connecting the creative ecosystem to local innovation resources, and in nurturing early-stage businesses in the creative ecosystem. Local arts and technology initiatives, such as those led by the Innovation Lab at the San Diego Central Library, which provides 3D printers and milling machines, and the San Diego Art Institute, which displays and provides resources to engage in digital, video and sound art, play a crucial role in driving sector innovation. These initiatives link artists with technology resources and encouraging partnerships (San Diego, 2024). Additionally, targeted investments in incubators and accelerators such as the Jacobs Center Business Accelerator Program—which is a pioneering low- to moderate-income and diversity-focused program—provide critical support for creative startups, offering access to funding and business training (Jacobs Center for Neighborhood Innovation, 2024). By nurturing these emerging entrepreneurs and companies, San Diego can build a more dynamic arts landscape.

Regional Assets

San Diego County's Arts sector thrives due to its extensive network of creative professionals, expansive cultural infrastructure, and comprehensive state, county, and city arts initiatives. The region is home to a highly educated and diverse workforce of independent artists, cultural practitioners, and creative entrepreneurs who drive innovation and help shape the cultural landscape. These professionals contribute significantly to the economy and community by promoting cultural practices and developing artistic products and services (San Diego Regional Policy and Innovation Center, 2024).

San Diego County benefits from a network of cultural districts, parks, and heritage sites, including the renowned Balboa Park and the Arts District Liberty Station. With over 60 city-owned cultural facilities, these venues act as vital hubs for community engagement, artistic expression, and tourism. Cultural districts such as Balboa Park, Barrio Logan Circle, and Oceanside serve as cultural epicenters, drawing both businesses and visitors, and boosting local economic vitality (San Diego Tourism Authority, 2023). The NTC Foundation oversees Arts District Liberty Station, providing affordable space for artists and cultural nonprofits (NTC Foundation, 2024). Additionally, the San Diego Symphony's Rady Shell at Jacobs Park has

become a major cultural attraction, offering world-class outdoor performances (San Diego Symphony, 2024).

San Diego County's cultural ecosystem is bolstered by key organizations and initiatives. The San Diego County Office of Economic Development and Government Affairs (EDGA) oversees the Arts and Culture Commission, led by a Creative Economy Manager who champions artistic expression and cultural diversity by supporting artist entrepreneurship, local community artists, and efforts to expand film production throughout the county. The San Diego Regional Arts and Culture Coalition advocates for increased public and private investment in the arts (San Diego Regional Arts and Culture Coalition, 2024). The Far South/Border North program exemplifies regional cooperation by supporting artists across Imperial and San Diego Counties (California Arts Council, 2023). Local initiatives like ArtReach San Diego reflect strong community values by offering programs that nurture youth creativity through visual arts and foster community connections (ArtReach San Diego, 2024).

Increasing Economic Diversification and Resilience

The Arts sector is emerging as a key driver for economic diversification, with potential for future growth. Employment projections show a 61.8% increase from 2020 to 2030, positioning the sector as a major contributor to the local economy and aligning with San Diego County's broader goals of diversification and resilience (U.S. Bureau of Labor Statistics, 2023). The sector's stability is demonstrated by its 2% growth during the 2008 financial crisis, making it relatively insulated from economic downturns (U.S. Bureau of Labor Statistics, 2022). Additionally, arts organizations act as retail anchors, drawing investment and spurring growth in surrounding businesses, further contributing to the region's economic diversification. As new cultural facilities are developed, and leadership continues to innovate, San Diego County's Arts sector is expected to attract more audiences and solidify its role as a major economic pillar.

Strategic investments in cultural planning and infrastructure will be pivotal to sustaining this growth. The San Diego Regional Policy & Innovation Center's "Creative City" plan, designed to advance arts and creativity across disinvested communities, emphasizes workforce development and industry partnerships. Ongoing projects, like the revitalization of the Horton Plaza Lyceum Theatre and the Jacobs Music Center, are expected to create job opportunities and enhance San Diego County's cultural landscape. Additionally, the tourism sector, which generated \$14 billion in visitor spending in 2023, continues to play a critical role, with Transit Occupancy Taxes serving as a vital funding source for essential city services, reinforcing the importance of arts and culture in supporting the region's broader economy (San Diego Regional Policy and Innovation Center, 2024).

Alignment with Job Quality and Access, Equity, and Climate

Job Quality and Access

The Arts sector is committed to prioritizing family-sustaining jobs that offer livable wages, healthcare, retirement benefits, and opportunities for career advancement. Initiatives such as Far South/Border North provide funding to ensure that artists receive fair compensation. This focus on job quality directly aligns with Supporting Strategy 1, which emphasizes fostering creative entrepreneurship and enhancing access to business development resources for disinvested communities. More details on Supporting Strategy 1 can be found in the Supporting Strategies section below. In tandem, the strategy must address key challenges faced by creative workers, including the high cost of living, job market gaps, and a lack of recognition for their contributions, all of which hinder sustainable careers and contribute to talent drain.

Equity

In terms of equity, the sector seeks to ensure that disinvested communities can access resources and opportunities. By partnering with local research universities, initiatives can collect data on the welfare of creative workers, encompassing their housing, anti-displacement, job security, and health needs. This research will inform cultural policy and advocacy efforts, ensuring they are grounded in the lived experiences of artists from disinvested communities. Moreover, expanding ownership of underutilized spaces for mixed-use development can empower artists to engage meaningfully with their neighborhoods. The promotion of cultural districts across San Diego County can further develop a network of creative hubs, synergistically supporting local artists and driving economic growth in disinvested areas. This consideration of equity dovetails with Supporting Strategy 2, which focuses on expanding workforce development to ensure equitable access and sustainable growth. More details on Supporting Strategy 2 can be found in the Supporting Strategies section below.

Climate

The sector is proactive in addressing climate impacts through initiatives like the Arts & Climate CA program, engaging arts organizations in reducing their environmental footprint while fostering community resilience. By participating in this initiative, cultural organizations can receive education on climate change and develop strategies for decarbonization and community activation. These efforts are vital in mitigating the effects of climate change on targeted industries and occupations while addressing public health needs, particularly in disinvested communities. In parallel, capacity-building initiatives funded by philanthropic organizations aim to connect creative workers to skills training and talent recruitment, ensuring a workforce that is well-prepared to navigate both economic and environmental

challenges. This strategic focus aligns with the Supporting Strategies by reinforcing the workforce pipeline that prepares creative professionals for future demands while advocating for policies that support livable wages, benefits, and sustainable job opportunities.

Workforce Development

The Arts sector is committed to building a strong workforce that matches skills to available jobs, promotes equitable access, and aims for sustainable career advancement. Workforce development and education remain critical to the sector's growth. While the sector offers a range of job opportunities, career advancement tends to be more challenging without specialized training or higher education. This limits upward mobility for workers in roles such as performance, arts management, and curation. Training programs and educational partnerships can help bridge these gaps by offering certifications and degree programs tailored to the sector's unique needs, enabling local workers to develop the skills necessary for higher-level positions. These initiatives can help ensure a well-trained workforce that is equipped to support the growth of San Diego County's vibrant arts and cultural economy (San Diego Creative Industry, 2024).

Training and Recruitment

The strategy can implement targeted training programs that align with the skills needed in the growing arts and cultural sectors. By collaborating with local colleges, universities, and trade schools, the sector aims to establish internship and Apprenticeship Programs. These can provide hands-on experience in areas such as cultural management, multimedia production, and digital arts, addressing skill gaps and ensuring a pipeline of talent. This aligns with Supporting Strategy 2, which emphasizes creating pathways for students into the creative industries. Tailored programs can be offered to artists and creative entrepreneurs to help them scale their operations, develop sustainable business models, and access resources for growth. This approach directly supports Supporting Strategy 1, which focuses on fostering creative entrepreneurship and empowering disinvested communities.

Equitable Access and Economic Mobility

The strategy prioritizes equitable access to opportunities for disinvested communities. By conducting outreach and research with local universities, the sector can gather data on the needs of disinvested communities. This research can inform targeted training initiatives that meet the specific requirements of disinvested communities, thus promoting equitable access. Establishing partnerships with financial institutions to offer low-interest loans and micro-grants can enhance economic mobility for artists and creative businesses led by individuals from disinvested communities.

Retention and Advancement

Retention and advancement of creative workers are critical to sustaining a vibrant creative ecosystem. Developing clear pathways for career advancement within the Arts sector, supported by mentorship and networking opportunities, can help retain talent and ensure professional growth. The strategy can also support legislative efforts to ensure that artists and creative workers have access to livable wages, healthcare, and retirement benefits, reinforcing job quality and security. This aligns with the broader goal of the Supporting Strategies to ensure high-quality jobs within the sector.

Addressing Future Needs

The strategy can prioritize continuous skill development to help the workforce adapt to evolving industry demands, with a particular focus on emerging areas such as digital content creation, technology integration, and environmental sustainability practices. This approach aims to ensure that creative professionals are equipped with the skills needed for future opportunities in the arts and culture sector. Additionally, the strategy will foster collaborations with industry leaders, including businesses and cultural organizations, to create tailored educational programs that align with real-world workforce needs. These partnerships will help bridge the gap between education and employment, ensuring that graduates are not only well-trained but also job-ready, prepared to contribute effectively to a rapidly changing creative economy.

Alignment with State Strategies

The Arts, Culture, Heritage, and Tourism sector strategy aligns with several state initiatives aimed at promoting sustainability and resilience. Artists play a pivotal role in raising awareness about climate change through their work. By leveraging artistic expression to advocate for sustainable practices and policy changes, the sector can mobilize community engagement. Furthermore, by involving museums and cultural institutions in climate action dialogues, the sector can drive community engagement and co-creation processes that highlight the importance of sustainability. This collaborative approach aligns with the overarching aim to enhance cross-disciplinary partnerships. To contribute to California's goal of achieving carbon neutrality, the cultural sector should seek capital and operational improvements to facilities, ensuring they meet sustainable standards. This effort directly supports the California Climate Adaptation Strategy and the California Climate Scoping Plan, which emphasize community involvement in climate resilience efforts.

By fostering a skilled workforce while simultaneously addressing climate challenges, the Arts, Culture, Heritage, and Tourism sector can not only enhance its economic impact but also contribute to broader state goals for sustainability and equity.

Supporting Strategies

1. Strategy 1: Foster creative entrepreneurship by supporting artists and small businesses

- a. Action step 1:** Provide business development training and mentorship to artists and creative entrepreneurs to help them scale their operations and develop sustainable business models, particularly those from disinvested communities who face limited access to business development resources and capital. Partner with organizations such as local chambers of commerce and business incubators to deliver tailored programs.
- b. Action step 2:** Establish partnerships with local banks, credit unions, and financial institutions to offer low-interest loans and micro-grants to creative businesses, prioritizing those led by members from disinvested communities such as immigrants, refugees, and people of color to help increase their access to capital and create more inclusive opportunities for entrepreneurship.
- c. Action step 3:** Develop networking platforms and collaboration spaces to connect creative entrepreneurs with industry leaders, investors, and potential business partners. These platforms can take the form of quarterly networking events, digital collaboration platforms, or regional incubators that facilitate creative partnerships and new ventures.

2. Strategy 2: Support the growth of the creative economy through workforce development

- a. Action step 1:** Collaborate with local colleges, universities, and trade schools to create internship and apprenticeship programs that provide students with hands-on experience in the arts, cultural management, and related fields to address the skills gap in professional creative areas such as digital arts, cultural management, and multimedia production.
- b. Action step 2:** Advocate for local governments to pass legislation supporting livable wages, healthcare, and retirement benefits for artists and creative workers, ensuring that the creative economy provides sustainable and family-supporting jobs, as well as complementary support infrastructure for artists' livelihoods such as housing and anti-displacement initiatives. Special focus should be given to disciplines that align with San Diego County's growing creative industries such as multimedia production and digital arts. Work with labor unions and arts advocates to develop a legislative agenda that prioritizes worker protections in the creative ecosystem.

3. Strategy 3: Elevate community-led initiatives in the creative ecosystem, with a focus on supporting disinvested community members

- a. Action step 1:** Develop or invest in programs that support creative entrepreneurs from disinvested communities, uplifting their contributions to San Diego County's arts and culture scene.
- b. Action step 2:** In tourism efforts, invest in community-led cultural initiatives in key cultural districts like Balboa Park, Barrio Logan, and the Arts District Liberty Station, spotlighting the creative work of disinvested community members.
- c. Action step 3:** Collaborate with local tourism boards, hotels, restaurants, and communication networks to further spotlight San Diego County's diverse local art scene, such as through community-centered festivals, exhibitions, and performances.

4. Strategy 4: Strengthen cross-sector collaboration and intersectional partnerships

- a. Action step 1:** Establish a task force composed of leaders from arts, tourism, technology, education, business, and government sectors. This group can meet regularly to identify shared goals and challenges across their respective industries, ensuring the alignment of resources and efforts. By fostering collaboration, the task force can help unlock opportunities for growth, innovation, and investment in San Diego County's creative ecosystem, addressing industry-wide issues and ensuring the arts are used to enrich and enhance broader economic development.
- b. Action step 2:** Launch collaborative initiatives that merge the arts with technology and education, such as creative tech workshops. These workshops can enable artists and technologists to co-create innovative products, including digital content, interactive installations, and immersive experiences that blend artistic creativity with cutting-edge technology. By integrating these disciplines, the projects can foster innovation and offer learning opportunities for students and professionals looking to work at the intersection of arts and technology.
- c. Action step 3:** Host annual or bi-annual summits that bring together key stakeholders from the arts, entrepreneurship, education, and tech industries. These events can provide a platform to showcase collaborative projects, explore new partnership opportunities, and facilitate networking.



Life Sciences: Promoting inclusivity across the life sciences sector to promote access to good quality jobs and drive economic growth

Description

Life sciences encompasses biotechnology, pharmaceuticals, and medical devices, with the potential for SDC to become an inclusive, globally recognized innovation hub driving economic growth through research advancement and biomanufacturing while providing diverse low-barrier career opportunities across skill levels.

Industry development

- **Local market signals :** Major biotech expansions, strong funding for research, and significant VC deals creating paths for diverse workforce entry
- **Key infrastructure needs :** Research facilities and biomanufacturing spaces to drive job creation across skill levels
- **Key regional assets:** UCSD, Scripps Research, Sanford Burnham Prebys



Job quality, equity & climate

- **Create** stable, low-barrier careers with competitive wages and benefits, focusing on good-quality entry-level roles
- **Ensure** positions remain accessible to a diverse workforce
- **Reduce** emissions through Green Lab Certification and sustainable facility practices



Workforce development

- **Partner** with schools to provide accessible certifications
- **Offer** paid training, internship opportunities
- **Support** career advancement with mentorship and apprenticeships
- **Expand** access through DEI-focused funding and job programs



Supporting strategies

1. **Improve the talent pipeline with a DEI lens:** develop short-term certification programs for entry level roles and paid apprenticeships allowing trainees to “earn while they learn”
2. **Expand life sciences manufacturing jobs:** encourage wage standards and offer targeted training in disinvested communities
3. **Invest in lab space and research infrastructure:** prioritize local access and opportunities through community benefit agreements
4. **Expand access to capital:** fund and support entrepreneurs from disinvested communities

Photo by Chokniti Khongchum: <https://www.pexels.com/photo/person-holding-green-leaved-plant-2280551/>

Life Sciences (San Diego County)

Definition and Rationale

The life sciences sector in San Diego County encompasses biotechnology, pharmaceuticals, medical devices, the manufacturing of these technologies, and research and development (R&D). San Diego County is recognized globally for its innovation in life sciences, housing one of the largest life sciences clusters in the United States. This chapter explores how life sciences, a leading industry in San Diego County offers diverse opportunities for high-quality and low-barrier jobs across the sector.

Under the North American Industry Classification System (NAICS), this industry aligns with code 54 (“Professional, Scientific, and Technical Services”), with specific subcodes for various digital infrastructure jobs, including codes 54171 for Research and Development in the Physical, Engineering, and Life Sciences, which covers a broad range of scientific research and development activities, 541714 for Research and Development in Biotechnology, and 541715 for Research and Development in the Physical, Engineering, and Life Sciences. While these codes serve as a practical reference and were used to compile industry information (as available data is often categorized under it), they may not fully capture all nuances or variations within the industry.

The rationale for focusing on Life Sciences is as follows:

- **Economic potential:** San Diego County's life sciences sector is a key economic driver, employing about 59,200 people as of 2022 (U.S. Bureau of Labor Statistics, 2022). The sector attracts venture capital and fosters innovation through collaborations with top research institutions, providing high-wage employment and supporting economic growth. As the local population grows, the demand for pharmaceuticals and medical devices may increase, positioning San Diego at the forefront of medical innovation and expanding its reach in global markets.
- **Environmental Imperative:** The proposed strategy enhances the life sciences industry's role in addressing environmental challenges. It does this by advancing the development of medical technologies that can reduce both pharmaceutical waste and manufacturing emissions (e.g. precision medicine and renewable bio-based products) while also tackling the sector's own ecological footprint. The industry in San Diego County is committed to improving environmental sustainability through research focused on reducing impacts and implementing green practices in labs and biomanufacturing facilities. This approach aligns with California's climate goals and addresses the significant waste generation issue in the sector, as many companies in the region pursuing Green Lab Certification and implementing sustainable practices in their research facilities (San Diego Business Journal, 2022).

- **Equity considerations:** The proposed strategy promotes social equity by prioritizing diversity within the life sciences talent pipeline. It enables members of disinvested communities to access a variety of low-barrier jobs, such as lab assistance, facility coordination, maintenance tech, and administrative roles like human resources and procurement. At present, ~55% of bioscience jobs in San Diego do not require an advanced degree, suggesting that there is room for both highly trained, and highly accessible positions to exist in the region simultaneously (U.S. Census Bureau, 2022). Additionally, expanding access to capital and investing in infrastructure within disinvested communities are vital strategies. These efforts support entrepreneurs, develop community-led innovation hubs, and ensure that new developments align with community needs to prevent displacement while promoting job accessibility.

Industry Development

The life sciences sector in San Diego County is experiencing sizeable growth, driven by its world-class research institutions such as the University of California San Diego (UCSD), The Scripps Research Institute, and the Sanford Burnham Prebys Medical Discovery Institute (UCSD, 2024; Scripps Research Institute; Sanford Burnham Prebys Medical Discovery Institute, 2024). These institutions fuel innovation and attract top-tier talent, contributing to the region's reputation as a leader in life sciences. Current trends show a focus on biotechnology, pharmaceuticals, and medical devices, with notable advancements in drug discovery, genomics, bioinformatics, and precision medicine. This growth is supported by collaborations with major companies like Illumina and Neurocrine Biosciences, which specialize in genomic sequencing and neurological disorders, respectively (Illumina, 2024; and Neurocrine Biosciences, 2024). Additionally, the pharmaceutical sector benefits from the presence of major players like Pfizer and Johnson & Johnson, who maintain significant R&D operations in the region (Pfizer, 2024; Johnson & Johnson, 2024).

- **Location Quotient (LQ):** San Diego County has an LQ of 4.97 for life sciences for private employment, indicating a concentration of industry employment well above the national average (U.S. Bureau of Labor Statistics, 2022).
- **Total Sector Employment:** The life sciences sector in San Diego provides jobs for about 59,914 workers, representing only about 4% of total employment in the County (U.S. Bureau of Labor Statistics, 2022). However, broader estimates suggest the sector directly employs 75,816 employees and supports 178,143 total jobs (Biocom, 2024).
- **Median Annual Wage:** The median annual wage for life sciences workers in San Diego is \$160,930, well above the regional average for other industries (U.S. Bureau of Labor Statistics, 2022) *Note: the median wage statistics do not factor in outsourced and subcontracted support work (e.g., Janitorial, security, shipping, and food services).*

- **Workforce Development and Education:** Educational institutions such as University of California San Diego and Scripps Research benefit the county, which have programs that aim to train a workforce for research and development roles (University of California San Diego, 2024; Scripps College, 2024). Additionally, community colleges like MiraCosta and San Diego City College provide biotechnology certificate programs and associate degrees, while organizations like Biocom Institute offer workforce development initiatives targeting individuals with diverse educational backgrounds (Miracosta College, 2024; San Diego City College, 2024; Biocom, 2024).

San Diego County's life sciences sector faces several challenges that could hinder its growth. The sector is heavily reliant on venture capital funding, which has seen a decline from 2021-2023, forcing companies to reduce R&D operations and implement layoffs (Biocom California, 2023). The high cost of living in San Diego complicates workforce retention, necessitating affordable housing solutions and enhanced training programs to increase worker resiliency (San Diego Union-Tribune, 2023). Additionally, the local real estate market presents obstacles with an oversupply of lab space, leading to a 20% vacancy rate and driving down prices (San Diego Union-Tribune, 2024). Despite these challenges, San Diego County's innovation ecosystem remains strong, supported by a robust ecosystem of academic and research institutions like University of California San Diego and The Scripps Research Institute, as well as incubators such as CONNECT and JLABS (San Diego Business Journal, 2023).

Local Market Signals

San Diego County's life sciences sector is currently navigating a complex landscape of market signals that both challenge and highlight its potential for growth. Despite a decline in venture capital funding from about \$5 billion in 2021 to about \$2 billion in 2023, recent activity suggests a rebound, including major investments like Mirador Therapeutics' \$400 million Series A funding (Biocom California, 2023; PitchBook, 2023). This influx of capital is crucial for supporting innovation and expanding access to funding for entrepreneurs, particularly those from disinvested communities. Meanwhile, the local real estate market presents opportunities for investment in lab space and infrastructure despite high vacancy rates of 20.4%. For example, Pfizer recently signed a 230,000-square-foot lease at Torrey View, where it plans to focus on developing cancer treatments in advanced research and development facilities. The space will also support collaboration with platforms like StudioLabs and Pfizer Ignite, which provide startups access to Pfizer's research, development, and manufacturing services, as well as guidance from an expert advisory network (Breakthrough Properties, 2024). Additionally, the sector faces a modest job market downturn with a 2.5% year-over-year decrease in employment from 2022 to 2023, yet the region's strong academic institutions continue to attract talent, underpinning long-term growth prospects (Biocom California, 2023). These dynamics underscore the importance of strategic investments and policy support to

sustain the sector's momentum, which can support corresponding high-quality, low-barrier professional pathways (see the Workforce Development section for additional details).

Value Chain and Infrastructure

San Diego County's life sciences sector benefits from many infrastructure investments, including research facilities, biomanufacturing spaces, and incubators. The clustering of these facilities around the Torrey Pines Mesa, home to world-class institutions like University of California San Diego and The Scripps Research Institute, enables seamless collaboration across the value chain, from R&D to clinical trials and commercialization (San Diego Regional EDC, 2023). This infrastructure supports the growth and clustering of businesses, facilitating the development of emerging technologies and therapeutics. The region's infrastructure is also expanding from the North to areas like downtown, which is critical for more equitable growth and ensuring the sector's broader reach across the county. This expansion helps in distributing the economic benefits more evenly and supports the sector's long-term sustainability. For instance, the development of new lab spaces along Mira Mesa Boulevard and in the Torrey Pines Science Park indicates a commitment to providing the necessary infrastructure for life sciences companies to thrive, despite current challenges such as high vacancy rates and economic headwinds (San Diego Union-Tribune, 2024).

Investments in biomanufacturing and clinical trial facilities are particularly important, as they support the commercialization of life sciences products. The proximity to Tijuana, Mexico's medical device manufacturing hub, further enhances San Diego County's life sciences manufacturing capabilities, making it an optimal location for companies looking to scale up their operations (San Diego Regional EDC, 2023).

