



Northern Waterfront Economic Development Initiative Strategic Action Plan



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CONTENTS

1. Introduction	1
a. Purpose.....	1
b. Background	2
c. Community Development & Human Capital	3
d. Transitioning to Advanced Manufacturing	3
e. Challenges.....	3
2. Economic Development Strategy.....	4
a. Cluster Approach.....	4
b. Guiding Principals	4
c. Strategic Direction	5
i) Vision.....	5
ii) Mission Statement.....	5
iii) Goals & Objectives.....	5
d. Actions	6
i) Business Environment & Competitiveness	6
ii) Talent Development	8
iii) Business Vitality/Cluster Development	10
iv) Entrepreneurship & Innovation.....	12
v) Target Industry Attraction	13
4. Implementation Plan	14
5. Monitoring Success	20
6. Appendix: Manufacturing Details, Cluster Profiles, and Notes.....	22

INTRODUCTION

Historical Context

Contra Costa's Northern Waterfront extends 55-miles along the shoreline of the Carquinez Straits and Suisun Bay to the confluence of the Sacramento-San Joaquin Rivers, parallel to SR 4. The cities of Hercules, Martinez, Concord, Pittsburg, Antioch, and Oakley are located along the Northern Waterfront, as are the unincorporated communities of Rodeo, Crockett, Port Costa, Clyde, Pacheco, and Bay Point. This region originally served as a shipping point for wheat and other agricultural products grown in Contra Costa County. Fruit, nuts and vegetables were also processed, packed, and shipped to market.

While California grew rapidly following the discovery of gold in the Sierra foothills, the *"true wealth in California was often found in the goods and food produced in Contra Costa"* - primarily by industries located along its northern shoreline.¹ Initially, agriculture related jobs were the primary source of employment, but industrial development came early, beginning in the late 1800s, attracted by access to water transportation, inexpensive land, and cheap power.² Companies such as Redwood Manufacturing, Selby Smelting & Lead, Union Oil, Mountain Copper, Hercules Powder Works, California Fruit Packers, C&H Sugar, and Columbia Steel built processing facilities along the shoreline that produced explosives, chemicals, petroleum, sugar, cement, lumber, silver, lead, and steel products. These resource-based industries formed the basis of the Northern Waterfront's economy during the late-19th and early-20th centuries. Manufacturing grew to become the dominant employment sector in the early 1900s. By 1962, almost 40% of the county's workforce was employed in manufacturing. Today less than 6% of the workforce is employed in the manufacturing sector.

Contra Costa's economy has undergone several transformations over the years, moving from its initial agriculture base to manufacturing then suburban development with residential subdivisions, retail shopping centers, and office parks.³ As manufacturing employment declined, the Northern Waterfront was left with an older built environment, aging infrastructure, and pockets of poverty with above-average unemployment. Over the past several decades manufacturing employment has continued to decline. Between 2001 and 2011 approximately 45 establishments, mostly small businesses with less than 50 employees, closed their doors or moved out of the area. In the post-recession period, the Northern Waterfront has seen a net gain in new businesses.

Purpose

Although the Northern Waterfront has attracted new business investment, transitioning from an economy based on heavy industry to **a sustainable economy based on advanced manufacturing, innovation, and new technologies** remains a work in progress. While traditional manufacturing employment has been declining, new opportunities are emerging. The Northern Waterfront is uniquely positioned to take advantage of emerging trends in the advanced manufacturing sector, attracting job growth based on 21st century occupations and technologies. Local governments recognize the need to expand and diversify their economic base, increase employment opportunities for local residents, strengthen their tax base, and improve the quality of life for residents. In positioning the region to attract new business investment a number of challenges exist, including aging infrastructure, a complex regulatory environment, and a lack of modern manufacturing facilities. The NWEDI provides a vehicle for residents, community organizations, local governments, educational institutions, workforce training providers, and private industry to engage in a meaningful dialogue about the issues, goals, actions, and capacity building that would best serve economic development objectives for the region. To address specific opportunities and challenges, this Strategic Action Plan (SAP) proposes to build upon the region's assets and competitive advantages to create long-term prosperity. The SAP is intended to complement the county and cities' Climate Action Plans and Housing Elements. By working together, local policy makers can position the Northern Waterfront as a competitive 21st century economic asset that attracts innovative companies creating advanced manufacturing jobs for local residents in new emerging growth industries.