Innovation Ecosystems

San Diego has an established innovation ecosystem driven by partnerships between academic institutions, the private sector, and government. Programs like CONNECT and EvoNexus play a crucial role in incubating early-stage companies, providing them with the resources and support needed to grow and innovate (University of California San Diego, 2023). These incubators facilitate the movement of new technologies to market, accelerating the commercialization process and fostering a culture of innovation. Collaborations with large biotech firms are also pivotal in San Diego County's innovation ecosystem. These partnerships help in leveraging the expertise and resources of established companies to support the development of emerging technologies. For example, the collaboration between research institutions and private companies has been instrumental in advancing fields like genomics, bioinformatics, and RNA therapeutics (San Diego Regional EDC, 2023).

Regional Assets

San Diego County's life sciences sector is enriched by its expertise in key interdisciplinary fields such as genomics, bioinformatics, and clinical research. Institutions like University of California San Diego, ranked among the top research universities globally, are central to this expertise, with specific educational programs from these institutions outlined in the 'Workforce Development: Training and Recruitment' section below (University of California San Diego, 2024). The region's innovation hubs, including the Torrey Pines Science Park and Sorrento Valley, cluster businesses and research activities, creating a vibrant ecosystem that supports innovation and growth. The region's natural resources and proximity to environmental and marine biology institutes provide unique opportunities for cross-disciplinary innovation. For instance, access to coastal resources facilitates research in marine biology and related fields, contributing to the sector's diversity and innovation potential (San Diego Regional EDC, 2023). San Diego County's well-established network of public-private partnerships, including the Biocom California association, is another key asset. These partnerships advocate for and support life sciences businesses, ensuring a favorable business environment and access to necessary resources (Biocom California, 2023).

Increasing Economic Diversification and Resilience

San Diego County's life sciences sector has proven to be a critical driver of economic growth and diversification. With a 55% employment growth in biosciences over the past decade, outperforming the national growth rate of 28%, the sector plays a key role in expanding the local economy beyond its traditional reliance on defense and tourism industries (Biocom California, 2023). This growth has contributed to the region's economic output, with the sector producing a total economic output of \$57.4 billion in 2022 (Biocom California, 2023). Despite strong employment growth, the economic resilience of the broader Professional, Scientific and Technical Services industry is low, with a recorded -1% decline in resilience (U.S. Bureau of Labor Statistics, 2022). This indicates some vulnerability during economic downturns, such as the current challenges posed by reduced venture capital funding and economic headwinds (San Diego Business Journal, 2024). The sector offers high-paying jobs across multiple subfields like biotechnology, medical devices, pharmaceuticals, and bioinformatics, reducing the region's economic dependence on sectors like tourism and defense, however, there is a continued importance in prioritizing good-quality, low-barrier jobs for individuals from disinvested communities with limited educational attainment. Innovations in digital health and biomanufacturing create additional opportunities for employment and investment, enhancing the sector's contribution to economic diversification and resilience (San Diego Regional EDC, 2023).

Alignment with Job Quality and Access, Equity, and Climate

Job Quality and Access

Good-quality life sciences jobs in San Diego offer competitive wages, comprehensive benefits, and clear career advancement pathways. The sector's focus on biomanufacturing and clinical trials creates entry-level, low-barrier opportunities for workers without advanced degrees, many of whom come from disinvested communities, in roles such as lab assistants, research technicians, cleanroom operators, data entry administration, and HR assistants. Equitable recruitment practices ensure that disinvested communities benefit from the sector's growth. Programs like the Biocom California Institute collaborate with local colleges to align curricula with employer needs, offering tailored training and pathways for skill development, while the broader sector prioritizes family-sustaining jobs that offer healthcare, retirement benefits, consistent scheduling, and safe working conditions. This commitment to job quality is crucial for attracting and retaining talent, particularly from disinvested communities. Furthermore, annual research reports that analyze workforce trends helps surface gaps and encourage employment outcomes are disaggregated by race, ethnicity, and income (Biocom California, 2023).

Equity

The life sciences sector in San Diego must prioritize workforce diversification, as only 25.6% of employees identify as Black or Hispanic (U.S. Bureau of Labor Statistics, 2022). Targeted recruitment in low-income communities and partnerships with local organizations can create more inclusive advancement opportunities. Engaging disinvested communities in supporting strategies is vital to address their needs and interests. This involves demonstrating how the strategy serves historically disinvested communities and ensuring they are informed about proposed interventions (Biocom California, 2024).

Climate

San Diego County's life sciences sector is committed to limiting environmental impacts through sustainable practices in research labs and biomanufacturing. Investments in green technologies such as precision medicine to reduce manufacturing waste, and efforts to attain Green Lab Certification align with the state's Climate Adaptation Strategy, helping the sector mitigate climate impacts while advancing public health (San Diego Regional EDC, 2023). The proposed supporting strategies aim to avoid exacerbating climate change through sustainable manufacturing and include pathways to mitigate anticipated impacts on key industries and occupations, with a focus on disinvested communities.

Workforce Development

Training and Recruitment

San Diego County's life sciences sector supports training and recruitment including for disinvested communities through partnerships with educational institutions and workforce development organizations. Numerous educational institutions in the county have dedicated life sciences programs such as MiraCosta College, San Diego City College, University of California San Diego (UCSD) and UCSD Extended Studies, and California State University San Marcos. These educational institutions offer credentials ranging from certificates to doctoral programs, providing students with necessary educational qualifications, such as MiraCosta College's Biomedical Equipment Technician Certificate and career center that support students applying for jobs in the sector.

These programs are further supported by pipeline programs such as Life Science Cares San Diego, which partners with local nonprofits and life sciences companies to provide access to education and internship opportunities for under-resourced students, such as those from the Monarch School for unhoused youth (Life Sciences Care, 2024). Furthermore, UCSD is one of six certified bridge sites in the U.S. receiving funding and support to increase the number of underrepresented minority students who receive doctoral degrees in chemical sciences (UCSD, 2020). UCSD also hosts PATHS, or the PATHways to STEM through Enhanced Access and Mentorship Program, which aims to increase both the number and retention rates of underrepresented students in STEM at the university (UCSD, 2019).

Programs like the Biocom California Institute play a crucial role in fostering a skilled and diverse workforce, offering specialized training to support California's thriving life sciences ecosystem. These initiatives, including tailored fellowship programs such as *Life Science Innov8Ed*, aim to accelerate the sector's growth, particularly in regions like San Diego County. The Biocom California Institute also serves as a hub for resources, providing a monthly newsletter featuring professional development and training programs, mentorship and fellowship opportunities, job openings in the life sciences, tools for HR professionals, and updates on upcoming learning and networking events.

In addition, companies like Illumina and ThermoFisher contribute to workforce development through targeted internship and apprenticeship programs. For example, Illumina sponsors a 12-week summer genomics internship program focused on project-based learning, networking opportunities, and professional and personal growth. These efforts prepare young talent from disinvested communities to compete in the market and align workforce skills with the needs of the life sciences sector. Importantly, by increasing awareness, exposure, and basic skillsets, they also create pathways for individuals from historically disinvested communities to enter the industry.

These multifaceted programs bridge the gap between education and employment by equipping participants with the skills and credentials necessary to meet industry demands. Through targeted education, hands-on training, and professional development, they help ensure participants are job-ready and positioned for success in a competitive market.

Nonetheless, opportunities remain to strengthen these efforts. Increasing funding for equity-centered Diversity, Equity, and Inclusion (DEI) initiatives, particularly those focused on creating low-barrier, high-quality job opportunities, would further enhance access and support for individuals from underserved communities. Providing holistic assistance throughout individuals' professional journeys, as outlined in the Supporting Strategies, can also help sustain and expand these impactful initiatives.

Equitable Access and Economic Mobility

The sector focuses on equitable access to training and career advancement, especially for disinvested communities. Tailored training programs and inclusive recruitment practices are key components of this strategy. For example, the Biocom California Institute collaborates with local colleges to align curricula with employer needs, providing pathways for economic mobility (Biocom California, 2024).

Retention & Advancement

To retain and advance talent, San Diego County's life sciences sector emphasizes career development opportunities and continuous professional growth. Companies offer comprehensive benefits, competitive wages, and safe working conditions, which are crucial for retaining talent. Additionally, the sector's innovation ecosystem and collaborative environment provide professionals with evolving growth opportunities, making it an attractive place to build long-term careers (University of California San Diego, 2023).

Addressing Future Needs

Looking ahead, the life sciences sector plans to address future workforce needs by enhancing strategic collaboration between businesses, educational institutions, and labor unions, while developing programs that equitably allocate time and investment in training, recognizing that career pathways to quality job positions must be accessible to all. This approach will focus on aligning educational curricula with emerging industry trends, ensuring skill development keeps pace with technological advancements. Partnerships across sectors will help create dynamic training programs that anticipate future job requirements, ensuring a steady pipeline of qualified talent to meet evolving industry demands.

Alignment with State Strategies

San Diego County's life sciences sector aligns closely with California's broader climate and environmental strategies. The sector's focus on sustainable practices in research labs and

biomanufacturing supports the state's Climate Adaptation Strategy and the California Climate Scoping Plan (California Climate Adaptation Strategy, 2023). Investments in green technologies and bio-based solutions contribute to mitigating climate impacts while advancing public health. The sector also supports the state's goals in clean energy, air pollution reduction, and sustainable water management. For example, innovations in biotechnology for agriculture align with the state's sustainability goals, ensuring long-term economic and environmental resilience (California Climate Scoping Plan, 2023). Furthermore, the life sciences sector in San Diego contributes to the state's efforts in transportation decarbonization through the development of bio-based products and sustainable technologies.

The sector's commitment to public health and healthcare resilience is another area where it aligns with state strategies. By developing innovative medical technologies and treatments, the sector supports the state's objectives in improving public health outcomes, particularly in disinvested communities (California Department of Public Health, 2023). In addition, the life sciences sector in San Diego supports the Sustainable Groundwater Management Act (SGMA) and California's 30x30 Initiative through sustainable practices in research and development. These efforts ensure that the sector's growth is sustainable and environmentally responsible (SGMA, 2023; California's 30x30 Initiative, 2023). Overall, the alignment with state strategies positions the life sciences sector in San Diego as a leader in both economic growth and environmental sustainability, ensuring a resilient and sustainable future for the industry.

Supporting Strategies

1. Strategy 1: Improve the talent pipeline with a diversity, equity, and inclusion lens

- a. Action step 1:** Engage with high schools to introduce students to diverse career pathways in the life sciences sector, such as lab assistance, research technicians, clinical trial coordinators, cleanroom operators, data entry, and HR assistants. This can be done by organizing career fairs and workshops led by professionals from diverse backgrounds who can share their experiences and provide mentorship opportunities.
- b. Action step 2:** Partner with educational entities in disinvested communities to further develop short-term certification programs for entry-level roles. This partnership can involve co-developing curricula that meet industry standards and providing scholarships or subsidies to ensure accessibility for students from low-income families. By providing these certifications, students from disinvested communities can gain access to foundational skills and credentials necessary for immediate employment in life sciences, thus bridging educational gaps and promoting equity.

- c. Action step 3:** Collaborate with existing life science firms to develop paid apprenticeships, allowing trainees to "earn while they learn." This collaboration can include establishing formal agreements with companies to secure apprenticeship and internship positions and creating a structured training program that integrates on-the-job learning with classroom instruction. Such initiatives provide practical experience and financial support, which are crucial for career advancement in the industry.

2. Strategy 2: Expand life sciences jobs in manufacturing, aiming to facilitate union participation, and access for disinvested communities

- a. Action step 1:** Set standards for wages, benefits, and local hiring in sustainable manufacturing, with specific attention to compliance concerns and the prioritization of union jobs, where applicable (e.g., issues in vaccine and medical device manufacturing).
- b. Action step 2:** Develop new sustainable manufacturing-focused training programs and jobs in disinvested communities through partnerships between companies, local institutions, and technical schools to build a skilled workforce across production value chain.

3. Strategy 3: Invest in locally benefiting lab space and research infrastructure

- a. Action step 1:** Invest in lab space and research infrastructure within established life sciences hubs or expand to new areas where there is demonstrated community interest in lab space and research infrastructure. Developers should implement community benefit agreements to prioritize opportunities for neighboring residents from disinvested communities, ensuring they have preferential access to training, jobs, and business ventures within these spaces.
- b. Action step 2:** Support community-based programs at labs and research facilities that provide neighboring residents with opportunities to access these regional facilities. This can include collaborating with life sciences facilities to offer low-cost lab space, such as subsidized allocations specifically for individuals or businesses from underrepresented areas, and providing resources, such as business development support to neighboring residents from disinvested communities.

4. Strategy 4: Expand access to capital for entrepreneurs from disinvested communities

- a. Action step 1:** Provide targeted funding to life sciences entrepreneurs from disinvested communities to enhance innovation and diversity. This can be accomplished by establishing a dedicated grant program that offers financial

resources specifically for startups led by these entrepreneurs. Additionally, collaboration with investors can be fostered to create investment networks focused on supporting these entrepreneurs. By doing so, the initiative can increase innovation and diversity within the industry and economically empower entrepreneurs by providing them with the necessary capital to launch and scale their businesses.

- b. Action step 2:** Develop programs that empower individuals from disinvested communities who present a compelling case for funding to launch successful businesses. The programs, led in partnership with local educational institutions and community organizations, can provide comprehensive support, including business development workshops, mentorship from industry experts, and access to resources such as incubators and accelerators. These efforts aim to unlock potential within these communities, fostering new business creation and sustained economic growth by equipping individuals with the skills and support they need to succeed.



Quality Transportation and Warehousing: Leveraging IC's strategic location and regional assets to drive equitable economic growth and position the county as a logistics hub

Description

Quality transportation and warehousing spans passenger and cargo transport via air, rail, water, road, and pipeline, along with warehousing and storage services. IC's strategic location near major urban centers, the U.S.-Mexico border, and accessibility to existing transportation infrastructure offers significant advantages.

Industry development

- **Local market signal:** E-commerce growth, cross-border trade, and increasing commercial truck traffic
- **Key infrastructure needs:** Upgrade roads, intermodal facilities, and warehousing to drive efficiencies and reduce costs
- **Key regional assets:** Strategic location, low land costs, Foreign Trade Zones, and existing infrastructure



Job quality, equity & climate

- **Create** stable jobs with career pathways, fair wages, and improved safety standards
- **Expand** access to jobs for disinvested groups through inclusive training and recruiting, reduce gender wage gaps
- **Reduce** emissions with clean transportation, renewable energy, and sustainable practices



Workforce development

- **Partner** with colleges and labor unions to align training with industry needs
- **Support** on-the-job training, certifications and apprenticeships
- **Promote** career development, workplace safety, benefits, and supportive services
- **Prepare** workforce for tech advancements



Supporting strategies

1. **Connect disinvested communities:** develop targeted recruitment initiatives, collaborating with CBOs and employers to create opportunities
2. **Support career advancement:** provide incentives for training and certifications, address barriers, and invest in workforce upskilling
3. **Upgrade environmental & labor standards:** improve labor laws and promote sustainable practices like electric vehicle and energy-efficient warehouse use
4. **Position IC as a logistics hub:** develop a sustainable growth plan that integrates local industries, supports cross-border economic integration, and addresses critical infrastructure deficiencies

Photo by Tiger Lily: <https://www.pexels.com/photo/warehouse-with-concrete-floor-4483609/>

Quality Transportation and Warehousing (Imperial County)

Definition and Rationale

Quality transportation and warehousing encompasses a range of subsectors, including the transportation of passengers and cargo through air, rail, water, road, and pipeline, as well as warehousing and storage services (U.S. Bureau of Labor Statistics, 2024). The industry plays a central role in supporting the movement of goods and materials across national and global markets, and Imperial County's strategic location provides several advantages, such as its proximity to major urban centers, the U.S.-Mexico border, and accessibility to existing transportation infrastructure.

Under the North American Industry Classification System (NAICS), this industry aligns with code 48-49 ("Transportation and Warehousing"), with specific subcodes for various related jobs, including codes 4811-4812 for air transportation, 4821 rail transportation, 4831-4832 for water transportation, 4841-4842 for freight trucking, 4881-4889 for associated support activities, and 4931 for warehousing and storage. While these codes serve as a practical reference and were used to compile industry information (as available data is often categorized under it), they may not fully capture all nuances or variations within the industry.

The rationale for focusing on Quality Transportation and Warehousing is as follows:

- **Economic Potential:** Imperial County's proximity to major urban centers like Los Angeles and San Diego, combined with lower land costs compared to nearby counties, positions the region as a strategic logistics hub. The county also benefits from its border with Mexico and access to major transportation infrastructure, such as interstate highways, rail lines, and international trade routes, all of which enhance its capacity to support neighboring economic hubs and trade flows. The sector's potential is strengthened by its ability to offer quick-entry jobs that require minimal education and provide professional pathways. This aligns with local workforce needs, as these jobs create accessible employment opportunities while offering advancement potential. Additionally, the transportation and warehousing sector has a multiplier effect, complementing other industries such as agriculture, manufacturing, and energy by improving supply chain efficiencies.
- **Environmental Imperative:** The transportation and warehousing industry is a major contributor to U.S. greenhouse gas emissions. Prioritizing sustainable practices—such as electrifying fleets, using renewable energy in logistics facilities, and adopting a long-term growth approach with responsible site selection—is essential to mitigating environmental impacts and advancing climate goals. These efforts not only address the industry's environmental footprint but also respond to community concerns about preventing increased pollution in the county.

- **Equity Considerations:** As the industry grows, it is critical to address equity concerns, such as ensuring equal access to training and career advancement opportunities, addressing gender wage gaps, and promoting fair labor practices. It is also important to ensure that the industry's expansion prioritizes the wellbeing of people by supporting quality jobs, safe working conditions, and minimizing environmental impacts. Focusing on inclusive development aims to strengthen the sector's long-term sustainability while promoting the sharing of benefits across the local population and disinvested communities.

Industry Development

- **Location Quotient (LQ):** Imperial County has a relatively low Location Quotient (LQ) of 0.71 for annual average employment, indicating that this industry represents a smaller share of local employment compared to the national average (U.S. Bureau of Labor Statistics, 2023). This suggests that there is less concentration of jobs in transportation and warehousing locally than there is across the U.S.
- **Total Sector Employment:** Transportation and warehousing employs approximately 2,516 workers, which represents ~4.16% of Imperial county's total employment (Data USA, 2022).
- **Median Annual Wage:** Median earnings for the industry in Imperial County are \$71,501 annually (Data USA, 2022), which are above the living wage of \$20.82¹² per hour (~\$43,300 annually) (MIT Living Wage Calculator, 2024). Median hourly wages for entry-level positions, such as light truck drivers, can be around \$22 per hour (~\$46,000 yearly) (California Employment Development Department, 2024). Yet, as workers progress into more specialized roles, such as transportation, storage, and distribution managers, wages increase significantly, with salaries reaching over \$45 per hour (~\$95,000 yearly) (California Employment Development Department, 2024). Additionally, other occupations in the industry show potential, such as logisticians, with a mean hourly wage of \$36.33 (mean annual wage of \$75,574); bus and truck mechanics and diesel engine specialists, with a mean hourly wage of \$33.90 (mean annual wage of \$70,508); transportation inspectors, with a mean hourly wage of \$33.06 (mean annual wage of \$68,758); and first-line supervisors of transportation and material-moving workers, with a mean hourly wage of \$30.86 (mean annual wage of \$64,196), among others (California Employment Development Department, 2024).
- **Workforce Development and Education:** If approached correctly, the sector can support workforce development and growth, as illustrated by wage progression across

¹² Living wage for 1 adult and 0 children.

roles and opportunities for career advancement. Tailored education and training programs, such as certifications in logistics and supply chain management, can enhance the skills of local workers and increase employment opportunities.

Local Market Signals

The quality transportation and warehousing sector benefits from trends signaling potential for expansion. This growth could be driven by the expansion of e-commerce and an increase in cross-border trade with Mexico, which can help to solidify the region's role as a logistics hub for both domestic and international markets. For instance, the county's location near the US-Mexico border has led to a growing volume of commercial truck crossings at the Calexico Port, increasing from 300,000 in 2010 to over 450,000 in 2023 (California Department of Transportation, 2023).

In alignment with these trends, the transportation and warehousing sector's ability to attract public funding appears promising as well. For example, it has been designated as a "Priority Industry" by the California Employment Training Panel (ETP) for fiscal year 2024/25, based on the demand for trained workers and changes in the state economy and labor markets (Employment Training Panel, 2024).

Furthermore, Imperial County is engaged in discussions with the Port of Los Angeles to utilize the county as an Inland Port. This initiative would enhance the county's logistics and supply chain management capacity, strengthen the transportation and warehousing sector, and help position the region as a key logistics hub. Additionally, the county's underutilized municipal and commercial airports and railways, which offer national and international distribution access, present untapped opportunities for further growth in the sector.

Value Chain and Infrastructure

Investments in quality transportation and warehousing are beneficial to support the growth of businesses both within the sector as well as in adjacent sectors. Improvements in roads, facilities, and warehousing not only create direct jobs, but also enhance the efficiency of other local industries. These investments can streamline existing logistics operations and have the potential to attract new businesses that are seeking reliable infrastructure for their supply chains.

For instance, the expansion of road networks and highway upgrades allow for reducing transit times, cutting transportation costs, and enabling businesses to better access major markets. Enhanced roadways could facilitate the movement of goods across industries and improve regional trade flows, including those between the U.S. and Mexico. Additionally, developing complementary infrastructure, such as intermodal transport facilities, could streamline transfers between vehicles and further improve logistical efficiency. These advancements could particularly benefit industries reliant on the movement of materials, manufacturing, and

agriculture, as improved logistics networks would enable these industries to move materials and products more efficiently, reducing delays and operational costs.

Moreover, investing in warehousing facilities and logistics centers could have a multiplier effect on other industries. For example, better warehousing and distribution capabilities could allow manufacturing, energy, and retail businesses to manage inventory more effectively, respond to market demands faster, and reduce operational delays. These sectors would also benefit from generally improved supply chain efficiencies, leading to cost savings and increased productivity.

In this way, Imperial County can cultivate a strong logistics ecosystem that strengthens the transportation and warehousing sector, and at the same time catalyzes economic growth across a diverse range of industries, thereby reinforcing value chains of multiple sectors.

Innovation Ecosystems

Investments in quality transportation and warehousing in Imperial County are likely to create a dynamic innovation ecosystem through actions like transitioning to green fleets utilizing alternative fuel, implementing warehouse automation and robotics where relevant (e.g., sorting systems), and optimizing supply chains through digitalization and innovative solutions (e.g., real-time tracking, predictive maintenance, route optimization, etc.).

Notably, an important driver of change in the transportation and warehousing sector is the need for climate adaptation. The ongoing shift towards electrification, including the adoption of electric and hydrogen-powered trucks, will be key in transforming the industry. These climate adaptation measures not only reduce carbon emissions but also create new opportunities for innovation in clean technologies and sustainable logistics, which could help position the region as a leader in both environmental responsibility and cutting-edge advancements in the sector.

Moreover, investments in cutting edge transportation, warehousing, and logistics not only enhance operational efficiency but also indirectly bolster the overall innovation landscape in the region. By providing a building block necessary for business growth, these investments enable early-stage businesses to start, access markets, and scale operations more easily. For example, innovative products can emerge through e-commerce, which relies on strong transportation and warehousing systems for support. Investments will support both current and future ventures, providing economic vitality to the region.

Regional Assets

Imperial County displays a range of regional assets that reinforce the development of quality transportation and warehousing. One of its advantages is the lower cost of land compared to nearby counties such as San Diego and Los Angeles. The median land price per acre is \$60.6K

in Imperial County, \$71.2K in San Diego County, and \$305K in Los Angeles County, which makes it ~15% and ~80% cheaper respectively (KTLA, 2023). Similarly, the median property value in Imperial County was \$256,000 in 2022, compared to \$725,200 in San Diego County and \$732,200 in Los Angeles County, representing a difference of ~65% in both cases (Data USA, 2022).

Alongside this, the county's strategic geographical positioning—125 miles from San Diego, 204 miles from Phoenix, 300 miles from Los Angeles, and 300 miles from Las Vegas—enhances its appeal as a logistics and import/export hub, with access to over 33 million consumers within a 300-mile radius. Connection to major transportation routes, including Interstate 8, railways to Los Angeles, San Diego, and Arizona, as well as two ports of entry with Mexico, facilitates the efficient movement of goods and services. Furthermore, there is commercial and industrial land available in all cities with Foreign Trade Zone status (i.e., free-trade zones) as well as specific planned areas for international logistics, such as Mesquite Lake (5,100 acres) and Gateway to the Americas (1,700 acres) (Imperial Valley Economic Development Corporation, 2024). Collectively, these factors increase the region's competitiveness. Furthermore, infrastructure supporting import/export services, such as the two ports of entry in Mexicali and the San Diego-Tijuana border crossings at San Ysidro and Otay Mesa, can further expedite commerce, creating jobs and solidifying the region's role in international trade.

Increasing Economic Diversification and Resilience

Quality warehousing and transportation also presents potential for growth, diversification, and resilience in Imperial County. According to the California Employment Development Department, the Trade, Transportation, and Utilities sector is projected to see a ~31% employment increase between 2020 and 2030, growing from 2,200 to 2,900 jobs (California Employment Development Department, 2024).

In addition, according to the Economic Policy Institute, the sector has a strong multiplier effect. Specifically, every 100 direct jobs in transportation and warehousing generate an additional 276 indirect jobs in other sectors. Therefore, an increase of 700 jobs would generate over 1,900 indirect jobs by 2030. Similarly, a \$1 million increase in demand for transportation and warehousing also generates 4.7 direct jobs and 11.3 additional indirect jobs throughout the economy (Economic Policy Institute, 2019). These ripple effects make quality transportation and warehousing a driver of regional employment and economic activity. Notably, investments in this industry have the potential to catalyze economic activity across related areas, including manufacturing, agriculture and energy. Enhanced logistics improve the movement of products, streamline inventory management, and reduce delays, yielding cost savings and increasing productivity. Thus, the industry can benefit the overall economy, enabling different sectors to thrive and respond to market demands more effectively.

Moreover, historical data reflects that transportation and warehousing has a relatively high level of economic resilience, showing a 6% growth rate between 2006 and 2010 despite the 2008 financial crisis (California Open Data Portal, 2024). This indicates stability against economic downturns and suggests that the sector can adapt and recover from economic fluctuations, thereby providing a stable foundation for long-term growth.

Alignment with Job Quality and Access, Equity, and Climate

Job Quality and Access

Quality transportation and warehousing presents opportunities for creating family-sustaining jobs with career advancement potential. Nonetheless, it is important to improve conditions for entry-level positions, by enhancing workplace safety, ensuring access to healthcare and retirement benefits, and promoting overall good working conditions. To exemplify, the industry has a reported nonfatal occupational injury and illness rate of 4.1 per 100 full-time workers, higher than the average rate of 3.0 of all industries in the country (U.S. Bureau of Labor Statistics, 2022). However, not all cases may be reported to authorities, meaning the actual rate could be higher than the official figures suggest. Many injuries can result from overexertion and incidents involving powered industrial trucks, stressing the need for enhanced safety measures, protocols, and training. Additionally, establishing articulated career pathways within and across other industry sectors is essential. Equipping workers with skills that are transferable across multiple sectors makes the workforce more adaptable and resilient, reducing dependency on a single employer or industry.

Strategies for transportation and warehousing should also prioritize equitable access for individuals from historically disinvested communities, along with inclusive recruitment practices and tailored training programs that help local workers advance their careers. Worker representation by organized labor should be considered an important element in safeguarding fair wages, benefits, and a voice in shaping workplace conditions.

Equity

The transportation and warehousing industry in Imperial County offers opportunities for both direct and indirect community benefits, particularly for disinvested communities. This sector provides several entry-level positions with low educational requirements, such as truck drivers and warehouse staff, making it accessible to individuals from disinvested backgrounds. However, equity challenges persist. Barriers such as a lack of technical training programs and limited access to certifications hinder historically disinvested communities from participating in higher paying, more specialized roles. These challenges should be addressed through appropriate and inclusive training, credit for prior learning, certification programs, and workforce development strategies.

In terms of gender participation, the transportation and warehousing industry in the county boasts a female workforce rate of 37%, which surpasses the national average of 26%. Nevertheless, a disparity in earnings generally persists, with a 17% gender wage gap in trucking and an 11% wage gap in warehousing roles across the US, indicating a need for action. (Journal of business logistics, 2023).

Climate

Warehousing and transportation present big challenges related to climate change. Transportation is responsible for approximately 28% of total greenhouse gas emissions in the US, making it the largest source of these emissions. From 1990 to 2022, the transportation sector also experienced the highest absolute increase in emissions compared to other sectors (U.S. Environmental Protection Agency, 2024). Additionally, the presence of warehouses, often situated near minority and low-income communities, can exacerbate this problem by attracting truck traffic, leading to greater contamination and health issues for disinvested communities.

Recognizing this issue, it is important to consider implementing sustainable practices that minimize environmental impacts. Clean transportation and the use of renewable energy in logistics emerge as important opportunities within this industry. For instance, transitioning to electric and alternative fuel vehicles and powering warehouses with clean energy can help mitigate the industry's climate effects. While difficult climate conditions, including extreme heat, can pose challenges for logistics operations. Proper insulation and air conditioning can create attractive warehouse jobs, particularly as outdoor work becomes unhealthy for more portions of the day during an increasing portion of the year.

Workforce Development

As previously noted, the transportation and warehousing industries offer entry-level positions that generally require little formal education and provide on-the-job training, which facilitates access to many individuals and allows rapid workforce expansion. To ensure that the economic advantages of the sector are appropriately distributed, it is important to support workforce development initiatives. Collaboration among businesses, educational institutions, and labor unions is key for aligning training programs with industry needs and creating employment pathways for disinvested communities.

Training and Recruitment

To strengthen quality transportation and warehousing in Imperial County, tailored training and recruitment initiatives are necessary. Addressing challenges related to accessibility to training and certifications requires investment in programs that provide on-the-job training, apprenticeships, and workforce development targeted at low-income and disinvested

communities. For example, short-term certification programs, such as commercial driver's licenses (CDL), can rapidly upskill workers, providing them with stable employment in logistics and freight transportation. Similarly, by developing specialized programs like certifications in logistics and supply chain management, the county can upskill local workers and prepare them for higher-paying roles in this industry.

In terms of recruitment, inclusive hiring practices are fundamental. Collaboration between businesses, community colleges, and local training providers can also enhance recruitment efforts by having targeted educational pathways aligned with industry needs. Likewise, collaboration with high school CTE programs can provide an additional entry point for young workers, promoting the establishment of career pathways early and aligning them with workforce demands. In particular, the Governor is working on a new statewide CTE strategy, which offers opportunities to elevate and integrate these efforts within broader state workforce development initiatives.

Equitable Access and Economic Mobility

Ensuring equitable access to jobs in the transportation and warehousing industry is a precursor to promoting economic mobility among historically disinvested communities in the county. This goal can be achieved through the inclusive recruitment practices, expanded access to technical training, and reduced barriers to obtaining certifications previously outlined. By providing these pathways, individuals from disinvested communities can enter the sector as well as advance into higher-paying roles, fostering economic mobility and reducing employment disparities.

Retention and Advancement

Retention and advancement strategies in the industry must focus on creating supportive work environments with opportunities for professional growth. Offering on-the-job training and career development programs can help retain employees while providing clear pathways to higher-paying and specialized roles like logistics managers. Ensuring workplace safety and benefits, such as healthcare and retirement plans, can also contribute to long-term employee retention and job satisfaction. Additionally, access to childcare services is essential for families with young children. Providing childcare options that are reasonably priced, offer flexible hours, and maintain high-quality standards can support employee retention and advancement, by allowing workers to balance professional and family responsibilities more effectively.

Addressing Future Needs

As quality transportation and warehousing expands in Imperial County, it is important to anticipate and address future needs. This includes preparing for innovations and

advancements in logistics technology, such as green transportation solutions and automation, while ensuring that the workforce is trained to adapt to these changes. Proactively aligning training programs with emerging trends and technological shifts aims to make sure the local workforce remains competitive and capable of meeting the evolving demands of the industry.

Alignment with State Strategies

Quality warehousing and transportation in Imperial County has the potential to align with and support existing state strategies in areas such as clean energy, air pollution reduction, transportation decarbonization, and climate adaptation.

For instance, pursuing decarbonization within the transportation sector aligns directly with state objectives. By integrating clean energy solutions—such as electric and alternative fuel vehicles—the industry can reduce greenhouse gas emissions and improve air quality. Additionally, investments in infrastructure improvements for warehouses, including the installation of renewable energy sources like solar panels, can enhance the sector’s sustainability initiatives.

Moreover, it is important to ensure that the industry and its associated investments (e.g., roads and warehouses), does not undermine the preservation of natural and working lands. By integrating thoughtful land-use practices, quality transportation and warehousing can support sustainable development and remain aligned with state strategies.

Supporting Strategies

1. Strategy 1: Ensure disinvested communities are directly connected to job opportunities

- a. Action step 1:** Develop targeted recruitment initiatives for disinvested communities. This could involve collaborating with employers, CBOs, and local nonprofits to establish best practices for inclusive recruitment, ensuring equitable access to job opportunities. It is vital to consider the relevance and potential of entry-level positions within transportation and warehousing (e.g., drivers and warehouse staff), which require relatively low educational qualifications and provide on-the-job training. This would help to reduce barriers and make opportunities accessible to individuals from disinvested backgrounds. Additionally, local hire provisions should be included in the permitting process for warehousing and transportation service facilities to prioritize jobs for local residents.
- b. Action step 2:** Help community members navigate the landscape of available programs and job placement initiatives. This could involve forming a public-private partnership or program that fosters close collaboration with CBOs, labor

unions, and educational institutions to engage disinvested communities and hard-to-reach, remote populations. This initiative would ultimately assist community members in accessing and navigating available programs, apprenticeships, and job opportunities within quality transportation and warehousing.

- c. Action step 3:** Prioritize projects with a defined (and agreed upon) percentage of jobs designated for local workers, especially those from disinvested communities, ensuring those jobs offer long-term stability, fair wages, and opportunities for advancement beyond entry-level or temporary roles including through collaborations with employers to create pathways to supervisory and technical positions.

2. Strategy 2: Support career advancement through training programs and apprenticeship initiatives

- a. Action step 1:** Provide financial incentives for training. Collaborate with employers to develop or enhance programs that incentivize workers to pursue retraining, upskilling, or certifications, enabling them to advance into higher-quality positions. Incentives could include paid training, one-time cash bonuses, wage increases upon certification, and other strategies to encourage participation and career development.
- b. Action step 2:** Collaborate with employers to address common barriers to job training participation. This initiative could involve creating a public-private partnership, working with employers and CBOs to identify and understand the challenges faced by workers (particularly in disinvested communities), and to develop targeted strategies that facilitate access to training opportunities. Strategies may include offering training programs in multiple languages, transportation support, flexible scheduling, childcare services, and considering the needs of undocumented migrants.
- c. Action step 3:** Invest in workforce training and upskilling for roles related to necessary upgrades in quality transportation and warehousing, as well as relevant innovations and technological advancements. For instance, having training programs for roles involving clean energy within logistics, such as electric vehicle mechanics and clean energy systems technicians for warehouses. This can help prepare the workforce for success as the industry evolves.

3. Strategy 3: Upgrade warehousing and transportation developments to meet environmental and labor standards

- a. **Action step 1:** Create spaces for collaboration between local and state labor unions, CBOs, and employers to promote improved labor laws and standards in the transportation and warehousing industry. This may involve facilitating discussions among stakeholders to promote higher-quality jobs through the adoption of best practices related to worker safety and fair compensation.
- b. **Action step 2:** Support employers in adopting sustainable and low-emissions practices. For instance, assist businesses in accessing incentives such as tax breaks and financial subsidies to encourage the use of electric vehicles, energy-efficient warehouses, and clean energy systems.
- c. **Action step 3:** Promote worker protections and awareness of labor standards by establishing a worker oversight board, implementing a workplace hotline, and supporting unionization efforts. These mechanisms can empower workers to report labor violations in the warehousing and transportation industries, including unsafe conditions, unfair wages, and excessive hours. Additionally, it is important to enhance awareness of existing labor laws, such as AB 70113, by partnering with CBOs to provide educational campaigns and informational materials in multiple languages. This would allow employees to be fully informed of their rights.
- d. **Action step 4:** Promote new developments and retrofits that emphasize best practices in labor conditions and sustainability. For labor, the focus should be on fair wages and worker safety protocols. In terms of sustainability, efforts should prioritize emissions reduction and energy efficiency, such as the adoption of electric vehicles and solar-powered warehouses to minimize environmental impacts. Additionally, collaboration with industry bodies and relevant government agencies could allow for the establishment of certification programs that recognize businesses meeting these high standards within logistics.

4. Strategy 4: Position Imperial County as a hub for high-quality transportation and warehousing, particularly to drive synergies with local industries like agriculture, energy and manufacturing

- a. **Action step 1:** Develop a long-term sustainable growth plan for Imperial County as a logistics hub. This strategy should prioritize responsible site selection, incorporating clean energy, electric vehicle infrastructure, and efficient truck routes, while considering future land use, connectivity, and workforce housing. It is important to support projects that minimize community disruption, such as constructing new highways and permanent bridges outside city centers or away

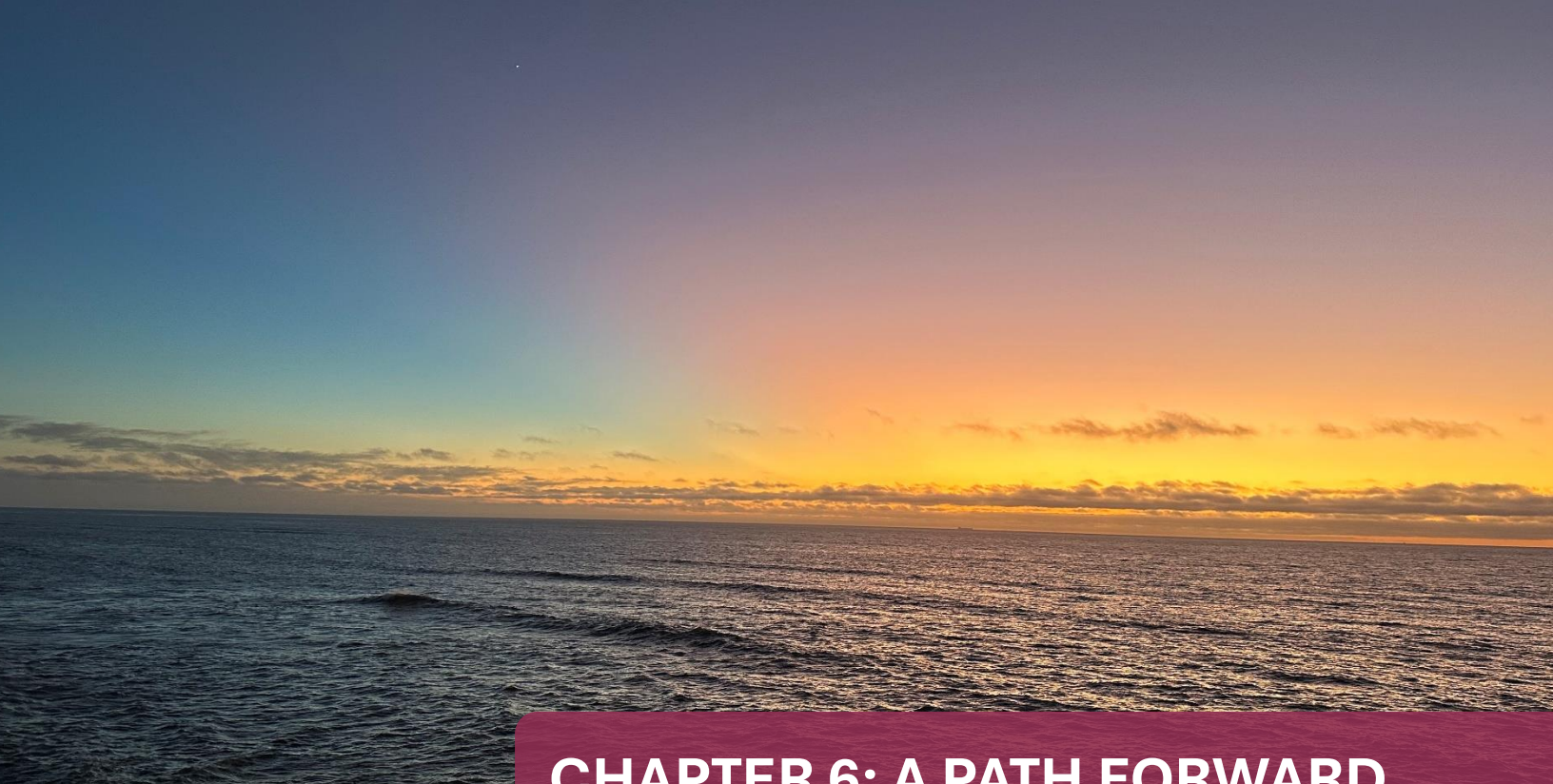
¹³ AB 701 regulates how certain warehouses can set productivity quotas for its workers.

from residential areas, to optimize transportation and reduce traffic congestion and pollution near populated areas. Workforce training and collaboration with educational partners, including Adult Education, CTE, and the K-16 Collaborative, should also be included in the plan. Additionally, local hire provisions, local vendor engagement, and small business development should be integrated into the growth plan to contribute to equitable economic opportunities and benefit a diverse group of people. By implementing a long-term approach to urban planning, Imperial County can ensure that new logistics hubs not only fulfill the demands of the industry but also position the region for sustainable economic and environmental development.

- b. Action step 2:** Develop logistics and warehousing strategically to support local industries, including agriculture, energy, and manufacturing. This involves leveraging the economic activities and developments taking place throughout the county and enhancing logistics to support initiatives such as ingredient processing in agriculture, biofuel production in the energy sector, and battery manufacturing. This would foster a synergistic relationship between transportation and warehousing, and the county's priorities. Likewise, integrating local hire, local vendor, and small business development into this approach would also help to promote a broader circulation of economic benefits throughout the county.
- c. Action step 3:** Support cross-border economic integration. For instance, developing warehousing capabilities along the border with cities such as Mexicali and Calexico can enhance cross-border supply chains, improving the competitiveness of the local shopping experience. Furthermore, Imperial County should secure port facilities and optimize its position as a key port of entry for both goods and people, given its land availability and the increasing complexity of border crossings. Drawing on models from the U.S. and Canada, measures such as pre-entry security checks and electronic locks could be implemented to prevent additional materials from being onboarded after inspection. Additionally, the county can explore expanding Foreign Trade Zones (FTZs), inspection areas, and other facilities to expedite goods movement and improve the efficiency of cross-border trade.
- d. Action step 4:** Address infrastructure deficiencies that limit the full potential of the traded sector. This can include, but is not limited to, upgrading roads, highways, bridges, sewer systems, stormwater management, and broadband access. These deficiencies hinder the construction of critical facilities, the efficient movement of goods, and the transportation of people. While some issues stem from long-term underinvestment in public infrastructure, others are being exacerbated by the impacts of climate change.

Given the potential risks of some activities under the Quality Transportation and Warehousing industry to community well-being, health, and the environment, specific projects should be carefully evaluated. For example, community members shared mixed feedback on data centers (feedback from surveys and in person sessions gathered in November 2024). Some community members expressed concerns about data center facilities, citing issues including their disproportionate placement in economically disadvantaged areas, excessive noise, and high consumption of resources like energy and water, as well as the minimal contributions to job creation or local economic development. At the same time, other community members highlighted the importance of data centers and cloud infrastructure in supporting industries like biotech, life sciences, and healthcare, emphasizing their role in enabling advancements in genomics, telemedicine, and digital health records. Supporters also noted that these centers can drive demand for renewable energy, use energy and water efficient technology, and align with growing digital infrastructure needs. Given these mixed perspectives, it is important to establish guiding principles for any potential projects to minimize unintended consequences, including environmental or community harm, ensure thoughtful site selection, and elevate potential positive impacts including on other industries.

Furthermore, the supporting strategies outlined in this chapter aim to ensure all projects under Quality Transportation and Warehousing demonstrate sustainable practices, uphold labor standards, and contribute meaningfully to the local economy. The strategies also aim to address any potential challenges from logistics hubs that may increase congestion, pollution, and noise, or disrupt nearby residential and natural areas. It is also important to note that facilities should be used exclusively for commercial durable/soft goods.



CHAPTER 6: A PATH FORWARD

This chapter outlines how the Coalition envisions implementing the policies, strategies, and actions recommended in the Regional Plan. It has been thoughtfully developed to ensure that the selection and execution of projects will not only align with the Region's goals but also empower and uplift the communities served. The path forward includes suggestions on how to design an effective governance structure, a process for facilitating funding and projects identified in the plan, and a timeline, with metrics and monitoring to ensure the plan's compliance, vitality, and success. Collaboration and shared expertise across partners are key to creating lasting, transformative change in the Southern Border region.

Revised Governance Structure

While the governance structure of the Southern Border Coalition has successfully facilitated extensive community engagement and education, structural changes can enhance future implementation efforts, maximizing the equitable impacts of economic projects.

Roles and responsibilities

As an overarching requirement, roles and responsibilities must be developed in a way that balances the incorporation of diverse community perspectives, with the need to empower program leadership to move forward with projects that adhere to regional goals. In this capacity, it is essential that the governance structure for the catalyst and implementation phases are clearly defined.

¹⁴ Photo by Dalberg Advisors.

Designing a governance structure should include:

- Creating or re-defining key stakeholder groups (e.g., co-conveners, sector leads, any relevant third-party project managers), and providing them with clear roles and responsibilities
- Defining the decision-making authority across these key stakeholder groups
- Determining the appropriate degree of community involvement that considers the diverse set of needs across the county *while* ensuring projects can move forward in a timely fashion.

Additionally, a set of specific roles and suggestions were outlined by the Regional Task Group in the original submission:

With a commitment to continuous improvement, the Coalition seeks to discuss how to fill the Imperial County Worker Center Sector Lead seat, as there is currently no eligible Worker Center in Imperial County. This will involve identifying where the seat can be shifted to ensure equitable representation, so all voices in the region can be heard and valued.