Evolution of the Initiative

On February 26, 2013, the Contra Costa County Board of Supervisors authorized the Department of Conservation and Development (DCD) to begin working on an initiative to promote economic development along the Northern Waterfront by collaborating with a broad spectrum of stakeholders to understand the current and emerging trends and issues affecting economic development in the region. At a Board meeting on April 4, 2013, DCD staff recommended that the Board of Supervisors approve a map establishing the boundaries for a Northern Waterfront study area and a proposed work program and timeline. The Northern Waterfront study area included several unincorporated communities (Rodeo, Crockett, Port Costa, Pacheco, and Bay Point) and six cities (Hercules, Martinez, Concord, Pittsburg, Antioch, and Oakley). To provide oversight for the Northern Waterfront Economic Development Initiative (NWEDI) the Board of Supervisors established an ad hoc committee composed of two Board members whose districts constituted the Northern Waterfront study area. The ad hoc committee has met on a periodic basis to receive updates about the project's status and obtain public input.⁴ The overall effort was supported and managed by DCD staff. A Work Group was formed, which was comprised of staff from the six cities and the county to guide the technical analysis. The Work Group met regularly over a period of nine months, leading up to a Public Forum held on January 10, 2014 with over 400 individuals in attendance representing business, labor, environmental, public safety, economic and workforce development, education, and community based organizations.

Following the Public Forum, the Work Group continued to meet periodically to receive input, exchange ideas, and provide guidance regarding the NWEDI. The county and cities, with the goal of developing a strategic action plan for the Northern Waterfront economy, adopted resolutions supporting regional collaboration efforts. The DCD, East Bay Leadership Council, and Workforce Development Board of Contra Costa County held meetings over a 12-month period where interested parties were able to attend and participate in discussions focused around eight policy areas, which included regulatory environment, infrastructure investment, quality of life, workforce development, small business assistance, financial incentives, regional branding & marketing, and cluster development and innovation. In addition, meetings were held over a three-year period with various community and business groups, environmental organizations, local residents, technical experts, Municipal Advisory Council's (MAC's), economic and workforce development organizations, and regional planning agencies to raise awareness about the NWEDI and to solicit input for the development of a strategic action plan (SAP). DCD staff met with various regional agencies regarding the NWEDI, including the Metropolitan Transportation Commission (MTC), Association of Bay Area Governments (ABAG), Contra Costa Transportation Authority (CCTA), Bay Conservation and Development Commission (BCDC), U.S. Environmental Protection Agency (EPA), and the U.S. Economic Development Administration (EDA). These community outreach efforts have served as an important tool to identify issues and concerns, establish goals and objectives, and discuss a common vision for economic development along the Northern Waterfront.

On July 18, 2017, the County Board of Supervisors unanimously approved a scope of work and budget for Phase 2 of the NWEDI, including the development of a strategic action plan. On-going community outreach efforts have provided additional opportunities for local residents and stakeholders to engage in meaningful conversations about the goals and actions that would best serve economic development objectives for the Northern Waterfront. In early 2018 the City of Brentwood joined the NWEDI and meetings were held with city and county economic development staffs and city managers within the Northern Waterfront to move the Initiative forward with preparation of an economic development strategic action plan.