Additionally, there is a need to solidify the roles and responsibilities of Co-Conveners and Sector Leads in implementing the Catalyst Program. Presently, all Co-Conveners follow identical statements of work; however, there is an opportunity to reprioritize their activities to leverage each organization's strengths and unique contributions. This shift will allow the Coalition to better serve the diverse needs of the Southern Border communities. During the Catalyst Phase, each Co-Convener organization will revisit and potentially revise its role in the Catalyst process.

The Coalition is also considering a restructuring of the Industry Sector Coordinators, exploring the possibility of contracting agencies, groups, or individuals based on the region's needs. The current plan involves hiring five individuals: two supporting Imperial County, two for San Diego County, and one working across the Southern Border and its adjacent regions. However, the Coalition may revise this structure to involve a contractor for specific regional work instead of hiring five individuals, with a final decision expected in October.

To improve communications, the Sector Lead body has requested the creation of an executive or steering committee to facilitate discussions and streamline communications. In addition, the Coalition plans to identify and address participation gaps for underrepresented groups before Catalyst implementation. To address communication challenges, the governance structure may be modified based on committee recommendations, advisory input, or new messaging processes.

Other areas for improvement during the transition to Catalyst include enhancing the flow of

information through a simultaneous feedback loop between Co-Conveners and sector leads, increasing training opportunities in technology, conflict resolution, and facilitation, improving language access, and providing simplified materials for transparent decision-making. Short-form and long-form documentation should also be created to improve readability and accessibility for individuals with diverse educational and professional backgrounds.

Project Prioritization and Selection

To vet the range of potential projects available, the SBC should explore implementing a formal **RFP / NOFA process** (to the extent it can, while adhering to program requirements issued by the state). The SBC can ensure it obtains high-quality proposals by developing a proposal process that follows key steps below (representative and not exhaustive):

1. Identify the potential applicants, including nonprofits, local and/or regional businesses, community groups, etc.
2. Determine channels for promoting the RFP (e.g., individuals, public events / conferences, news outlets)
3. Select and implement technology platforms for submission and communication
4. Proactively assess potential barriers for applicants and devise strategies to mitigate them (e.g., ensuring the process is not biased towards those with greater resources, or experience with grant-writing)
5. Plan the support and resources required to support applicants through the submission period

When evaluating potential projects, the region should **prioritize** opportunities based on degree of adherence to the equity, climate, training, economic, and strategic goals laid out in regional strategies chapter. Summarized below are some of the essential criteria that should be considered across projects:

Employment accompanies a living wage: In recognition that minimum wages are not family sustaining and are insufficient to drive long-term economic prosperity for individuals, projects that provide a living wage should be prioritized.

Opportunities drive long-term employment: Project plans should focus on creating jobs that will exist over the long term, extending beyond temporary phases such as construction.

Lower barriers to entry: Projects should prioritize jobs that do not require degrees or can be accessed through affordable vocational training available to community members. Employers who sponsor training programs for disinvested community members will receive priority.

Career pathways: Jobs must offer clear potential for career progression beyond the entry-level role, creating avenues for long-term growth and stability.

A clearly articulated plan to reach local disinvested communities: Projects must include a well-defined and actionable plan to engage and reach disinvested community members, with prioritization given to projects that give more measurable results and direct benefits to these communities.

Centering disinvested voices as part of the planning and implementation process: Representatives from labor interests, disinvested communities (including Tribal communities and unincorporated areas), and LGBDQIA+ groups must be actively involved throughout the planning and implementation phases to ensure inclusivity and representation.

Finally, as part of the selection process, the SBC should establish a scoring rubric to standardize evaluation of potential projects across a set of defined criteria. By setting clear timelines for the submission and evaluation period, the SBC can ensure adherence to the state's proposed timelines.

Facilitating Funding and Development

To address funding gaps, the Coalition aims to work with philanthropy to develop gap financing for project applicants who may lack cash flow to engage in cost-reimbursable contracts, such as those in the Catalyst Program. Month-to-month, a finance program should cover operational and significant expenditures in project pre-development activities, while, in the long term, social innovation or impact financing should be sought for selected projects. A Sector Investment Coordinator (SIC) is envisioned to provide technical assistance and hands-on support through subregional and regional Sector Investment Coordinators to support project activities or identify external resources that can assist applicants and awardees. A pre-development pipeline should prepare projects for funding through SIC assistance, Coalition-led educational sessions, and a curated resource guide. This approach aims to ensure that projects are well-supported and ready for success when funding opportunities arise.

Timeline

The short-term timeline (Months 1-6) includes engaging in a comprehensive review to reach an agreement on changes to the Southern Border Coalition governance structure, continuing community capacity-building activities, and supporting Sector Leads in Imperial County and San Diego County Tribes in further developing their research and strategies around selected priority issues and opportunities. Additionally, the Coalition plans to develop selection criteria for Catalyst pre-development funds, adopt project intake criteria for Catalyst pre-development grants, and implement an outreach plan to share these criteria, goals, metrics, and the project intake process with the community. A multilingual project submission portal should be

launched, and the most effective structure for implementing the SIC should be identified. The Coalition aims to assist potential project applicants in developing proposals for the intake portal, determine a schedule for Catalyst fund distribution, convene Priority Industry Tables, and develop a targeted funding opportunity distribution list for the Southern Border.

In the mid-term phase (Months 6-24), community capacity-building activities are set to continue, and the first Catalyst projects should be awarded based on criteria adopted by the Coalition. Additional funding opportunities are intended to be sought for exploratory projects that advance the Regional Plan, and the project review process for state Implementation grant applications should remain active. Catalyst exploratory projects are envisioned to be shepherded into developed project plans or strategies for additional funding opportunities. The Coalition also aims to create a repository and alert system for external funding opportunities aligned with the Regional Plan.

Long-term, following the Catalyst phase, the Coalition plans to work with members, including project awardees, to apply for external funding opportunities that advance Regional Plan objectives. The Coalition intends to assist with implementing projects that have secured external funding overlapping with the Catalyst period, and an external document should be developed to inform updates to future Comprehensive Economic Development Strategies (CEDs), regional plans, and related documents that align with Southern Border Coalition goals established during the Planning and Catalyst phases.

Metrics and Monitoring

To ensure the effectiveness and success of the Regional Plan, it is essential to continuously track progress and measure impact. The Coalition anticipates evaluating whether current SBC materials, such as bylaws and working documents, already include success metrics and a vision for implementation. A tracking system for success metrics should be established, capturing data on funding awarded, deliverables from pre-development projects across exploratory and other categories, timelines for project plans to seek additional funding, and funding secured from external sources. Reporting is aimed to be conducted for projects receiving Catalyst funding, including benefit commitments. The Coalition should also track technical assistance requests fulfilled by the Investment Coordinators, as well as gather data on the number of Catalyst project proposals received and the number of community meetings held.

The SBC should additionally work toward the following goals in monitoring projects:

Accountability of industry commitments: It is recommended to establish a process for continual oversight, ensuring adherence to standards (e.g., environmental practices, hiring policies, wages, and other agreed upon impacts) throughout its lifecycle. To support transparency and accessibility, an updated and easy-to-access calendar should be

maintained on the Southern Border Coalition website, calendar invites should be routinely sent, and recorded meetings and related materials should be made readily available to all stakeholders.

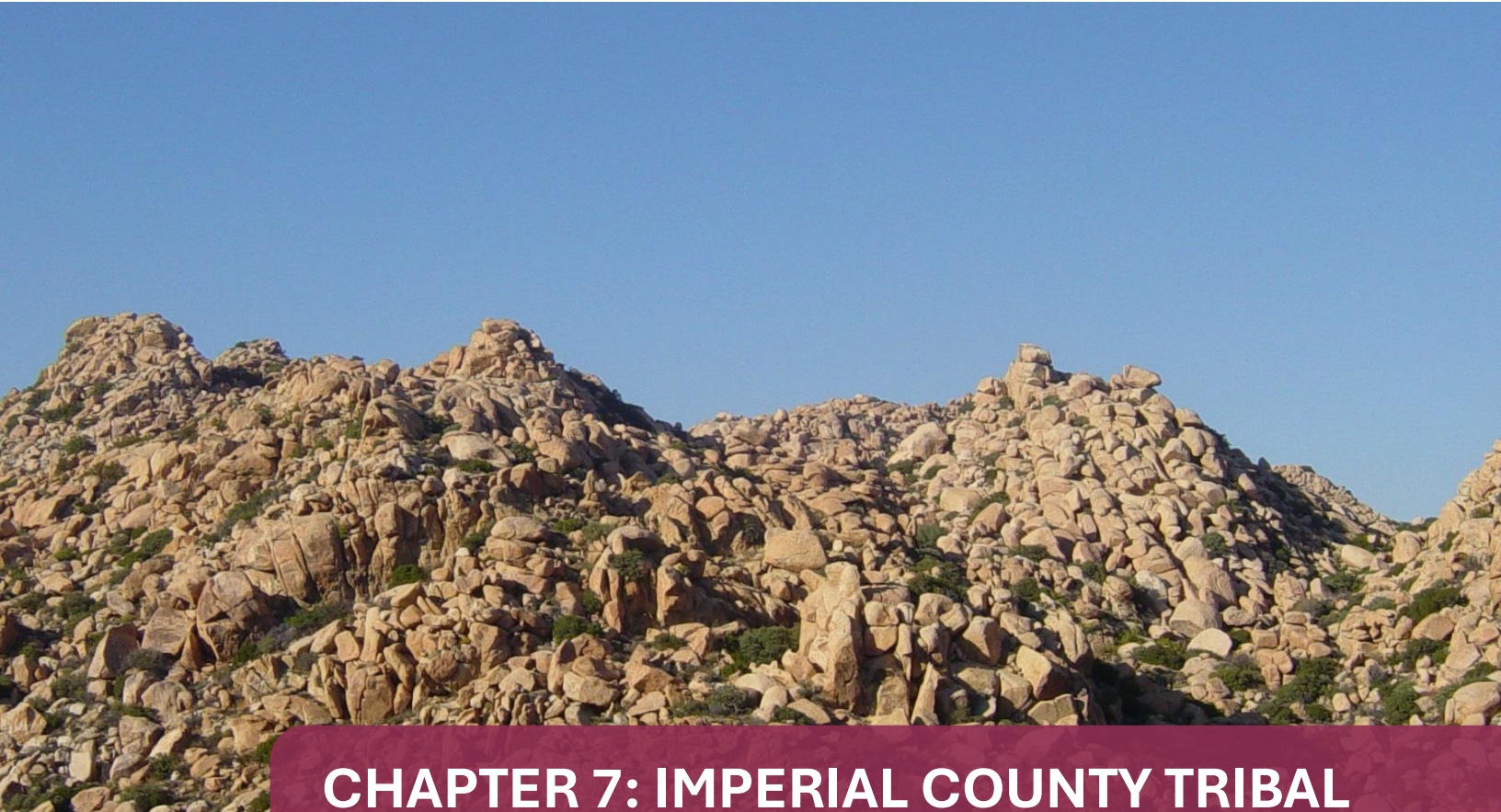
Disbursement of capital pending confirmed adherence to commitments: Enterprises receiving state incentives should receive funding in a phased approach, contingent upon meeting previously established commitments (e.g., economic, wage, environmental, equity, other).

Establishment of formal and consistent communications across key stakeholders: It is recommended that the state, co-conveners, and community stakeholders participate in regular, formal communication to ensure transparency of processes, progress, and goals. Meetings should prioritize the inclusion of diverse perspectives, ensuring community voices are consistently heard and incorporated throughout the decision-making process.

Regional Plan Implementation Strategies

The Regional Plan is intended to be leveraged, to access funding from state, federal, local, and philanthropic sources. Ongoing community engagement and participatory policymaking should be required throughout the implementation of the regional plan and individual project development. Regional partnerships are aimed be cultivated among disinvested communities, local governments, Tribal governments, small and large businesses, community members, nonprofits, and philanthropy, working together to co-create strategies and take action on priority projects, policies, and programs.

Through continuous community engagement and monitoring, the Coalition aims to ensure that the regional plan continues to serve the region's needs, particularly those of disinvested communities and neighborhoods. Thus, this ongoing process aims to ensure that the plan remains relevant and effective in driving positive change.



CHAPTER 7: IMPERIAL COUNTY TRIBAL COMMUNITIES STUDY REPORT

Imperial County Tribal Communities Study Report

California Jobs First Southern Border Coalition

by

Pascha Nierenhausen (*Kwatsáan* and *Sicangu Lakota Oyate*), B.F.A., Imperial County Tribal Sector Lead, Giorgio Hadi Curti, Ph.D., Corrie Monteverde, Ph.D., Kristen Monteverde, M.S., and Monica Elisa Theodosia Ruth, M.A.

8/30/2024

Introduction

The self-stated goal of California Jobs First Southern Border Coalition is to facilitate the creation of a regional plan that is capable of diversifying and equalizing local Southern California border economies with climate change in mind. San Diego County and Imperial County (IC) compose the jurisdictional geography of the Southern Border Coalition, and the Coalition allocated funds for research with and for Tribal communities in each of these two

¹⁵ Photo by Martin LaBar, “Rocks on mountains, West of Imperial Valley, CA” (CC BY-NC 2.0). Available at: <https://www.flickr.com/photos/martinlabar/56880786>.

counties to identify their unique economic needs, structural, social, and environmental challenges, and desired developmental partnerships and outcomes. This report presents the findings of research conducted in the form of four iterative workshops held at the Fort Yuma Quechan (Kwatsáan) Indian Tribe Reservation with IC Tribal communities between June 2024 and August 2024. The information provided in this report is based on IC Tribal communities' self-identified and collectively affirmed contexts, needs, and priorities in building “high road training partnerships (HRTPs)” and “high road economies” that can also productively confront and help mitigate the increasingly harmful threats and trends of colonial- and industrial-induced climate change.

Background historical and geographical contexts and considerations

Opaskwayak Cree scholar Shawn Wilson has noted that “it often takes longer to explain context, background or meaning of a story than it does to actually tell the story” (Wilson 2008:7). This report section begins with background historical and geographical contexts and considerations necessary to situate the findings and recommendations based on stories told by IC Tribal community members. These contexts and considerations must only be additive to the California Jobs First Southern Border Coalition Regional Plan, never subtractive. The full background, information, insights, findings, and recommendations and their implications, explications, identifications, and namings are essential to accurately and respectfully situate IC Tribal community concerns. Any effort—wittingly or unwittingly— to gatekeep, elide, minimize, modify, or otherwise exclude the context, background, and meanings of the presented findings that were developed with direct information and knowledge from IC Tribal community members will be to regenerate and uphold settler colonial institutional and structural systems of possession and power rather than work for the benefits, needs, and desires of IC Tribal community members in working towards socially and environmentally just and inclusive HRTPs and “high road economies” in the aggregating and amplifying face of colonial- and industrial-induced climate change.

All lands, airs, and waters affected by climate change today that pass and flow through and help compose IC are Native lands, airs, and waters, and the political borders and boundaries that outline IC are colonially and administratively constructed and imposed lines that have disrupted a much broader multiaffiliated traditional cultural landscape of the first peoples of the Quechan (Kwatsáan), Kumeyaay, Cahuilla, CoCoPah, and Pai Pai. Today, several members and descendants of other Tribal communities— including Blackfeet, Cree, Choctaw, Diné (Navajo), Kiowa, Lakota, various Pueblos, and many more— live and work throughout IC. These historical and geographical contexts are vital to considering what may—and what may not— count as a “high road economy,” and what the multiplex desired benefits of economic development and partnerships outside mainstream traditional economic ideologies, values, assumptions, thinking, and practice can and should be to and for IC Tribal community

members. In these respects, situating the extreme events and harmful environmental trends of climate change in its colonial and industrial contexts is a vital historical and geographical foundation of consideration for how socially and environmentally just pathways can and should be built to both begin to address and redress systemic barriers of inequity through economic development and increase adaptive capacities to and for IC Tribal communities through HRTPs and “high road economies.”

Under the conditions of the colonial present, Indigenous peoples are both among the first to experience the direct effects of climate change and those who are most burdened with their aggregating consequences—yet, Indigenous Knowledge (IK) and sciences (see Cajete 1999), even with the acknowledgement by the Executive Office of the President, Office of Science and Technology Policy and the Council on Environmental Quality that IK can more “accurately capture the impact[s] ... on culturally or ecologically significant land[s]” (Prabhakar and Mallory 2022:19) and is “an aspect of best available science” (Prabhakar and Mallory 2022:19), is subsumed through ideological filters and structural and institutional guardrails in content and substance if not entirely elided by matters of economic and developmental growth promoted by state and industry actors and interests.

IK is inextricably tied to Indigenous matters of cultural, social, political, and economic sovereignty and associated relationships of community and ecological health and wellbeing (see Norgaard 2014:2), and can be understood “[f]rom a local indigenous knowledge perspective” as:

the freedom to recapture and utilise indigenous knowledge as a peer to [mainstream Western] scientific knowledge, to move it from ‘invisible to visible[,] ... to challenge the fundamental dichotomies of [dominant Western] scientific thought such as object/subject, rational/irrational and White/Black’.... So, to be knowledge-sovereign is to have the ability to choose one’s own knowledge system, and to be able to use it freely to critique dissimilar constructions of knowledge without being subsumed by them [Fre 2018:16].

Like all matters of Indigenous sovereignty, IK is substantively entangled in systems of legal status and standing and “self-determination [as] ... a political right that stems from an underlying moral claim” (Tsosie 2007:1663). Pursuits of advancements in equity for Indigenous communities—economic or otherwise—thus must always be on guard for normalizations and naturalizations of mainstream economic ideologies that institutionally and structurally manifest ethical if not legal violations of Indigenous pathways for self-determination through impositions and filters of hermeneutical and epistemic injustice, including approaches to address and redress the impacts of colonial- and industrial-induced climate change (see Kidd et al. 2017; Tsosie 2017; Tsosie 2012).

Potawatomi social and environmental justice scholar Kyle Whyte explains that “[a]nthropogenic climate change’ or ‘the Anthropocene,’ ... are not precise enough terms for many Indigenous peoples, because they sound like all humans are implicated in and affected by colonialism, capitalism and industrialization in the same ways” (Whyte 2017b:159). He further articulates how:

[t]hinking about climate injustice against Indigenous peoples is less about envisioning a new future and more like the experience of *déjà vu*. This is because climate injustice is part of a cyclical history situated within the larger struggle of anthropogenic environmental change catalysed by colonialism, industrialism and capitalism – not three unfortunately converging courses of history. Today’s climate injustice ordeal reminds us of historic climate injustices that began well before the last 250 years of industrial development [Whyte 2017a:100].

These experiential realities are as historical as they are geographical, and attention must be given in promoting and advocating for diversification and equalization of Southern California border economies to how the vast majority of economic wealth, privilege, and their associated ideologies of unlimited economic growth and capitalistic development of the lands, airs, and waters of the State of California have been at the inordinate expense and imposed impoverishment of Indigenous adaptive capacities and traditional life and lifeway systems in reciprocal relationship with and to these very same lands, airs, and waters. In this sense, and as identified by IC Tribal communities, any economic pathways to effectively and justly confront the effects of climate change must also provide actionable and operational correctives for the colonial and industrial injustices through which they have manifested and of which they reproduce—injustices which often have at their base economic values and valuations of dominant colonial society and the dispossessions and exploitation of Native lands, airs, waters, and bodies that they required—and often continue to require—for their self-professed and self-defined “successes.”

An important point caution and consideration in these contexts is provided by Professor of Native American Studies at the University of New Mexico and enrolled citizen of the Navajo Nation Lloyd L. Lee:

There is a serious problem with Western industrial civilization because of its self-destructive practices that have negatively contributed to global warming and climate change. Therefore, when Indigenous leaders assimilate to Western industrial civilization values and sovereignty, they place Indigenous peoples in serious jeopardy. This amounts to a self-destructive form of Indigenous self-colonization [Lee 2017:162].

In building pathways to HRTPs and “high road economies” throughout IC and beyond, it is vital to be attentive to how so-called “green economies” and “green capitalism” may also work in

narrow, extractive, exploitative, and assimilative ways to contribute, once again, to the experiences of colonial déjà vu for Indigenous peoples through disruptions and destructions of relationships of lands and peoples (Brand and Wissen 2021:). This is particularly likely to occur when Indigenous peoples' "own ways of assessing and defending the value – economic, cultural, spiritual or inherent – of the territory they call home are routinely shoved aside, ignored or suppressed when outside interests make decisions on land use. Countless conflicts over the use of land between communities and corporations – often aided by state forces – are testament to this fact" (Kill 2014:39-40). Questions of time (past, present, and future) and space (land, air, and water), their relations and framings, in identifying viable and inclusive pathways in HRTPs and "high road economies" are thus conceptual and methodological frameworks in need of deep consideration.

Economist Tomas Sedlacek has observed that "[a]mong [the] fields [of social science], economists are probably the only social scientists who have their ideal in the future" (Sedlacek 2011:12, n.22). Considerations, understandings, and visions of the future are essential to the development of HRTPs and "high road economies" that can confront and provide correctives for the social and environmental injustice of colonial- and industrial-induced climate change. As conveyed by Indigenous experiences of colonial déjà vu, equally, too, are those of the past. As noted by anthropologist Andrew Mathews and geographer Jessica Barnes:

[J]ust as states have sought to manipulate the past by celebrating some moments in history and silencing others, so, too, they have linked these selected pasts to particular futures. The question of the past, then, if looked at in the right way, has always also been question about the future [Mathews and Barnes 2016:10].

And:

Visions of environmental futures have ... powerful effect[s] on environmental policies. Often, the environment has been understood by scientists and state environmental institutions in ways that link some parts of the landscape to particular temporalities.... The temporal and spatial frame that is chosen to classify part of the landscape in turn helps set the stage for future-orientated projects of nature protection, natural resource management, or environmental restoration.... Frequently, these temporal and spatial ordering practices have deep and enduring colonial roots....

Thus, visions of different futures and the relationship between present and future are central to political practices both by environmental planners and states, and by countermovements that might oppose their policies. A prediction may sustain the legitimacy of institutions or infrastructures, and call into being specific policies in the present, or it may call into being opposition which undermines policies. In the case of

oil, for instance, both a future with the resource ... and a future without ... have profound implications for the cultural and political present [Mathews and Barnes 2016:16].

Essential to consider and address here is that not all experiences, viewpoints, knowledge bases, and ways of knowing and living with the world are equivalent in understanding and identifying what the future portends. Mainstream Western economists and economics are in many ways the central causes of the increasing threats of climate change that are in immediate need of redress. For IC Tribal communities and other California Tribal communities, this demands contextualization in and full attention to the implications of California Governor Gavin Newsom's Executive Order N-15-19, which acknowledges that:

in the early decades of California's statehood, the relationship between the State of California and California Native Americans was fraught with violence, exploitation, dispossession and the attempted destruction of tribal communities, as summed up by California's first Governor, Peter Burnett, in his 1851 address to the Legislature: "[t]hat a war of extermination will continue to be waged between the two races until the Indian race becomes extinct must be expected";

[T]he State of California's laws and policies discriminating against Native Americans and denying the existence of tribal government powers persisted well into the twentieth century; and

[D]espite these wrongs, California Native Americans resisted, survived and carried on cultural and linguistic traditions defying all odds....

When appropriate levels of consideration and deference to the desires, interests, and trajectories of enhancements or diminishments of adaptive capacities of Tribal communities as defined by Tribal communities are not at the forefront of economic development plans, this both regenerates and aggregates marginalizing, alienating, dispossessing, and discriminatory practices in the twenty-first century. Economic projects of assimilation also present obstacles and barriers to carry on and flourish with cultural and linguistic traditions. Economist Robert H. Nelson (2013; see also Nelson 2003) explains the consequences of a narrow and limited capitalistic and economic focus of mainstream economic thinking and practice on "efficiency," "progress," and "growth-as-development."

With very few exceptions ... economists seldom compare the benefits of economic growth with the costs, usually assuming automatically that the former outweigh the latter.

But growth radically transforms society — and not always for the better. Economic gains often come hand in hand with personal, social, cultural, and environmental losses that economists too easily ignore; it is simpler to make judgments about what is

economically beneficial based on quantifiable factors and impersonal market mechanisms [Nelson 2013:48].

Sedlacek has similarly argued that mainstream economists and economics “have overemphasized the mathematical and neglected our humanity. This has led to the evolution of lopsided, artificial models that are often of little use when it comes to understanding reality” (Sedlacek 2011:9). Jeremy B. Rudd, Senior Adviser in the Program Direction Section of Research and Statistics and member of the Board of Governors of the U.S. Federal Reserve System, likewise underscores that “[m]ainstream economics is replete with ideas that ‘everyone knows’ to be true, but that are actually arrant nonsense” (Rudd 2021:1). The result has become that the dominant and dominating:

mainstream economics approach to climate and environmental policy and modelling is populated not only with abstractions that collapse the complexity of our globalised economy, climate and biosphere into improbably simple predications, but also with countless subjective decisions disguised in the language of objectivity [Buller 2022:43].

And:

[When p]ainted with the brush of [supposed] objective science and rationality and enveloped in the mythology that there is no alternative, mainstream economics continues, with great effect, to cleanse our ecological crisis and its profoundly political origins and resolutions [Buller 2022:51].

As noted by political economist and author Adrienne Buller, there is a destructive process entrenched in the cognitive dissonance and logics of mainstream economic, technocratic, and governmental practice, as “rather than appraise our economy from the perspective of supporting life – recognising the ways in which our economic institutions and systems currently drive social and ecological crisis – instead [they] appraise life, and any action taken to protect it, in economic terms” (Buller 2022:9-10). There therefore must be direct awareness to and correctives for the fact that “[p]atriarchal whiteness is an invisible unnamed organizing principle that surreptitiously shapes social relations and economic development” (Moreton-Robinson 2015:66), and “[t]he patriarchal state reinforces the invisibility of a possessive investment in patriarchal whiteness by normalizing it in discussions about economic development and commitments to the nation” (Moreton-Robinson 2015:77).

The consequences of this has been that by “necessarily reducing impacts to a dollar value, many of the things we most cherish – our mental wellbeing, access to nature, thriving ecosystems, and so forth – and whose value is intrinsic and unmeasurable, rather than monetary, are excluded from the decision-making frameworks and justifications of governments” (Buller 2022:47-48). It is a fundamental necessity then— in building pathways to HRTPs and “high road economies” to productively and inclusively confront and help mitigate

the increasingly harmful threats and trends of colonial- and industrial-induced climate change, particularly on disinvested and marginalized communities—to operationally correct for what Rudd has acknowledged of outstanding and persisting concerns that “the primary role of mainstream economics in our society is to provide an apologetics for a criminally oppressive, unsustainable, and unjust social order” (Rudd 2021:1, n.2).

Whyte has noted how state forces of “[c]olonialism, such as U.S. settler colonialism, can be understood as a system of domination that concerns how one society inflicts burdensome anthropogenic environmental change on another society” (Whyte 2017a:91). Settler colonial studies scholar Patrick Wolfe has also identified how, as a system of domination and unjust social order, settler colonization:

is at base a winner-take-all project whose dominant feature is not exploitation but replacement. The logic of this project, a sustained institutional tendency to eliminate the Indigenous population, informs a range of historical, economic, and political practices that might otherwise appear distinct – invasion is a structure not an [isolated] event [Wolfe 1999:163].

Science and research programs and agendas may be equally dominant, dispossessive, exploitative, assimilative, and unjust because they often work in institutional and structural concert with programs of economic growth and development as “associate[s] of colonial power” (Alvares 2010:220; see also Tsosie 2012) in their deployments by:

[p]atriarchal white nation-states and universities [that] insist on producing cultural difference in order to manage the existence and claims of Indigenous people. In this way the production of knowledge about cultural specificity is complicit with state requirements for manageable forms of difference that are racially configured through whiteness [Moreton-Robinson 2015:xvi].

As documented by the Balmir Inclusive “Equity Assessment Report” dated July 31, 2024, the California Jobs First Southern Border Coalition project has in several ways programmatically operated through, been complicit with, and regenerated institutional and structural configurations and subsumptions of “white possessive logics” that are “operationalized within discourses to circulate sets of meanings about ownership of the nation, as part of commonsense knowledge, decision-making, and socially produced conventions” and “underpinned by an excessive desire to invest in reproducing and reaffirming the nation-state’s ownership, control, and domination” (Moreton-Robinson, 2015:xii).

What has been notably lacking in design, concept, methodology, and implementation of the California Jobs First Southern Border Coalition project are acknowledgements of and commitments to principles and pathways of Indigenous Environmental Justice (IEJ), which “is required in order to address [both] the challenges of the ecological crisis [of colonial- and

industrial-induced climate change] as well the various forms of violence and injustices experienced specifically by Indigenous peoples. This must be grounded in Indigenous philosophies, ontologies, and epistemologies in order to reflect Indigenous conceptions of what constitutes justice” (McGregor et al. 2020:35). This is especially vital to be conceptually, methodologically, and operationally attentive to in studies and projects that pursue diversity, equity, and justice with and for Indigenous peoples as they intersect and entangle legal and economic matters, because, “[w]ithin the law, hermeneutical injustice commonly occurs when there is no recognized legal category for the category of harm experienced by ... Indigenous group[s]” (Tsosie 2017:361), and because for “Indigenous Peoples persistent injustice is a daily experience that is perpetuated under a legal system that subsumes, in neutral terminology, a given outlook and understanding about time, place, and human identity” (Laluk et al. 2002:665).

Within the strict confines of the time, funding, functional, and systemic limitations of the California Jobs First Southern Border Coalition project, the “research” conducted with IC Tribal communities and the content, structure, and substance of this report was designed to navigate away from and counter such possessive logics, outlooks, trajectories, and legacies and put at the forefront as entrance, navigation, and exit points IC Tribal community philosophies, ontologies, axiologies, and epistemologies that reflect their conceptions of what constitutes justice, inclusivity, diversity, and equity in legal matters, economic development, and building local HRTPs and “high road economies.”

Methodologies, approaches, and associated considerations

Linda Tuhiwai Smith (Ngāti Awa and Ngāti Porou, Māori) has identified how “Indigenous peoples across the world have other stories to tell which not only question the assumed nature of [Western scientific] ideals and the practices that they generate, but also serve to tell an alternative story: the history of Western research through the eyes of the colonized” (Smith 1999:2). Indigenous scholar Eve Tuck and her colleague K. Wayne Yang have similarly explained that “[r]esearch is a dirty word among many Native communities (Tuhiwai Smith, 1999), and arguably, also among ghettoized (Kelley, 1997), Orientalized (Said, 1978), and other communities of overstudied Others” (Tuck and Yang 2014:223). Part of the reason for this is that academic and governmental research programs associated with Indigenous and other marginalized and exploited communities and peoples have often been—and continue to exceedingly be—intrusive, extractive, and possessive in logic, design, implementation, interpretation, and outcomes (see Moreton-Robinson 2015; Tsosie 2012; Smith 1999; Whitt 2009).

Shawn Wilson in his book *Research is Ceremony: Indigenous Research Methods* (2008) provides important conceptual and methodological guidance for studies and research programs conducted with and for Indigenous communities that:

the shared aspects of an Indigenous ontology and epistemology is relationality (relationships do not merely shape reality, they are reality).... The shared aspects of an Indigenous axiology and methodology is accountability of relationships. The shared aspects of relationality and relational accountability can be put into practice through choice of research topic, methods of data collection, form of analysis and presentation of information [Wilson 2008:7].

While the “research topic” for this study was already somewhat defined by the nature of the Southern Border Coalition California Jobs First project, the methods of “data” and information collection and protection, forms of analysis, and presentations of information of and for IC Tribal community were not. To approach IK and Tribal insights, guidance, and lessons under that dictates of “data” that require “white possessive” (Moreton-Robinson 2015) filters and interpretation, is to do epistemic and hermeneutical violence qualitative violence to forms of rightful Tribal knowledge ownership and knowledge sovereignty. To best ensure the study worked in the interest of IC Tribal communities to address their wants and needs to equalize and diversify local economies with climate change in mind, the methods of information collection and forms and presentations of analysis and expression all enter into, account for, and exit through the middles of deep time and deep space Indigenous “position[s] within reciprocal relations with all of creation and with past, present, and future generations” (Starblanket and Stark 2018:176).

Deep time here can be understood as a simultaneous way of “looking back far into Earth’s history, and looking forward far into the future” (McGrath, 2020), and deep space refers to both “the production of space intensified and writ large,” and that which “identifies the immediacy, materiality, and power of ... uneven geographic development as it is perpetuated by, and lived according to, unjust social systems” (McKittrick, 2006:15). Deep time and deep space productions are as ideological (ontological, epistemological, and axiological) as they are social (human, non-human, and more-than-human), and as material (geographical) as they are temporal (historical), and work in intersectional and interrelational ways to enhance or diminish, increase or decrease capacities for “collective continuance” (Whyte 2018) of IC Tribal communities and adaptive capacities for viable Indigenous futures (see Deloria et al. 2018).

To serve IC Tribal communities within the confines of the California Jobs First Southern Border Coalition project in inclusive and collaborative ways to address structures and institutions of disinvestment while identifying pathways that may enhance or diminish community life, the study sought to learn directly from IC Tribal communities through the terms, knowledge, and values of their own associated worldviews, practices, and how their deep time and deep space relational life/way systems can and should ground any regional plan and economic and developmental decision-making through a series of community-based workshops. The study

team sought to learn from IC Tribal community members of their wants, needs, desires, interests, and concerns for economic development and the unique challenges they face from colonial- and industrial-induced climate change through their own systems of knowledge, value, insight, and perspective. Vital to the validity and soundness of the study approach, it was necessary, as Anishinaabe scholar Deborah B. McGregor explains, to respectfully approach and contextualize the Indigenous knowledge of IC Tribal communities as a system, as this immediately:

acknowledges the educational, historical, and legal structures that exist in Indigenous societies and that both give rise to knowledge and ensure its functionality and continuity. “Indigenous knowledge” is not merely a body of information but rather encompasses all those systems that create, analyze, maintain, apply, and transmit the knowledge. These systems of knowledge creation and embodiment have supported Indigenous nations for countless generations [McGregor 2022:19].

To these ends, the study team conducted four iterative workshops at the Fort Yuma Quechan (Kwatsáan) Indian Tribe Reservation. The first three workshops were held at Quechan facilities and synchronously through Zoom with IC Tribal communities. The fourth was held entirely by Zoom. All workshops occurred between June 2024 and August 2024 (Imperial County Tribal Communities Report Table 1).

Imperial County Tribal Communities Report Table 1: IC Tribal Community Workshops

Workshop Date	Location	IC Tribal Community Attendees
Workshop 1 – June 22, 2024	Quechan Community Center and Online	47 (in-person), 10 (online)
Workshop 2 – July 17, 2024	Quechan Casino & Resort and Online	56 (in-person), 13 (online)
Workshop 3 – July 26, 2024	Quechan Community Center and Online	300+ (in-person), 9 (online)
Workshop 4 – August 17, 2024	Online	37 (online)

The workshops worked through and applied aspects of and principles and sensibilities informed through “Radical Indigenism” (Garoutte 2003), “Indigenous Community Research Methodologies” (Unsworth and Alfred 2011), “symmetrical worldview analyses” (Walker 2015), “critical ethnography” (Thomas 1993), and “geo-ethnography” (Anderson 2012; Swanson 2014:57; Till 2005) and synthesized them with approaches, techniques,

sensibilities, and methods informed by Critical Bi-cultural Pedagogy (CBP) and Participatory Learning and Action (PLA). CBP is a program of educational empowerment that allows for simultaneous movements of decolonization and re-Indigenization through the raising of questions and issues that can facilitate deep provocations, problematizations, and critical analyses of societal and economic status quos. PLA is a method that promotes community interfacing and provides a vehicle for people to share, discuss, and expand their knowledge related to particular contexts and situations as well as to effectively prioritize, monitor, plan, and act at the community level. Together, CBP and PLA approaches coupled with the different methodological sensibilities assisted with fulfilling researcher and study team responsibilities to IC Tribal communities—as identified by the Smithsonian National Museum of the American Indian—to:

decolonize research methodologically: to use research methods that are collaborative and reciprocal rather than exploitative and authoritative... [T]o decolonize research epistemologically: to understand Indigenous cultures on their own terms, via their own worldview[s], without imposing Western knowledge structures on them ... [and] to ensure protection of Indigenous intellectual properties [Herman 2015:1].

To confront and decolonize the ideological, social, and material realities of unjust social systems of settler colonial governance and academic institutions and working through methodologies that “do no harm” (Herman 2015:8) to—and which do not seek to extract, possess, and exploit data, information, or tangible or intangible resources from—Indigenous communities, it was also helpful to deliberately work through principles of critical ethnography and a symmetrical worldview analysis. Critical ethnography presents methodological and conceptual pathways for identifying complex relations of the local and global that help “describe, analyze, and open to scrutiny otherwise hidden agendas, power centers, and assumptions that inhibit, repress, and constrain” (Thomas 1993:2). Palmer and Caldas note:

Critical ethnography is an approach that draws on research and theory to critique hegemony, oppression, asymmetrical power relations, and the normalization of these structures in society, in order to potentially foster social change in direct or indirect ways...What sets critical ethnography apart is its focus on the way individuals within a marginalized community engage in praxis – a cycle of action and reflection – and on how members of the community exercise agency for cultural production and transformation [Palmer and Caldas 2015:2].

A symmetrical worldview analysis simultaneously involves the examination of mainstream worldview(s) and the developing of understandings of the worldviews of the people a researcher or researchers are working with and for (see Docherty 2001 and Walker 2015).

Scholar and enrolled member of the Cherokee Southwest Township Polly O. Walker explains:

Symmetrical worldview analyses both enhance understanding of one's own out of awareness aspects of culture (which usually simply appear as the normal way of doing business), as well as the visible and less visible aspects of others' cultures.... A worldview analysis ... includes an understanding of how people from a particular cultural group would describe what is real, how the real is organized, what is important, how one comes to know, and how one should ... act. Nevertheless, worldviews are neither static nor created in isolation [Walker 2015:162].

Assisting with a symmetrical worldview analysis was the use of mental, mind, or cognitive mapping exercises conducted during the second workshop to gain fuller and more informed insights and build better understandings of how IC Tribal community members “understand and know the environment” and to help “simplify, code and order the endlessly complex world of human interaction with the environment” (Kitchin 1994:2). At the direct request of IC Tribal community members who took part in the first workshop, the third workshop brought in speakers (Imperial County Tribal Communities Report Table 2) to speak on different subject matters that could address IC Tribal community concerns expressed to date and which can help facilitate and/or be leveraged for HRTPs and “high road economies” to have productive outcomes as identified and define by IC Tribal communities.

Imperial County Tribal Communities Report Table 2: Workshop 3 Subject Matter Speakers

Workshop 3 Speakers	Topic	Position and Affiliation
Kristen Monteverde, M.S.	Green Stormwater Infrastructure (GSI)	Assistant Professor of Geography, Mesa College; Lecturer, San Diego State University Department of Geography.
Pascale Joassart-Marcelli, Ph.D.	Food Security and Food Sovereignty	Professor of Geography, Director of Urban Studies and Food Studies programs, founding Co-Director of the Center for Better Food Futures, San Diego State University.

Bailey Smith, M.S., & Johanna Roth, MPH, MCP	California Air Resources Board (CARB) and CA Climate Initiatives (CCI)	Manager, Climate Investments Assessments Section, Sustainable Transportation and Communities Division & Air Pollution Specialist, Climate Investments Assessments Section, Sustainable Transportation and Communities Division.
Giorgio H. Curti, Ph.D.	Cultural Resource Management (CRM): Pathways of Leverage for Tribal Rights, Opportunities, and Knowledge Sovereignty	Socio-Cultural Geographer and Critical Ethnographer, Cultural Geographics Consulting (CGC); Adjunct Professor and Lecturer, San Diego State University Department of Geography.

The iterative nature of the workshops was designed to safeguard a process of free, prior, and informed consent and, following principles of “Applied Indigenous Community Research Methodologies,” to follow under the time, space, funding, and systemic constraints of the project “a strict research ethics regime of continuous consultation with all of the communities involved throughout all phases of the ... [study] in order to ensure that the research is accessible, credible, and reflexive” (Unsworth and Alfred 2011:4).

Geo-ethnographic principles assisted in this process by “focus[ing] on why people make places to create meaning about who and where they are in the world, and how, in the process of place making, they communicate feelings of belonging and attachment” (Till 2005:11), and that methodologically and conceptually “allow for more nuanced understandings of how social and spatial relations are expressed across scales in an increasingly complex world” (Swanson 2014:57). All of this was synthesized with and complemented by the holistic sensibilities and responsibilities of “Radical Indigenism,” which is a critical demand of researchers to both acknowledge and practice the fact that “American Indian cultures contain tools of inquiry that create knowledge ... [and] ... by this construction of Native cultures, one [must] ... draw upon them as part of a process of learning about the world” (Garrouette 2003:108).

Challenges and limitations

The design, implementation, and overall success of this study with and for IC Tribal

communities faced several challenges and limitations, many of which were born directly from structural and institutional inattention and irresponsibility of the fiscal agent for the California Jobs First Southern Border Coalition, the San Diego State University Foundation. Many of these challenging factors and breakdowns have been identified and named by the above noted Balmir Inclusive “Equity Assessment Report.” In addition to the specifics of obstacles and challenges outlined in the Balmir Inclusive report, there was a direct attempt by California State, San Diego State University Foundation, and Southern Border Coalition agents and actors to interfere in and disrupt the workshop study program with no communication with the IC Tribal Community Sector lead and study team, which directly jeopardized to undermine obligations the team had and continues to have to IC Tribal communities and risked a spread and sowing of distrust among IC Tribal community members.

From the outset, San Diego State University Foundation and the Southern Border Coalition personnel gave contradictory messaging and failed to provide transparency on decision-making and budgeting that impacted both the implementation of the study as initially designed by the study team and approved by the San Diego State University Foundation and failed to account for economic challenges study outreach team and IC Tribal community members faced in accessing technology and transportation in pursuit of the broadest possible IC Tribal community inclusion. Funds were not allocated or dispersed expediently, leading to conflicts within some members of the outreach team and larger IC Tribal communities, resulting in the inability to conduct and provide the depth, outreach, and transportation services originally planned for in the design of the outreach and study throughout IC. Further, promises of teaching and training to the IC Tribal community Sector lead were offered for navigating the bureaucratic complexities of the project and never followed through by the Southern Border Coalition, with follow-up requests on this matter also met with persistent silence.

Because of the time and funding limitations of the project, opportunities for iterative review and the full processes of free, prior, and informed consent with each participating IC Tribal community member was not possible. To protect against violations of any information sharing and cultural sensitivity concerns and respect processes of free, prior, and informed consent, direct quotes are provided minimally and anonymously and no mappings are provided. Select notes and quotes were taken in real-time by study team members. All of the information belongs to the IC Tribal community members who shared it with the study team, and the study holds obligations for the protection of identities, sensitive and confidential information, and data and information knowledge sovereignty. This limits how data and information is— and can be—presented and accredited in this report.

Finally, because the California Jobs First Southern Border Coalition project was at its base

designed and established around imposed settler colonial spatial systems such as census tracks and national and international borders, attempting to account for the realities faced and experienced by a multitude of Tribal communities with deep time and deep space connections and affiliations to IC were erroneously characterized as outside the scope of the study. To in part address this, repeated attempts were made by the IC Tribal community study team to engage the Project Director and the San Diego County Tribal community study team, the latter of which worked through the Southern California Tribal Chairman's Association (SCTCA). The IC Tribal Community Sector lead and outreach and study team had to be careful and mindful to not to violate other Tribal practices and protocols of approval and authority given to SCTCA as part of the California Jobs First Southern Border Coalition project, and the repeated lack of response from and collaboration by the Project Director and San Diego County Tribal Community Sector lead prevented more robust engagement and inclusion with SCTCA-member Tribes with deep and living relationships and connections, in, with, and to IC.

Summary of lessons and findings from IC tribal communities

Through the iterative series of workshops, select IC Tribal community contexts, needs, and priorities in building HRTPs and “high road economies” were identified by the study team inclusive of ways to productively confront and help mitigate the increasingly harmful threats and intensifying trends of colonial- and industrial-induced climate change on and to IC Tribal communities. Each of the priorities outlined below should be approached as “Planning Projects” either through Comprehensive Economic Development Strategies (CEDs) or other planning processes that will be essential to inclusively and

adequately prepare IC Tribal community governments to apply for future implementation funding, applications for different state or federal grants, and to leverage any associated legal and regulatory processes to ensure appropriate Tribal authorities and IK practitioners are employed and fairly compensated for their special expertise as part of associated and applicable environmental and historic property/tribal cultural resources review processes.

As identified and defined by IC Tribal communities, pathways to “high road” economic development in IC requires multilayered and multidimensional considerations that cannot be adequately addressed through mainstream economic thinking. Hegemonic economic practices often enter, exist, filter, and subsume questions of IC Tribal community priorities through a normalizing and privileging of the needs of industry interests, economic valuations of nature, and/or ideologies of unlimited economic growth. As made clear, affirmed, and re-affirmed by IC Tribal community members, this will neither *diversify* nor *equalize* local economies for IC Tribal communities, nor will it counter the logics and values that have manifested colonial- and industrial-induced climate change. Rather, IC Tribal community values, IK, deep time and deep space relational life/way systems, and definitions of

“benefits” must be at the forefront.

Questions were asked by IC Tribal community participants of “[i]f the industry comes in, what are they willing to give back to the community?,” and repeated emphasis was placed on priorities of reciprocity where the *benefits* offered by HRTPs and “high road economies” must be first and foremost be based in “[p]roviding jobs that will be better for mother earth.” This sentiment was also clearly expressed through the content and substance of numerous cognitive maps by IC Tribal community members during Workshop 2. Other insights offered by IC Tribal community members through the series of workshops included:

“I would like for our community to have wells; safer parks, livestock and trees planted throughout our community.”

“We need a self-sustained community. We used to have our lifestyle. Chicken coops, greenhouses, solar energy, well water. To see the community become a booming place. Trees and plants everywhere. We don’t know what this world ways is going. To self- sustain in our community. I believe that there are grants for greenhouses. They have 3 greenhouses as big as doublewides. I know that there are state regulations. I think having greenhouses to grow your own crops to self-sustain. All the fruits and veggies can be give o those who don’t have. Livestock, pigs, chickens. Would be very helpful. More natural and not harmful pesticides. Farmers are using the land but the community is not allowed to use the land. Streets and lighting need to be fixed. Need to have a roadway for the scooters or bike lane. Elders cannot drive are taking taxis. Even if the community has a few people working for the tribe, to have a free service. Taxis are expensive. Free local transportation for groceries, doctor’s apt (dialysis). Youth can be part of growing and maintaining crops, and one day, they will be the next self-sustaining generation.”

“We need leaders. We need tribal leaders. We need to have something for our people ... Farming ... they’re making money off of us. We’ve got outside forces helping us more than our own people (tribal leaders). We victimize ourselves.”

“We got to wake up and make someone responsible for what we’ve been going through. Water land environment ecology. We have to think about that.”

“We need to come back to how communities were.”

On these fronts, IC Tribal community members stated that their experiences living in rural communities required different sensibilities of needs and values, and they cautioned repeatedly against the false promises and “greenwashing(s)” of so-called “green

economies.” Participating IC Tribal community members showed little interest in or enthusiasm for intrusive and extractive industries, including those advocating and promoting gold or lithium extraction as forms of “resource colonialism” (Whitt 2009). In fact, more than once IC Tribal community members shared that other community members were hesitant to contribute to the workshops because they were suspicious that the study team was working on behalf of or in the interests of the lithium industry. Therefore, instead of placing and entering through economic privilegings and industry contexts first, what the IC Tribal community study team learned is contextualized through *relationships* with *water*, *air*, and *earth* as pathways to and for corrective and adaptive capacities for IC Tribal communities are what must serve as the basis for HRTPs and “high road economies.”

Some desired and needed IC Tribal community projects and priorities are large in scope and scale, such as green stormwater infrastructure. Others are much smaller, but no less vital, particularly those pursuing land returns for small-scale farming and the development of a local food cooperative or marketplace for Tribal community-grown agriculture. It is important to recognize that each of these topics through their different scales intersect and, to be most effective in building community-desired jobs and “high road” economic pathways and partnerships that provide desired community benefits and that can begin to address and redress processes of colonial- and industrial-induced climate change, should be co-constitutionally designed and implemented to work interdependently and holistically. Further, IC Tribal community members stressed that all industry projects throughout IC should provide training and tools (intellectual and physical) for at least 1-2 IC Tribal community members and associated guaranteed long- term employment. For example, any development of sidewalk safety infrastructure, such as street lights, should offer training on how to construct and maintain this infrastructure and leave behind the physical tools and equipment necessary for these services.

Other identified community development and job needs can be approached through community benefits enabled through practices of corporate social responsibility, where economic development and job offerings not immediately within a given industry’s sphere of action or interest can also support desired community infrastructure and lifeway values and systems. Environmental and historic property/cultural resource processes (e.g., National Environmental Policy Act [NEPA], National Historic Preservation Act [NHPA], and/or California Environmental Quality Act [CEQA] and its Assembly Bill 52 [AB 52]) will also apply to the vast majority of development projects throughout IC, and these offer relatively consistent and available job prospects for IC Tribal communities. The Pueblo of Zuni Tribe previously identified how, in a July 1, 2021, letter to the Biden-Harris Administration and the Office of Management and Budget (OMB) in response to federal requests for comments on Executive Order (EO) 13985, *Advancing Racial Equity and Support for Underserved Communities Through the Federal Government* (subsequently reinforced in EO 14091,

Further Advancing Racial Equity and Support for Underserved Communities Through the Federal Government), environmental and historic property/cultural resource compliance processes “can affirmatively and equitably be applied and programmatically operationalized to both address and provide solutions to some of the most intensive underlying causes of systemic inequities” (Panteah 2021:1) for Native peoples. As stated by the Zuni Tribe in this letter and conveyed in sentiment by IC Tribal communities:

Any sincere effort to address and advance equity and support by the government for underserved Native communities ... must come to terms with- and simultaneously

provide actionable and material correctives for ... the ongoing spatial dispossession and alienation imposed by American colonial-settler society on Native American geographies and human-environment relationships and practices [Panteah 2021:3; see also UAIC 2022].

All lands, airs, and waters of IC are Native lands, airs, and waters. All industries and economic development plans that seek profit from these lands, airs, and waters must start giving back in holistic and socially and environmentally responsible and reciprocal ways to create, support, and sustain equity and job quality among and for IC Tribal communities. The design of the California Jobs First project to address Tribal community needs through neoliberal capitalistic operations of “competition” is thus not only inappropriate, but negligent in governmental responsibility and in pursuit of IEJ, as it works to normalize, strengthen, and enforce systemic inequalities via “commands [on industry] competitors to interpret the rules [of economics] in a purely self-interested fashion” (Davies 2017:69). Entering and existing through community benefits and social, environmental, cultural, and geographical justice correctives first and foremost supported by corporate social responsibilities to communities rather than industry defined needs and solutions to address those needs and ultimately based in and delineated by profit margins and quarterly earnings is essential to build HRTPs and “high road” economic pathways in ways that can both diversify and equalize local economies for IC Tribal communities while inclusively and productively addressing and *redressing* harms and challenges of colonial- and industrial-induced climate change on these same communities—human, non-human, and more-than-human alike.

Water

Summary: IC Tribal communities stressed that trustworthy, accessible, affordable, and clean sources of drinking water are a right not a privilege—and this right is deeply lacking throughout IC. Water quality, cost, and availability is a concern, not only for Elders, but for the IC Tribal community members who are experiencing health impacts from diseases such as diabetes and those suffering from dehydration. Greater availability of water for both

drinking and to grow culturally significant crops is needed. Regular water quality testing for pesticides and other impacts from agriculture should be considered along with greater filtration of water entering homes throughout IC Tribal community dwelling and settlement areas.

Project	Description
Home water filtration systems	• “Filtration system for fresh water is needed” • “Clean drinking water for elders” • Clean water for the elders with diseases and diabetes who can’t drink water • “Water problem... filters installed in pipes and showers for the older houses. It’s not filtered well”
Green Stormwater Infrastructure	• Kumeyaay Elders and IC Tribal community members specifically identified concerns over radiation in water and need for preventative measures • More water wells • “Keeps our people happy - access to clean water for our elders - Clean water to grow plants - chemical free” • More restrictions on pesticides • Non-GMO spraying on sovereignty land... need monitoring- large small scale to address • Using green infrastructure to address cumulative impacts of pollution
Water quality testing	• Water is so bad they won’t even test it. Water testing studies need to be funded and conducted

Air

Summary: IC Tribal communities identified how dust and pollution causes degradation of the land and landscape, impacts to native and Tribal vegetation and culturally significant species such as mesquite.

Important to consider here is that for a multitude of Native peoples, the simple terms “land” and “landscape” often work as expressive “shorthand for land, water, air, and subterranean earth ... [as interrelated elements that are] imbued with the experiential sense making ... [,] long relationships and ... practices and knowledges that have emerged from those relationships” (Tuck and McKenzie 2015:55). In these holistic ways, IC Tribal community members identified the need for the return and stewarding of more native species, specifically tree species, to improve local air quality and cool the environment and

stressed the vital need for these and other direct actions to minimize and mitigate air pollution and its processes that can be characterized as “slow violence,” or:

a violence that occurs gradually and out of sight, a violence of delayed destruction that is dispersed across time and space, an attritional violence that is typically not viewed as

violence at all. Violence is customarily conceived as an event or action that is immediate in time, explosive and spectacular in space, and as erupting into instant sensational

visibility.... [Slow violence is instead] a violence that is neither spectacular nor instantaneous, but rather incremental and accretive, its calamitous repercussions playing out across a range of temporal scales [Nixon 2011:2].

Numerous researchers have recognized that “slow and fast violence are not separate but mutually constitutive categories, ... [and] victims of slow violence are often able to observe the attritional impact of slow violence via increased mortality and health issues among community members as well as gradual decays in surrounding [environments]” (Lee et al., 2022:5). Addressing and redressing the presence and effects of slow violence from air pollution manifested by and/or emanating from roadways, agriculture, trucking, and other industries, and cross-border pollutants (e.g., from Arizona and Mexico) and managing air quality into the future is a priority for IC Tribal communities.

Project	Description
Monitoring and protection services	• Air quality and ways to improve this. “How do we go about getting the government to stop chem trails over land, affects water/air quality and crops as well. It’s falling down to our vegetation.” • “Dilemma... rural community... plowing behind [her home] and creating dust... poor air quality... main roads with trucks, still picking up dust. Manage and mitigate air pollution.”
Protection from air pollutants and heat-related events through Green building infrastructure/ purification practices and cooling services for homes and buildings.	• Summer Months → leave from July/Aug/Sept paid employment - so they don’t risk their health → dehydration or pass away • “We need more trees to breathe ... it’s way too hot”

Earth

Summary: Reconnecting Tribal members back to the land is a restorative process both for IC Tribal community members and the broader (human, non-human, and more-than-human) environment. Increasing the knowledge of Native lands to restore and protect natural resources is a top priority. Community gardens, Tribal nurseries, reclaiming agricultural lands back for Tribal contributions and uses, replanting and stewarding culturally significant species and bee farming are ways IC Tribal community members identified pathways to jobs that can sustain lifeways and pursue food justice, security, sovereignty, and equity. IC Tribal communities place importance on sustainable economic practices like Tribal farming and gardening rather than extractive industries such as lithium mining.

Project	Description
Return of Native plants and first foods through community gardens, food coop/local market, Tribal nurseries,	• “To have a better knowledge of the natural environment and protecting and restore own Native lands & natural resources.”

natural/native vegetation and agricultural lands	• “We need our trees and grasses back” • Natural habitat availability, cultivation, and jobs for stewardship • Tribal nursery (shade, beans, education, school) • Natural and not harmful pesticides (natural farming/agriculture/cultivation) • “For once we should all have our full revenue of our own lands.” • “Be kings and queens of our own lands.” • Types: Mesquite trees, corn, tomato, squash, Mexican bird of paradise, figs, mulberry, cottonwood (Ficus), wheat, cotton, medicinal plants (vicodin, arrowhead), • “Trying to get back some agricultural lands... can be set aside to plant native vegetation (mesquite) as a food resource and a tribal nursery. To start from seed, germinating cottonwood, willow, and planting these in communities/residents. Fight climate change.” • Growing food for small families on reservation • “We can grow our own fruits, vegetables, and wheat to sell to our community”
Food bank/donation center	• From the community to those in need • Food sovereignty • Means to (transport) the food to those who do not have access (cars) • Reduce price of common food goods (to reduce theft)
Food sovereignty	• From the community to those in need • Food sovereignty • Means to (transport) the food to those who do not have access (cars) • Reduce price of common food goods (to reduce theft)
Protection from Lithium mining	• Lithium mining and harm on the world and communities • Tribal Elders state “protect[ion] from lithium and mining to Protect our lands”

Solar energy	Identified in one cognitive map (*production of solar panels requires
--------------	---

Transportation

Summary: IC Tribal community members identified the need for improved transportation as existing infrastructure is dilapidated and or outdated, unsafe, and in need of upgrades and creation of interconnected transportation networks to improve health, safety, and mobility. Transportation projects identified by the community include an electric scooter station, improved school buses/green bus systems, road maintenance and reflectors, and light fixture implementation.

Project	Description
Electric scooter station	“Affordable E-scooters for the people so they can have some type of transportation rather than having to walk or call a cab”
School buses and green bus systems	Buses are old and need to be upgraded
Ride-share and safety escort programs	Services requested for Elders and other vulnerable or at-risk community members
Road maintenance	- Bike and/or scooter lane on streets - Fix potholes
Light fixture implementation	- For roads - Throughout reservation - Reflector signs on roads - Safer roads: “Walk safe at night without any worries about getting robbed/kidnapped as a woman”

Communication

Summary: There is a need for a reliable community-wide communication system for emergencies and broadcasting community and culturally-related content and news to stay connected on issues and events that affect the community. The IC community identified

project opportunities including establishing an AID application and a centralized communication system. Past efforts that are in need of funding include a Tribal radio station. These projects could additionally provide reciprocal benefits for the community.

Project	Description
Electric scooter station	• “Affordable E-scooters for the people so they can have some type of transportation rather than having to walk or call a cab”
School buses and green bus systems	• Buses are old and need to be upgraded
Ride-share and safety escort programs	• Services requested for Elders and other vulnerable or at-risk community members
Road maintenance	• Bike and/or scooter lane on streets • Fix potholes
Light fixture implementation	• For roads • Throughout reservation • Reflector signs on roads • Safer roads: “Walk safe at night without any worries about getting robbed/kidnapped as a woman”

Project	Description
Aid application	• “Try to get an aid app. They have one in Yuma, and it would help us.” • Transitional living center. Highest rate of drug abuse and alcohol. Try to get an AID app. Make you wait a couple of weeks. In Yuma they have it and it would help us
Tribal communication system	• A centralized communication system. It appears efforts have been made at Quechan to develop radio facilities (see https://www.indiegogo.com/projects/kuav-105-1-tribal-radio). When inquiry was made to the IC community members who took part in Workshop 4, there was no awareness if this system was established, or if it

	could be used to address the communication network needs identified
--	---

Community benefits

Summary: IC Tribal community benefits must be based in reciprocity, and community-identified benefits of a “high road” economy include corporate social responsibility; labor and education capacity building; health, family, and community care and emergency/disaster services; and rights and opportunities afforded under legal and regulatory environmental and historic property/cultural resources compliance processes. In respect to the latter, ongoing insistences on filtering, subsuming, or cataloguing IK and associated Tribal resources according to the conceptual and methodological dictates and limitations of Eurocentric worldview systems “has been and continues to be an act of systemic erasure and trauma” (UAIC 2022:7) that—intentionally or unintentionally—“perpetuate[s] the same acts and practices of governmental and colonial-settler marginalization and violence that have continually worked to ethnically cleanse Native peoples from Native lands and waters of the United States” (Panteah 2021:4). In this sense, that has served and continues to serve as a form of both resource colonialism and “cultural genocide,” which Osage scholar George Tinker defines as “the effective destruction of a people by systematically or systemically (intentionally or unintentionally in order to achieve other goals) destroying, eroding, or undermining the integrity of the culture and system of values that defines a people and gives them life” (Tinker 1993:6).

Prevalent and ongoing negligence in compliance processes to and for Tribal communities by government agencies and developmental project proponents are indelibly entangled in racialized perspectives, values, and practices that systemically underpinned the development and formation of historic preservation and CRM values and approaches in the United States—and which continue to be institutionally and structurally reproduced in and by dominant practices today (see Curti and Moreno 2014a and 2014b; Nelson 2020; Panteah 2021; Raab et al. 1980; Schumann 2019; Smith 2004:137; Stapp 2016). In particular, “[s]tructural racism impacts the practice of archaeology, the sites that we commemorate, and the narratives that we construct,” and “[t]he dearth of preserved and commemorated historical sites that are associated with marginalized people impacts our public historical narratives. It perpetuates previous forms of structural racism in the ways we remember and memorialize the past” (Schumann 2019:255). In short, “an insidious whiteness ... has wreaked havoc on ... [the] discipline [of archaeology] since its founding and rests among us today, albeit in different forms, whether we choose to acknowledge it or not.... A reckoning with whiteness and White supremacy in archaeology is long overdue” (Reilly 2022:2)

In comments on EO 13985, the Zuni Tribe identified how privileging practices of mainstream Western archaeology works to devalue or even wholly elide Tribal knowledge and insight, in the process serving as barriers and obstacles for actualizing equity and undermining both job and career opportunities for Native peoples and adaptive capacities for viable futures as unique Indigenous peoples. As the Zuni Tribe underscores:

structural racism against ... [Native peoples] is reinforced and reproduced in NHPA and NEPA [and CEQA] laws and practices when narrow disciplinary archaeological

interpretations and disciplinary perspectives and values are privileged in the identification and evaluations of ancestral/archaeological sites (resources) and effects/impacts to their integrity [Panteah 2021:9].

This can be addressed and corrected for, in part, through acknowledgement that Tribes are the experts on their own cultural and natural resources as well as corporate profit percentages for programs for IC Tribal communities, training opportunities that build a stronger, healthier, better educated, and employed community, and health care and emergency/disaster services—requirements identified by IC Tribal community members for creating and sustaining just and inclusive “high road” economies and partnerships that must be coupled with the full affordances, rights, and opportunities to Tribes under guiding laws and regulations. This is holistically necessary to build equitable and inclusive economies with and for IC Tribal communities that both serve community needs and address and begin to redress the slow violences of colonial- and industrial-induced climate change.

Project	Description
Corporate social responsibility	- Enhancing corporate social responsibility enforcement - Net profit percentage for all CA tribes - Caps on CEO and other executive pay - Equitable pay for IC Tribal communities as defined by Tribal communities - IC Intergovernmental Tribal Advisory Council – to conserve IC regional ecosystem
School buses and green bus systems	Buses are old and need to be upgraded
Labor and education capacity building; Each	- Nursing training - Autism spectrum and other neurological and

aspect of each project should provide the training and tools (intellectual and physical) for at least 1-2 community members and offer guaranteed long-term employment	developmental disorder education, training, and care • Education, training, and care for those at risk or impacted by human trafficking and MMIW (Missing and Murdered Indigenous Women) • Tribal Communities are seeking Fire training • For youth, high schoolers (job training) • Coed adults • Long-term program for adults to learn and work off land so they can get out there in the world and explore the world • Mental illness and substance addiction training • Recovery programs • Teaching youth how to grow lemons or grapefruit → year-round employment → to feed children and livestock • No loss of language and culture—need more language programs • Tribal community is seeking more EMT and disaster services training • Agricultural training for Tribal and associated Elder/youth intergenerational learning and teaching programs • Cultural resource management (CRM) training (ethnography, Indigenous archaeologies, history, linguistics, etc.)
Road maintenance	• Bike and/or scooter lane on streets • Fix potholes
Light fixture implementation	• For roads • Throughout reservation • Reflector signs on roads • Safer roads: “Walk safe at night without any worries about getting robbed/kidnapped as a woman”

Process	Description
Corporate social responsibility	• Enhancing corporate social responsibility enforcement ◦ Net profit percentage for all CA tribes ◦ Caps on CEO and other executive pay

	• Equitable pay for IC Tribal communities as defined by Tribal communities • IC Intergovernmental Tribal Advisory Council – to conserve IC regional ecosystem
Labor and education capacity building; Each aspect of each project should provide the training and tools (intellectual and physical) for at least 1-2 community members and offer guaranteed long-term employment	• Nursing training • Autism spectrum and other neurological and developmental disorder education, training, and care • Education, training, and care for those at risk or impacted by human trafficking and MMIW (Missing and Murdered Indigenous Women) • Tribal Communities are seeking Fire training • For youth, high schoolers (job training) • Coed adults ◦ Long-term program for adults to learn and work off land so they can get out there in the world and explore the world • Mental illness and substance addiction training • Recovery programs • Teaching youth how to grow lemons or grapefruit → year-round employment → to feed children and livestock • No loss of language and culture—need more language programs • Tribal community is seeking more EMT and disaster services training • Agricultural training for Tribal and associated Elder/youth intergenerational learning and teaching programs • Cultural resource management (CRM) training (ethnography, Indigenous archaeologies, history, linguistics, etc.)

Compliance procedures	• Elder care • Childcare and children • Housing Renovations → funds needed for home repairs, water heaters, air conditioners, replace water lines in homes, sewer and drain lines • Housing for homeless/low-income families • Disaster management plans and resources for IC communities • Need birthing prenatal postnatal care—need training and services that are basic (identified as a specific Pai Pai Tribal need) • Increased capacities for cultural activities ◦ We need more cultural events like gourd making, learning how to bead, learning how to create dream catchers, etc. • Outdoor community sports complex/park • Health Food Nutrition ◦ education training American food - plants - herbs - cafe that provides healthy food - health/wellness - growing food/agriculture • access to better health options.
Compliance procedures	• Ensuring the full rights and opportunities are provided to CA Tribal communities by enforcing environmental justice guidelines and cultural and natural resource laws, regulations, and compliance processes and procedures ◦ IC Tribal communities are the authorities on their own natural and cultural resources—and natural resources <i>are</i> cultural resources for IC Tribal communities ◦ Funding and support for natural and cultural resource compliance procedures and processes associated with all projects ◦ Funding for the appropriate disposition practices and facilities and/or repatriation and return of cultural materials impacted by developmental

	projects throughout IC ○ Workshops and training to better understand rights and adaptive capacities related to lands, airs, and waters of IC • Development, maintenance, and long-term stewardship (jobs) of Native biological banks as part of avoidance, minimization, and mitigation measures
--	--

Sources Cited in the Imperial County Tribal Communities Study Report

- Alvares, Claude. 2010. "Science." In *The Development Dictionary: a guide to knowledge as power, 2nd Edition*, Wolfgang Sachs (ed.), pp. 243-259. Zed Books, London.
- Anderson, Christian M. 2012. Lost in Space? Ethnography and the Disparate Geographies of Social Process. *The Professional Geographer* 64(2):276–285.
- Brand, Ulrich and Markus Wilson. 2021. *The Imperial Mode of Living: Everyday Life and the Ecological Crisis of Capitalism*. Verso, London & New York.
- Buller, Adrienne. 2022. *The Value of a Whale: On the Illusions of Green Capitalism*. Manchester University Press, Manchester.
- Cajete, Gregory. 2000. *Native Science: Natural Laws of Interdependence*. Clear Light Books, Santa Fe
- Curti, Giorgio. H. and Christopher M. Moreno. 2014a. Introducing Traditional Cultural Properties (in Need of Critical Geographies). *Human Geography* 7(2):1-10. and _____. 2014b. Toward a (new) materialist politics of traditional cultural properties (TCPs), or encountering the rubber-bands of space-time and capacities of place. *Human Geography* 7(2):88-102.
- Deloria, Philip J., K. Tsianina Lomawaima, Bryan McKinley Jones Brayboy, et al. (eds.). 2018. Unfolding Futures: Indigenous Ways of Knowing for the Twenty-First Century. *Dædalus: Journal of the American Academy of Arts & Sciences*, 147(2).
- Docherty, J. S. 2001. *Learning lessons from Waco: When the parties bring their gods to the negotiation table*. Syracuse University Press, Syracuse.
- Fre, Zeremariam. 2016. *Knowledge Sovereignty among African Cattle Herders*. UCL Press, London.
- Garrouette, Eva Marie. 2003. *Real Indians: Identity and the Survival of Native America*. University of California Press, Berkley.

- Herman, RDK. 2015. Approaching Research in Indigenous Settings: Nine Guidelines. *Toolbox on the research principles in an aboriginal context*, Smithsonian National Museum of the American Indian.
- Kidd, Ian James, José Medina, and Gaile Pohlhaus, Jr. (eds). *The Routledge Handbook of Epistemic Injustice*. Routledge, New York & London.
- Kill, Jutta. 2014. *Economic Valuation of Nature: The Price to Pay for Conservation? A Critical Exploration*. Rosa Luxemburg Foundation, Brussels.
- Kitchin, Robert M. 1994. Cognitive Maps: What are They and Why Study Them? *Journal of Environmental Psychology*. 14:1-9.
- Laluk, Nicholas C., Lindsay M. Montgomery, Rebecca Tsosie, Christine McCleave, Rose Miron, Stephanie Russo Carroll, Joseph Aguilar, et al. 2002. "Archaeology and Social Justice in Native America." *American Antiquity* 87(4): 659-682.
- Lee, KangJae Jerry, Mariela Fernandez, David Scott, and Myron Floyd. 2022. Slow violence in public parks in the U.S.: can we escape our troubling past? *Social & Cultural Geography*, Published online: 17 Jan 2022.
- Lee, Lloyd L. 2017. *Navajo Sovereignty: Understandings and Visions of the Diné People*. University of Arizona Press, Tucson.
- Mathews, Andrew S. Jessica Barnes. 2016. Prognosis: visions of environmental futures. *Journal of the Royal Anthropological Institute (N.S.)*: 9-26.
- McGrath, A.E., 2020. *Science & religion: a new introduction*. John Wiley & Sons, Hoboken.
- McGregor, Deborah. 2022. *Mino-Mnaamodzawin: Achieving Indigenous Environmental Justice in Canada*. In *Indigenous Resurgences" Decolonization and Movements for Environmental Justice*, Jaskirian Dhillon (ed.), pp. 9-26. Berghahn, New York & Oxford.
- McGregor, Deborah, Steven Whitaker, and Mahisha Sritharan. 2020. Indigenous environmental justice and sustainability. *Current opinion in environmental sustainability* 43:35-40.
- McKittrick, Katherine. 2006. *Demonic Grounds: Black Women and the Cartographies of Struggle*. University of Minnesota Press, Minneapolis.
- Moreton-Robinson, Aileen. 2015. *The White Possessive: Property, Power, and Indigenous Sovereignty*. University of Minnesota Press, Minneapolis.
- Nelson, Peter A. 2020. Refusing Settler Epistemologies and Maintaining an Indigenous Future for Tolay Lake, Sonoma County, California. *American Indian Quarterly* 44(2):221-242.

- Nelson, Robert H. 2013. The Secular Religions of Progress. *The New Atlantis: A Journal of Technology & Society* 39:38-50. 2003. *Economics as Religion: From Samuelson to Chicago and Beyond*. The Pennsylvania State University Press, University Park.
- Nixon, Rob. 2011. *Slow Violence and the Environmentalism of the Poor*. Harvard University Press, Cambridge & London.
- Norgaard, Kari Marie. 2014. Karuk Traditional Ecological Knowledge and the Need for Knowledge Sovereignty: Social, Cultural and Economic Impacts of Denied Access to Traditional Management, prepared by for the Karuk Tribe Department of Natural Resources. Electronic resources, <https://karuktribeclimatechangeprojects.files.wordpress.com/2016/05/final-pt-1-karuk-tek-and-the-need-for-knowledge-sovereignty.pdf> (last accessed 23 July 2020).
- Palmer Deborah, and Blanca Caldas. 2015. Critical Ethnography, in *Research Methods in Language and Education, Encyclopedia of Language and Education*. King et al. (eds.), DOI 10.1007/978-3-319-02329-8_28-1. Springer International Publishing Switzerland.
- Panteah, Sr., Val. 2021. Letter to President Biden providing Zuni comments on Executive Order 13985. (July 1, 2021). Letter on file with the Zuni Tribal Historic Preservation Office, Zuni, New Mexico
- Prabhakar, Arati and Brenda Mallory (Executive Office of the President, Office of Science and Technology Policy, and Council on Environmental Quality). 2022b. Memorandum for Heads of Federal Departments and Agencies–Guidance for Federal Departments and Agencies on Indigenous Knowledge. Arati Prabhakar and Brenda Mallory. Washington, D.C.: Executive Office of the President, November 30, 2022. <https://www.whitehouse.gov/wp-content/uploads/2022/12/OSTP-CEQ-IK-Guidance.pdf> (last accessed 28 August 2024).
- Raab, L. Mark, Michael B. Schiffer, Timothy C. Klinger, and Albert C. Goodyear. 1980. Clients, Contracts, and Profits: Conflicts in Public Archaeology. *American Anthropologist* 82(3): 539-551.
- Reilly, Matthew C. 2022. Archaeologies of whiteness. *Archaeological Dialogues* (2022):1-16.
- Rudd, Jeremy B. 2021. Why Do We Think That Inflation Expectations Matter for Inflation? (And Should We?). Finance and Economics Discussion Series 2021-062. Board of Governors of the Federal Reserve System. Electronic Resource, <https://doi.org/10.17016/FEDS.2021.062> (last accessed 30 June 2023).

- Schumann, Rebecca. 2019. Overcoming the Silence: Race, Archaeology, and Memory. *Journal of African Diaspora Archaeology and Heritage* 8(3):252-272.
- Sedlacek, Tomas. 2011. *Economics of Good and Evil: The Quest for Economic Meaning from Gilgamesh to Wall Street*. Oxford University Press, Oxford.
- Smith, Laurajane. 2004. *Archaeological Theory and the Politics of Cultural Heritage*. Routledge, London.
- Smith, Linda Tuhiwai. 1999. *Decolonizing Methodologies: Research and Indigenous Peoples*. Zed Books, Ltd. London & New York.
- Starblanket, Gina and Heidi Kiiwetinepinesiik Stark. 2018. 5. Towards a Relational Paradigm – Four Points for Consideration: Knowledge, Gender, Land, and Modernity. In *Resurgence and Reconciliation*, Michael Asch, John Borrows and James Tully, eds., pp. 175-208. University of Toronto Press, Toronto.
- Swanson, Kate. 2014. Chapter 5: Urban Ethnographic Research. In *Researching the City*, Kevin Ward (ed.), pp. 54-69. Sage, New York.
- Thomas, Jim. 1993. *Doing Critical Ethnography*. Sage Publications, Inc., Newbury Park
- Till, Karen E. 2005. *The New Berlin: Memory, Politics, Place*. University of Minnesota Press, Minneapolis.
- Tinker, George E. 1993. *Missionary Conquest: The Gospel and Native American Cultural Genocide*. Fortress Press, Minneapolis.
- Tsosie, Rebecca. 2017. Indigenous peoples, anthropology, and the legacy of epistemic injustice. In *The Routledge Handbook of Epistemic Injustice*, Kidd, Ian James, José Medina, and Gaile Pohlhaus, Jr. (eds.), pp. 356-359. Routledge, New York & London.
- . 2012. Indigenous Peoples and Epistemic Injustice: Science, Ethics, and Human Rights, 87 *Wash. L. Rev.* 1133.
- . 2007. Indigenous People and Environmental Justice: The Impact of Climate Change, 78 *U. Colo.L. Rev.* 1625.
- Tuck, Eve and K. Wayne Yang. 2014. “R-Words: Refusing Research.” In *Humanizing Research: Decolonizing Qualitative Inquiry with Youth and Communities*, Django Paris and Maisha Winn, (eds.), pp. 223-247. Sage Publications.
- Tuck, Eve, and Marcia McKenzie. 2015. *Place in Research: Theory, Methodology, and Methods*. Routledge, New York.
- UAIC (United Auburn Indian Community). “UAIC Tribal Goals for Section 106 Consultation: Prevention, Preservation, and Restoration.” Draft 3.10.2022.

- Unsworth, Robert E., and Gerald (Taiaiake) Alfred. 2011. An Introduction to Tribal Natural Resource Damage Claims. Prepared for: Law Seminars International Conference on Natural Resource Damages. Santa Fe, New Mexico.
- Wilson, Shawn. 2008. *Research is Ceremony: Indigenous Research Methods*. Fernwood Publishing, Halifax & Winnipeg.
- Walker, Polly O. 2015. Indigenous Paradigm Research. In *Methodologies in Peace Psychology*, D. Bretherton, S. F. Law (eds.), Peace Psychology Book Series 26, pp. 159-175. Springer International Publishing Switzerland.
- Whitt, Laurelyn. 2009. *Science, Colonialism, and Indigenous Peoples: The Cultural Politics Of Law And Knowledge*. Cambridge University Press, Cambridge & New York.
- Whyte, Kyle. 2018. Settler Colonialism, Ecology, and Environmental Injustice. *Environment and Society: Advances in Research* 9:125-144.
- 2017a. Is it Colonial Déjà Vu? Indigenous Peoples and Climate Injustice. In *Humanities for the Environment: Integrating Knowledges, Forging New Constellations of Practice*, Joni Adamson, Michael Davis, and Hsinya Huang (eds.), pp. 88-104. Earthscan Publications, London.
- 2017b. Indigenous Climate Change Studies: Indigenizing Futures, Decolonizing the Anthropocene. *English Language Notes* 55(1-2):153-162.
- Wolfe, Patrick. 2006. Settler Colonialism and the Elimination of the Native. *Journal of Genocide Research* 8 (4):387-409.

All Regional Plan Part 2 Sources

- *2022 Reading State Snapshot Report: California Grade 4 Public Schools*. (2022).
- 20mm. (2024). *Tribal communities introducing two new projects - Tribal resource center*. Available at: <https://20mm.org/2024/01/16/tribal-communities-introducing-two-new-projects-tribal-resource-center/>
- Anderson, M. J., & Fienberg, S. E. (Eds.). (1999). *Who Counts? The Politics of Census-Taking in Contemporary America*. Springer.
- ArtReach San Diego. (2024). *About Us*. Available at: <https://www.artreachsandiego.org/about/>
- American public health association
- Balmir Inclusive. (2024). *Equity Assessment Report*.
- Biocom California. (2023). *Biocom California 2023 Life Science Economic Impact Report*. Available at: <https://www.biocom.org/programs/biocom-california-institute/publications-research/>
- Biocom California. (2023). *Biocom California 2023 Life Science Workforce Trends Report*. Available at: <https://www.biocom.org/programs/biocom-california-institute/publications-research/>
- Biocom California. (2024). *Professional Development Programs*. Available at: <https://www.biocom.org/programs/biocom-california-institute/professional-development-programs/>
- CA Jobs First SB Coalition. (2024). *California Jobs First Southern Border Coalition Regional Plan Part 1*. Available at: https://drive.google.com/file/d/1q_qBzxmMRbBT6aDiJ9zudNtM0Lpk7gWw/view
- California Agriculture Organic Report. (2023). *California Department of Food and Agriculture Organic Program*. Available at: <https://www.cdfa.ca.gov/is/organicprogram/reports.html>
- California Air Resources Board. (2023). *GHGs Descriptions & Sources in California*. Available at: <https://ww2.arb.ca.gov/>
- California Climate Adaptation Strategy. (2024). *2024 California Climate Adaptation Strategy*. Available at: <https://resources.ca.gov/Initiatives/Building-Climate-Resilience/2024-State-Adaptation-Strategy-Update>
- California Climate Jobs Plan. (2024). *Jobs Creation*. Available at: <https://www.californiaclimatetimejobsplan.com/jobscreation>
- California Construction News. (2024). *San Diego unveils “Complete Communities Now” initiative to expedite housing permits*. Available at: <https://californiaconstructionnews.com/2024/03/18/san-diego-unveils-complete-communities-now-initiative-to-expedite-housing-permits/>

- California Department of Education. (2024). *Career Technical Education*. Available at: <https://www.cde.ca.gov/ci/ct/>
- California Department of Public Health. (2023). *Climate Change and Health Profile Reports*. Available at: <https://www.cdph.ca.gov/Programs/OHE/pages/climatehealthprofilereports.aspx>
- California Department of Transportation. (2023). *Imperial County economic forecast*. Available at: <https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/new-state-planning/transportation-economics/socioeconomic-forecasts/2023/2023-pdf/imperial-2023-a11y.pdf>
- California Department of Transportation. (2024). *Long-term industry employment projections*. Available at: <https://data.ca.gov/dataset/long-term-industry-employment-projections>
- California Draft Priority Climate Action Plan. (2023). *State of California's Draft Priority Climate Action Plan 2024*. Available at: <https://www.epa.gov/system/files/documents/2024-03/california-cprg-priority-climate-action-plan.pdf>
- California Employment Development Department. (2021). *Workforce Services Information Notice WSIN21-06: Questions and Answers*.
- California Employment Development Department. (2023). *Labor Market Information by County*. Available at: <https://www.labormarketinfo.edd.ca.gov/>
- California Employment Development Department. (2023). *San Diego-Carlsbad Metropolitan Division (San Diego County) Labor Market Information Division*. Available at: [https://labormarketinfo.edd.ca.gov/file/lfmonth/sand\\$pds.pdf](https://labormarketinfo.edd.ca.gov/file/lfmonth/sand$pds.pdf)
- California Employment Development Department. (2024). *Jobs and Training*.
- California Employment Development Department. (2024). *Occupational profile (Light Truck Drivers in Imperial County)*. Available at: <https://labormarketinfo.edd.ca.gov/cgi/databrowsing/occExplorerQSDetails.asp?searchCriteria=tru&careerID=&menuChoice=occexplorer&geogArea=0604000025&soccode=533033&search=Explore+Occupation>
- California Employment Development Department. (2024). *Occupational profile (Transportation, Storage, and Distribution Managers in Imperial County)*. Available at: <https://labormarketinfo.edd.ca.gov/cgi/databrowsing/occExplorerQSDetails.asp?searchCriteria=logistics&careerID=&menuChoice=occexplorer&geogArea=0604000025&soccode=113071&search=Explore+Occupation>
- California Energy Commission. (2023). *California Clean Energy Survey*. Available at: <https://www.energy.ca.gov/data-reports/surveys>
- California Energy Commission. (2023). *California Energy Demand 2023-2024*. Available at: <https://www.energy.ca.gov/>

- California Health Care Foundation. (2023). *2023 Edition — California Health Care Spending*. Available at: <https://www.chcf.org/publication/2023-edition-california-health-care-spending/>
- California Immigrant Policy Center. (2017). *Advancing Economic Opportunity for California's Immigrant and Refugee Workforce*. Available at: <https://caimmigrant.org/wp-content/uploads/2021/11/Advancing-Economic-Opportunity-For-CA-Immigrant-Refugee-Workforce-OCT-2017-2.pdf>
- California Immigrant Policy Center. (2022). *California Workforce Development Assessment: Opportunities to Advance Economic Equity for Immigrants and Refugees*. Available at: <https://caimmigrant.org/wp-content/uploads/2022/03/CA-Workforce-Development-Assessment-2022-r2.pdf>
- California Natural Resources Agency. (2023). *Final Extreme Heat Action Plan*. Available at: <https://resources.ca.gov/Newsroom/Page-Content/News-List/Final-Extreme-Heat-Action-Plan>
- California Open Data Portal. (2024). *Current employment statistics (2006-2010)*. Available at: <https://data.ca.gov/dataset/current-employment-statistics-ces-annual-average>
- California Rural Legal Assistance (CRLA). (2007).
- California Workforce Development Board. (2020). *Putting California on the High Road: A Jobs and Climate Action Plan for 2030*. Available at: <https://laborcenter.berkeley.edu/wp-content/uploads/2020/09/Putting-California-on-the-High-Road.pdf>
- California Workforce Development Board. (2024). *Final 2024-2027 State Plan*. Available at: https://cwdb.ca.gov/plans_policies/2024-2027-state-plan/
- California Workforce Development Board. (2024). *High Road Training Partnerships*. Available at: <https://cwdb.ca.gov/initiatives/high-road-training-partnerships/>
- Calmatters. (2023). *Growers brace to give up some Colorado River water*. Available at: <https://calmatters.org/environment/2023/01/colorado-river-water/>
- Calmatters. (2020). *What keeps families in one of the most polluted places in California?* Available at: <https://calmatters.org/health/2019/01/what-keeps-families-in-one-of-the-most-polluted-places-in-california/>
- CalRecycle. (2024). *South San Diego/Imperial Co.* Available at: <https://www2.calrecycle.ca.gov/BizAssistance/RMDZ/Zones/Details/30#Infrastructure>
- Cause IQ. (2024). *El Centro Area Nonprofits*. Available at: <https://www.causeiq.com/directory/el-centro-ca-metro/>
- CBRE. (2023). *2023 U.S. Life Sciences Outlook*. Available at: <https://www.cbre.com/insights/books/2023-us-life-sciences-outlook>

- CBS8. (2023). *SDG&E Customers Are Past Due on Their Monthly Bills*. Available at: <https://www.cbs8.com/article/news/local/sdge-customers-are-past-due-on-their-monthly-bills/509-2f3fff8a0150-4c03-a27a-ae355206fccc>
- Center for Disease Control [CDC]. (2023). *Federal Housing Assistance and Chronic Disease Among US Adults, 2005–2018*. Available at: https://www.cdc.gov/pcd/issues/2023/23_0144.htm
- Centers of Excellence for Labor Market Research. (2023). *Equity Gaps Report*. Available at: <https://coeccc.net/san-diego-imperial/2023/02/equity-gaps-in-priority-jobs-and-programs/>
- Centers of Excellence for Labor Market Research. (2022). *Sector Analysis: San Diego County*. Available at: <https://coeccc.net/san-diego-imperial/2022/05/san-diego-sector-analysis/>
- City of El Centro. (2024). *Analysis of Impediments to Fair Housing Choice*. Available at: <https://cityofelcentro.org/documents/Analysis-FHC.pdf>
- City of El Centro. (2024). *El Centro Public Library: Now offering Mobile Hotspots*. Available at: <https://cityofelcentro.org/documents/Analysis-FHC.pdf>
- City of San Diego. (2024). *Complete Communities Now*. Available at: <https://www.sandiego.gov/development-services/news-programs/cchs-now>
- Comité Cívico del Valle. (2024). *Home*. Available at: <https://ccvhealth.org>
- County Health Rankings and Roadmaps. (2024). *California County Health Rankings Model*. Available at: https://www.countyhealthrankings.org/health-data/california?utm_source=chatgpt.com&year=2024
- County News Center. (2023). *County Launches Community-Driven Initiative to Address Inequity*.
- County News Center. (2023). *New county study advances ways to close digital divide in unincorporated area*. Available at: <https://www.countynewscenter.com/new-county-study-advances-ways-to-close-digital-divide-in-unincorporated-area/>
- County of San Diego Department of Agriculture, Weights and Measures. (2016). *Economic contributions of San Diego County agriculture*. Available at: <https://www.sandiegocounty.gov/content/dam/sdc/awm/docs/SDAgImpact.pdf>
- Data USA. (2022). *Imperial County*. Available at: <https://datausa.io/profile/geo/imperial-county-ca>
- Data USA. (2022). *Los Angeles*. Available at: <https://datausa.io/profile/geo/los-angeles-county-ca>
- Data USA. (2022). *San Diego County*. Available at: <https://datausa.io/profile/geo/san-diego-county-ca>
- Data USA. (2022). *United States*. Available at: <https://datausa.io/profile/geo/united-states>

- Data USA. (2024). *Homeownership rate, median home price, median monthly rent in Imperial County*. Available at <https://datausa.io/profile/geo/imperial-county-ca>
- Department of Public Works. (2023). *DPW by the Numbers*. Available at: <https://www.sandiegocounty.gov/content/sdc/dpw/aboutdpw/numbers.html>
- Department of Public Works. (2024). *Capital Improvement Plan – San Diego County Department of Public Works*. Available at: <https://gis-portal.sandiegocounty.gov/arcgis/apps/MapSeries/index.html?appid=57b429f8a52148789e376110fcb0cb14>
- Department of Public Works. (2024). *Capital Improvement Plan*. Available at: <https://www.sandiegocounty.gov/content/sdc/dpw/CIP.html>
- Economic Policy Institute. (2019). *Updated employment multipliers for the U.S. economy*. Available at: <https://www.epi.org/publication/updated-employment-multipliers-for-the-u-s-economy/>
- Economic Policy Institute. (2024). *Updated employment multipliers for the U.S. economy*. Available at: <https://www.epi.org/>
- Eidam, E. (2024). *San Diego County kicks off broadband funding listening tour*. GovTech. Available at: <https://insider.govtech.com/california/news/san-diego-county-kicks-off-broadband-funding-listening-tour>
- Employment Development Department (EDD). (2023). *Employment Data on California Agricultural Workers*.
- Employment Development Department [EDD]. (2023). *EDD celebrates the contributions of California agricultural workers with 44th Annual Farm Workers Appreciation Breakfast*. Available at: https://edd.ca.gov/en/about_edd/news_releases_and_announcements/news-23-46/#:~:text=The%20EDD%20estimates%20there%20were,statewide%20during%20the%20same%20timeframe
- Employment Development Department, State of California. (2024). *Occupation Profile*. Available at: <https://www.labormarketinfo.edd.ca.gov/>
- Employment Training Panel. (2024). *Funding priorities & limitations*. Available at: <https://etp.ca.gov/program-overview/funding-limitations/>
- Engage San Diego County. (2024). *Housing Blueprint*. Available at: <https://engage.sandiegocounty.gov/housing-blueprint>
- Equitable Data Working Group. (2022). *A Vision for Equitable Data: Recommendations from the Equitable Data Working Group*.
- Equity Gaps in Housing in California. (2022). *Racial disparities in housing cost burden. San Diego Economic Equity Report*. San Diego Foundation. Available at: <https://www.sdfoundation.org/wp-content/uploads/2023/10/San-Diego-Economic-Equity-Report.pdf>

- Executive Order 13107. (1998). *Implementation of Human Rights Treaties*. Available at: <https://www.archives.gov/federal-register/executive-orders/1998.html#13107>
- Feeding America. (2022). *Map the Meal Gap: Food insecurity in California*. Available at: <https://map.feedingamerica.org/county/2022/overall/california>
- Garsd, J. (2024, June 24). “This is America?” Migrants keep arriving at the border, despite tougher asylum rules. NPR.
- Garsd, J. (2024, June 24). “This is America?” Migrants Keep Arriving at the Border, Despite Tougher Asylum Rules. NPR.
- GoDaddy and UCLA Anderson Forecast. (2024). *The GoDaddy/UCLA Anderson forecast microbusiness activity index 2024 annual update*. Available at: https://www.godaddy.com/ventureforward/wp-content/uploads/2024/09/MAIQ124microbusiness_20240909.pdf
- GotPower. *Brownouts and Blackouts: What is a Blackout?* Available at: <https://www.gotpower.com/brownouts-and-blackouts/#:~:to%20125%20volts.,Brownouts%20and%20Blackouts%3A%20What%20is%20a%20Blackout%3F,voltage%20or%20total%20system%20capacity>
- Gould, S. J. (1996). *The Mismeasure of Man*. W.W. Norton & Company.
- Health Impact Project. (2021). *Health Impact Assessments, Community Engagement Can Promote Equitable Infrastructure Choices*. Available at: <https://www.pewtrusts.org/-/media/assets/2021/05/community-engagement-can-promote-equitable-infrastructure-choices---pdf.pdf>
- Hersh, A. (2023, October 4). *Turns Out Investing in Disinvested Communities Isn’t Very Risky*. Next City.
- Human Rights Campaign. (2020). *The State of LGBTQ Data Collection*.
- IC Agricultural Commission. (2024). *2023 Crop Report*. Available at: <https://agcom.imperialcounty.org/wp-content/uploads/2024/10/2023-CR-design-10.08.pdf>
- IC Agricultural Commission. (2024). *Imperial County crop report plus 2024*. Available at: https://agcom.imperialcounty.org/wp-content/uploads/2024/07/ImperialCO_Ag_Report_2024_V25REV-SingPgs-1.pdf
- Inewssource, Imperial County winds drive dust- and US respiratory patients- to Mexico (2024). Available at: [Imperial Valley residents turn to Mexico for respiratory specialists](#)
- Imperial County Community & Economic Development [CED]. (2023). Available at: <http://www.imperialcountyced.com/colonias/>
- Imperial County Agricultural Commission. (2023). *Crop Report, 2023*.
- Imperial County Comprehensive Economic Development Strategy. (2022). *Imperial County Comprehensive Economic Development Strategy 2022-2027*. Available at: http://www.imperialcountyced.com/media/managed/CEDS_Document_09_28_22_CEDS_Document_DRAFT.pdf

- Imperial County Department of Public Works. (2024). *Divisions*. Available at: <https://publicworks.imperialcounty.org/divisions/>
- Imperial County Department of Public Works. (2024). *Imperial County Department of Public Works*. Available at: <https://publicworks.imperialcounty.org/>
- Imperial County Economic Development Division. (2024). *Housing Programs*. Available at: <http://www.imperialcountyced.com/housing-programs/>
- Imperial County Housing Element. (2021). *Housing plan for Imperial County*. Available at: <https://imperialcountyhousing.gov>
- Imperial County Planning & Development Services. (2021). *Imperial County 2021-2029 Housing Element*. Available at: <https://www.icpds.com/assets/planning/2021-2029-Imperial-County-Housing-Element--.pdf>
- Imperial County Planning & Development Services. (2024). *About*. Available at: <https://www.icpds.com/about>
- Imperial County Public Health Department. (2019). *2018-2019 Health Status Report*. Available at: <https://icphd.org>
- Imperial County Public Health Department. (2021).
- Imperial County Workforce Development Board. (2024). *Home*. Available at: <https://www.ivworkforce.com>
- Imperial County. (2023). *Imperial County Strategic Plan*. Available at: https://imperialcounty.org/wp-content/uploads/2023/12/IC_StrategicPlanfinal-1.pdf
- Imperial Valley Economic Development Corporation (IVEDC). (2024). *Southern Border Broadband Consortium*. Available at: <https://www.ivedc.com/initiatives/broadband>
- Imperial Valley Economic Development Corporation. (2024). *Biofuels and Renewable Energy*. Available at: <https://www.ivedc.com/>
- Imperial Valley Economic Development Corporation. (2024). *Biofuels*. Available at: <https://www.ivedc.com/region/industries/biofuels>
- Imperial Valley Economic Development Corporation. (2024). *Transportation & logistics*. Available at: <https://www.ivedc.com/region/industries/transportation-and-logistics>
- Imperial Valley Economic Development Corporation. (2024). *Workforce Development*. Available at: <https://www.ivedc.com/initiatives/workforcedevelopment>
- Imperial Valley Food Bank. *Need in Imperial Valley*. Available at: <https://www.ivfoodbank.com/about/need-in-imperial-valley>
- Imperial Valley Housing Authority (IVHA). (2023). *Housing Programs*. Available at: <https://www.ivha.org/housing-programs/>
- Imperial Valley Regional Occupational Program. (2024). *WIOA Adult Vocational Training Program*. Available at: <https://www.ivrop.org/adult-services/training/wioa-adult-vocational-training-program/>

- Imperial Valley Telecommunications Authority (IVTA). (2024). *About IVTA*. Available at: <https://ivta.net/>
- Inewsource. (2023). *San Diego Rejects Grand Jury's Advice for Fixing City's 'Deplorable' Roads*. Available at: <https://inewsource.org/2023/09/21/roads-paving-funding-hiring-san-diego-grand-jury-report/>
- Inside San Diego. (2023). *How the City Is Making Improvements to Its Public Utilities Department*. Inside San Diego. Available at: <https://www.insidesandiego.org/how-city-making-improvements-its-public-utilities-department>
- Inside San Diego. (2024). *\$12.2 Million Arts Investment Will Fuel Economic and Cultural Growth*. Available at: <https://www.insidesandiego.org/122-million-arts-investment-will-fuel-economic-and-cultural-growth>
- International Labor Organization (ILO). (2022). *Global employment trends for youth 2022*. Available at: <https://www.ilo.org/media/371476/download>
- International Trade Administration. (2024). *State Trade and Economy Factsheets*. Available at: <https://www.trade.gov/data-visualization/state-trade-and-economy-factsheets>
- Isley, C., & Low, L. (2022). *Broadband adoption and availability: Impacts on rural employment during COVID-19*. Available at: <https://www.sciencedirect.com/science/article/pii/S0308596122000143>
- IV Desert Museum. *Kumeyaay Nation: Stories of Change*. Available at: <https://www.ivdesertmuseum.org/education/kumeyaay-nation-stories-of-change#:~=The%20lands%20of%20Imperial%20and,%2C%20Pai%20Pai%2C%20and%20Kumeyaay>
- Jackson Jr., J. P., & Weidman, N. M. (2004). *Race, Racism, and Science: Social Impact and Interaction*. Rutgers University Press.
- Jacobs Center for Neighborhood Innovation. (2024). *Business Accelerator*. Available at: <https://www.jacobscenter.org/business-accelerator/>
- Journal of Business Logistics. (2023). *Examining the gender wage gap in logistics*. Available at: <https://onlinelibrary.wiley.com/doi/10.1111/jbl.12363>
- Kapur, Radhika. (2022). *Types of Illiteracy: Unfavorable to Individuals from All Backgrounds*.
- Keokham, C. (2022). *Intersectionality and Inclusivity: Breaking Barriers in Underserved Communities. Future Leaders in Action*. Available at: <https://www.futureleadersinaction.org/blog/2022/12/12/intersectionality-and-inclusivity-breaking-barriers-in-underserved-communities>
- KPBS. (2023). *Report: Impact of Tourism in San Diego Totaled \$22.7B in 2022*. Available at: <https://www.kpbs.org/news/economy/2023/06/22/report-impact-of-tourism-in-san-diego-totaled-22-7b-in-2022>

- KTLA. (2023). *California counties where it's cheaper to build than buy*. Available at: <https://ktla.com/news/california/the-california-counties-where-its-cheaper-to-build-than-buy/>
- KUNC News. (2023). *Freeing Up Colorado River Water from California Farms Will Take More Than Just Money – Just Ask the Farmers*. Available at: <https://www.kunc.org/news/2023-07-17/freeing-up-colorado-river-water-from-california-farms-will-take-more-than-just-money-just-ask-the-farmers>
- Los Angeles Times. (2023). *A California border town's first transgender mayor: Is gender the reason?*.
- Massachusetts Clean Energy Center. (2023). *2023 Industry Report*. Available at: <https://www.masscec.com/>
- MIT Living Wage Calculator. (2024). *Living wage calculation for Imperial County, California*. Available at: <https://livingwage.mit.edu/counties/06025>
- MIT Living Wage Calculator. (2024). *Living Wage Calculation for San Diego County, California*. Available at: <https://livingwage.mit.edu>
- National LGBTQ Task Force. (2024). *Data Equity Coalition Health Inequities*.
- National Low Income Housing Coalition (NLIHC). (2024). *Out of reach: The high cost of housing 2024*. Available at: https://nlihc.org/sites/default/files/2024_OOR.pdf
- National Renewable Energy Laboratory. (2022). *National Solar Radiation Database (NSRDB)*. Available at: <https://www.nrel.gov/gis/solar.html>
- National Skills Coalition. (2024). *Closing California's digital skill divide*. Available at: <https://nationalskillscoalition.org/wp-content/uploads/2024/06/CA-Digital-Divide-Fact-Sheet-Final.pdf>
- Nelson, A., & Schwab, M. (2022). *A Vision for Equitable Data: Recommendations from the Equitable Data Working Group*. Available at: <https://resourcehub.academyhealth.org/document/a-vision-for-equitable-data-recommendations-from-the-equitable-data-working-group/>
- New York Post. (2024). *Trans mayor complains about being 'bullied' out of office*.
- Palomar College. (2023). *Priority Emerging Sector Posters*. Available at: <https://www.palomar.edu/>
- Public Policy Institute of California (PPIC). (2024). *Testimony: California's K-12 digital divide has narrowed, but access gaps persist*. Available at <https://www.ppic.org/blog/testimony-californias-k-12-digital-divide-has-narrowed-but-access-gaps-persist/>
- Public Policy Institute of California. (2019). *2020 Census: Counting Imperial County*.
- Public Policy Institute of California. (2024). *Immigrants in California*. Available at: [https://www.ppic.org/publication/immigrants-in-california/#:~=California%20has%20large%20numbers%20of,%20and%20Vietnam%20\(521%2C100\)%20and%20Vietnam%20\(521%2C100\)](https://www.ppic.org/publication/immigrants-in-california/#:~=California%20has%20large%20numbers%20of,%20and%20Vietnam%20(521%2C100)%20and%20Vietnam%20(521%2C100))

- Public Policy Institute of California. *Immigrants in California*. Available at: <https://www.ppic.org/publication/immigrants-in-california/>
- Regional Economic Analysis Project. (2022). *San Diego County, CA vs. California Industry Structure Analysis: Employment*. Available at: https://california.reaproject.org/analysis/industry-structure/industries_by_region/employment/tools/60073/
- Regional Task Force on Homelessness San Diego. (2022). *2022 Data Performance Report*.
- Rios, P. (2023). *Border Patrol policies route migrants through deadly Imperial Valley desert*. California Local.
- Rios, P. (2023). *Border Patrol Policies Route Migrants Through Deadly Imperial Valley Desert*. California Local.
- Rothstein, R. (2017). *The Color of Law: A Forgotten History of How Our Government Segregated America*. Liveright Publishing Corporation.
- Salata, Philip, “Reining in rural Imperial County’s healthcare disparities”. (2022). USC StorySpace. Available at: [Reining in rural Imperial County’s healthcare disparities](#)
- San Diego Association of Governments (SANDAG). (2021). *Regional digital equity strategy and action plan*. Available at <https://www.sandag.org/-/media/SANDAG/Documents/PDF/projects-and-programs/regional-initiatives/digital-equity/regional-digital-equity-strategy-and-action-plan-2021-12-01.pdf>
- San Diego Association of Governments (SANDAG). (2022). *Regional broadband and digital infrastructure master plan*. Available at <https://www.sandag.org/projects-and-programs/regional-initiatives/digital-equity/broadband-infrastructure>
- San Diego Association of Governments. (2024). *Data and Research*.
- San Diego Business Journal. (2023). *San Diego Life Sciences Industry Faring Headwinds Well*. Available at: <https://www.sdbj.com/life-sciences/san-diego-life-sciences-industry-faring-headwinds-well/>
- San Diego Business Journal. (2023). *Robust Ecosystem Strengthens San Diego’s Life Science Sector*. Available at: <https://www.sdbj.com/special-report/robust-ecosystem-gives-strength-to-san-diegos-life-science-sector/>
- San Diego Coastkeeper. (2024). *Drought*. Available at: <https://www.sdcoastkeeper.org/water-supply/drought/>
- San Diego Community College District. (2024). *Career Education Programs*. Available at <https://www.sdccd.edu/>
- San Diego County Water Authority. (2024). *Seawater Desalination*. Available at: <https://www.sdcwa.org/your-water/local-water-supplies/seawater-desalination/>
- San Diego County Water Authority. (2024). *Where Our Water Comes From*. Available at: <https://www.sdcwa.org/your-water/where-our-water-comes-from/>

- San Diego County. (2023). *Comprehensive broadband plan*. Available at https://www.sandiegocounty.gov/lueg/docs/Comprehensive_Broadband_Plan_January_2023.pdf
- San Diego County. (2023). *Inclusionary Housing Study for the County of San Diego*. Available at https://www.sandiegocounty.gov/content/dam/sdc/pds/advance/HousingStudy/SanDiegoCountyInclusionaryFinal2_012023.pdf
- San Diego County. (2024). *Broadband - County of San Diego*. Available at <https://www.sandiegocounty.gov/content/sdc/lueg/BIL/broadband.html>
- San Diego County. (2024). *Closing the digital divide in the unincorporated area | Engage San Diego County*. Available at <https://engage.sandiegocounty.gov/broadband>
- San Diego County. (2024). *Commute Time and Method of Transportation*. Available at <https://data.sandiegocounty.gov/stories/s/Commute-Time-and-Method-of-Transportation/dj5g-irg9>
- San Diego County. (2024). *Equity Indicator Report Methods*.
- San Diego Food Vision. (2023). *San Diego Food Vision 2030*. Available at: <https://sdfoodvision2030.org/>
- San Diego Food System Alliance. (2018). *Food Waste Prevention, Recovery, and Recycling Initiatives*. Available at: <https://sdfoodvision2030.org/dashboard/scale-up-food-waste-prevention-recovery-and-recycling-initiatives/>
- San Diego Housing Commission. (2023). *Affordable housing needs in San Diego County*. Available at https://chpc.net/wp-content/uploads/2024/05/San-Diego_Housing_Report.pdf
- San Diego Hunger Coalition. (2024). *San Diego Hunger Coalition*. Available at: <https://www.sandiegohungercoalition.org/>
- San Diego Integrated Regional Water Management Program. (2013). *Tribal Nations Report*. Available at: https://www.sdirwmp.org/pdf/SDIRWM_04_Tribal_Nations_Sep2013.pdf
- San Diego Miramar College. (2024). *Program Options in Biotechnology*. Available at: <https://sdmiramar.edu/programs/biotechnology/options>
- San Diego Regional Center. (2024). *SDRC Office Locations*. Available at <https://www.sdrpc.org/contact>
- San Diego Regional EDC. (2023). *2023 Inclusive Growth Progress: Recovery and Resilience*. Available at: <https://2023.inclusivesd.org/>
- San Diego Regional EDC. (2023). *San Diego's Life Sciences Industry*. Available at: <https://www.sandiegobusiness.org/about-the-region/life-sciences/>
- San Diego Regional Policy & Innovation Center. (2024). *Creative Economy*. Available at: <https://www.sdrpic.org/creative-economy>

- San Diego Regional Task Force on Homelessness. (2022). *Regional Task Force on Homelessness Report*. Available at <https://sdchamber.org/2022/05/regional-task-force-on-homelessness-report/>
- San Diego Tourism Authority. (2023). *San Diego Tourism Authority Touts Record-Breaking Visitor Spending and Economic Impact*. Available at: <https://www.sandiego.org/press/press-releases/2023/san-diego-tourism-authority-touts-record-breaking-visitor-spending-and-economic-impact.aspx>
- San Diego Tourism Authority. (2024). *Art and Tech: San Diego's Unique Artistic Identity*. Available at: <https://www.sandiego.org/articles/arts-culture/art-and-tech-san-diego-unique-artistic-identity.aspx>
- San Diego Tourism Authority. *Discovering San Diego's Native American Heritage*. 2024. Available at: <https://www.sandiego.org/explore/things-to-do/arts-culture/history-heritage/native-american-history-and-heritage-sites.aspx>.
- San Diego Union-Tribune. (2024). *A Stable Jobs Market: San Diego's Unemployment Rate Dips*. Available at: <https://www.sandiegouniontribune.com/2024/10/18/a-stable-jobs-market-san-diegos-unemployment-rate-dips/>
- San Diego Union-Tribune. (2024). *Even San Diego's Life Science Office Buildings Are Sitting Vacant. 'We Just Oversubscribed on Space.'* Available at: <https://www.sandiegouniontribune.com/2024/10/30/even-san-diegos-life-science-office-buildings-are-sitting-vacant-how-much-longer-will-it-last/>
- San Diego Union-Tribune. (2024). *San Diego's Life Science Sector Contributed \$56.6B to the Regional Economy, Despite Tight Financing and Layoffs*. Available at: <https://www.sandiegouniontribune.com/2024/06/13/san-diegos-life-science-sector-contributed-56-6b-to-the-regional-economy-despite-tight-financing-and-layoffs/>
- San Diego Workforce Partnership. (2023). *Pathways for Immigrants: A Guide to Career Opportunities in San Diego County*. Available at: <https://workforce.org/wp-content/uploads/2023/03/Pathways-for-Immigrants.pdf>
- San Diego Workforce Partnership. (2024). *Fiscal Year 2023 Annual Report*. Available at <https://www.sandiegoworkforce.org/>
- San Francisco Chronicle. (2024). *Home value changes in California zip codes*. Available at <https://sfchronicle.com>
- Scripps Research. (2024). *Education & Training Programs*. Available at: <https://education.scripps.edu>
- SDG&E. (2024). *America's Best Energy Company*. Available at: <https://www.sdge.com/more-information/environment/americas-best-energy-company>
- SDG&E. (2024). *Community Choice Aggregation*. Available at: <https://www.sdge.com/customer-choice/community-choice-aggregation>

- SDG&E. (2024). *Multi-Year Infrastructure Plan*. Available at: <https://www.sdge.com/sites/default/files/S2380064-MIP-FS-FINAL-DIGITAL.pdf>
- SDG&E. (2024). *Tribal Relations*. Available at: <https://www.sdge.com/tribal-relations>
- SDG&E. *Outage Map*. Available at: <https://www.sdge.com/residential/customer-service/outage-center/outage-map>
- Smith, J., Doe, A., & Johnson, M. (2023). *Sustainable ... Equity and Inclusion. Sustainability*. Available at: <https://www.mdpi.com/journal/sustainability>
- State of California Department of Finance. (2024). *State Population Projections (2020-2070)*. Available at <https://dof.ca.gov/Forecasting/Demographics/projections/>
- Stone, D. (2020). *Counting: How We Use Numbers to Decide What Matters*. Liveright Publishing Corporation.
- Turner Center for Housing Innovation, University of California Berkeley. (2022). *The Landscape of Middle-Income Housing Affordability in California*. Available at <https://turnercenter.berkeley.edu/wp-content/uploads/2022/04/Landscape-of-Middle-Income-Housing-Affordability-April-2022.pdf>
- The Center for Effective Philanthropy. (2024). *State of Nonprofits 2024*. Available at https://cep.org/wp-content/uploads/2024/06/NVP_State-of-Nonprofits_2024.pdf
- The Guardian. (2022, March 10). *US 2020 Census Reveals Huge Undercount of Latino Population*. Available at: <https://www.theguardian.com/us-news/2022/mar/10/us-2020-census-huge-undercount-latino-population>
- The Guardian. (2022, March 10). *US 2020 Census: Huge Undercount of Latino Population*. Available at: <https://www.theguardian.com/us-news/2022/mar/10/us-2020-census-huge-undercount-latino-population>
- The Leadership Conference on Civil and Human Rights. (2023). *Why Collecting Disaggregated Data for Native Communities Matters*.
- U.S. Bureau of Labor Statistics. (2022). *Industry injury and illness data*. Available at <https://www.bls.gov/iif/nonfatal-injuries-and-illnesses-tables/soii-summary-historical.htm>
- U.S. Bureau of Labor Statistics. (2022). *Occupational Employment and Wage Statistics*. Available at: https://www.bls.gov/oes/2022/may/oes_41740.htm
- U.S. Bureau of Labor Statistics. (2023). *Occupational Employment and Wage Statistics*. Available at: <https://www.bls.gov/oes/>
- U.S. Bureau of Labor Statistics. (2023). *Quarterly census of employment and wages*. Available at <https://www.bls.gov/cew/downloadable-data-files.htm>
- U.S. Bureau of Labor Statistics. (2024). *Transportation and warehousing: NAICS 48-49*. Available at <https://www.bls.gov/iag/tgs/iag48-49.htm>
- U.S. Census Bureau. (2020). *DEC Demographic and Housing Characteristics*. Available at:

<https://data.census.gov/table/DECENNIALDHC2020.P2?q=rural%20population%20in%20imperial%20county>

- U.S. Census Bureau. (2022). *Census Bureau Releases Estimates of Undercount and Overcount in the 2020 Census*.
- U.S. Census Bureau. (2023). *Imperial County, California*. Available at: <https://www.census.gov/quickfacts/fact/table/imperialcountycalifornia>
- U.S. Climate Data. (2024). *Climate of the United States*. Available at: <https://www.usclimatedata.com/climate/united-states/us>
- U.S. Customs and Border Protection. (2014). *What are Civil Rights and Civil Liberties?* Available at: <https://www.cbp.gov/about/civil-rights>
- U.S. Department of Energy. (2019). *GeoVision*. Available at <https://apps.openei.org/geovision/>
- U.S. Department of Energy. (2024). *U.S. Energy and Employment Report (USEER)*. Available at https://www.energy.gov/sites/default/files/2024-10/USEER%202024_COMPLETE_1002.pdf
- U.S. Department of Health and Human Services. (2020). *Border health status report*. Available at <https://www.hhs.gov/sites/default/files/border-health-status-report-2020.pdf>
- U.S. Department of Homeland Security. (2023). *FY 2022 Annual Report*. Available at: <https://www.dhs.gov/publication/annual-report>
- U.S. Department of Housing and Community Development. (2022). *Point-in-Time Count*.
- U.S. Department of Housing and Urban Development (HUD). (2020).
- U.S. Department of Housing and Urban Development. (2022). *2022 Annual Homeless Assessment Report (AHAR): Part 1*.
- U.S. Department of Housing and Urban Development. (2024). *Barriers to Affordable Housing*. Available at <https://www.huduser.gov/portal/pdredge/pdr-edge-featd-article-081417.html>
- U.S. Department of Transportation, Bureau of Transportation Statistics. (2024). *Border Statistics*.
- U.S. Department of Transportation. (2024). *Active Transportation*. Available at <https://www.transportation.gov/mission/office-secretary/office-policy/active-transportation/active-transportation>
- UC Davis Centre for Population Studies. (2024). *Farm Labor Issues in the 2020s – Summary Report*. Available at: <https://gifford.ucdavis.edu/events/past/april-4-2024-farm-labor-issues-in-the-2020s/farm-labor-issues-in-the-2020s-summary-report/>
- University of California San Diego. (2024). *Life Sciences Programs and Initiatives*.
- UCLA Center for Health Policy Research. (2020). *Case Study of Census Undercount of Latinos and Immigrants in Los Angeles*. Available at: <https://healthpolicy.ucla.edu/our->

[work/publications/health-and-social-service-implications-census-undercount-los-angeles](#)

- United States Department of Agriculture, National Agricultural Statistics Service. (2017). *2017 Census of Agriculture - County Profile: Imperial County, California*. https://www.nass.usda.gov/Publications/AgCensus/2017/Online_Resources/County_Profiles/California/cp06025.pdf
- United States Environmental Protection Agency. (2024). Carbon pollution from transportation. Available at <https://www.epa.gov/transportation-air-pollution-and-climate-change/carbon-pollution-transportation>
- United Ways of California. (2023). The real cost measure in California 2023. Available at <https://public.tableau.com/app/profile/hgascon/viz/TheRealCostMeasureinCalifornia2023/RealCostDashboard?publish=yes>
- University of California Cooperative Extension San Diego. (2024). *Cultivating solutions through cooperation*. <https://cesandiego.ucanr.edu/>
- University of San Diego. (2023). *State of Nonprofits & Philanthropy in San Diego*. Available at <https://digital.sandiego.edu/cgi/viewcontent.cgi?article=1019&context=npi-stateofnp>
- Urban Institute. (2024). How Housing Instability Affects Educational Outcomes. Available at <https://housingmatters.urban.org/articles/how-housing-instability-affects-educational-outcomes>
- Urban Institute. (2022). *Undercount of Children of Immigrants*. Available at: <https://www.urban.org/urban-wire/better-census-data-children-immigrants-would-help-them-and-nation>
- Urban Institute. *Undercount of Children of Immigrants*. Available at: <https://www.urban.org/urban-wire/better-census-data-children-immigrants-would-help-them-and-nation>
- Voice of San Diego. (2024). *SDG&E: San Diego Would Be Out \$11 Billion if it Breaks Away, Makes Public Grid*. Available at: <https://voiceofsandiego.org/2024/03/14/sdge-san-diego-would-be-out-11-billion-if-it-breaks-away-makes-public-grid/>
- Walker, G., & Devine-Wright, P. (2008). *Community Renewable Energy: What Should It Mean?* *Energy Policy*, 36(2), 497-500. Available at: <https://doi.org/10.1016/j.enpol.2007.10.019>
- Williams Institute. (2019). *LGBT Demographic Data Interactive*.
- World Economic Forum. (2023). *Struggling cities should take notes on Detroit's revival*. Available at <https://www.weforum.org/>
- Wyandotte Economic Development Council. (2024). Available at [WYEDC Reports](#)