Community Development and Human Capital

Social, community, and human capital development must be a core part of any economic development strategy. Investing in human capital is the most effective way of promoting economic growth and distributing its benefits more broadly and equitably. Improving worker's skills enhances labor market outcomes in the form of higher employment rates and earnings and in promoting social mobility. In the long run, investing in worker's skills is far less costly than paying the price of poorer health, lower incomes, unemployment and social exclusion – all of which are closely tied to lower skills. Promoting high quality, affordable education and workforce development plays a crucial role in expanding access to economic opportunity and social mobility for lower-income individuals. Although economic development and community development start from different perspectives, they share a common goal: to strengthen communities by improving the opportunities for all people to productively engage in the regional economy. The hallmark of a truly prosperous regional economy is one where the benefits and opportunities of that prosperity are broadly available to many of those within it.⁵ While human capital elements are woven in throughout this SAP's goals and objectives, it receives the spotlight in a companion report, commissioned as part of the NWEDI work program in 2017-18.⁶ The *Northern Waterfront Economic Development Initiative Conceptual Framework – Community and Human Capital Development Strategy* complements NWEDI efforts by supporting human capital and community development through the expansion of existing small businesses and investment in small business incubation, resident workforce training and job placement, and strategic regional partnerships to reach hard to serve populations and increase equitable access to employment opportunities and participation in the local economy.

Transitioning to Advanced Manufacturing

The future of the Northern Waterfront lies not in the low skilled, labor-intensive, mature industries of the past, but in transitioning to new emerging industries where the region can capitalize on advanced manufacturing processes, product innovation, and a highly skilled workforce that will enable local firms to thrive in a new era of global competition. *"No region in decline has ever reversed its fortunes without growth in the advanced manufacturing sector."*⁷ In *Retooling for Growth*, national experts present a new framework and innovative policy solutions to sculpt a sustainable and supportable economy for older industrial areas.⁸ The convergence of market forces, new technologies, and public policies presents a unique opportunity for the Northern Waterfront to diversify its manufacturing base by attracting new emerging industries (see Target Industries in the Appendix) in clean technology, advanced vehicle technologies, aerospace, and biomedical/life sciences, creating quality jobs for local residents and building a stronger more robust economy.

Challenges

While the Northern Waterfront offers a number of competitive advantages for advanced manufacturing, there are also some challenges. A 2013 survey of local manufacturers identified several constraints: 1) most small manufacturing firms are in need of financing and marketing assistance, 2) the lack of trained workers limits their ability to expand, 3) high utility costs, rental rates, and land and building costs increase operating cost, and 4) the regulatory environment increases the time, cost, and uncertainty associated with development approvals. In addition, pressure from residential developers for the conversion of industrial zoned land to residential uses increases land prices and makes it difficult for manufacturers to find locations that are buffered from nearby residential areas. When residential land and public facilities such as schools and hospitals are located adjacent to or in proximity to manufacturing facilities conflicts arise such as truck traffic, noise, glare, noxious odors, and other environmental issues. Challenges also include the lack of an efficient regional transportation network that is connected to the Interstate highway system to facilitate goods movement. In order to be competitive, manufacturers along the Northern Waterfront must be able to move raw materials and finished products in and out of the region without delays due to congestion and construction. These constraints must be addressed in order for the Northern Waterfront to truly become a 21st century economic asset.

ECONOMIC DEVELOPMENT STRATEGY

An Industry Cluster Approach

In order to enhance the region's competitiveness, an industry cluster-based strategy focused on enhancing the competitiveness of existing businesses, facilitating new business formation, and attracting new businesses in target industry clusters is proposed. Communities that invest in improving their existing assets and industry clusters tend to have stronger more resilient economies.⁹

Guiding Principles

The Economic Development Strategy is built on five guiding principles to create a more prosperous future for residents, businesses, and communities along the Northern Waterfront. The guiding principles include:

1. Economic Opportunity for Business, Individuals, and Communities

- a. Create local job opportunities for all residents with career pathways leading to jobs paying livable wages
- b. Attract clean and green 21st century jobs
- c. Encourage the development of jobs paying livable wages
- d. Promote the growth of emerging 21st century industry clusters that are the engines of sustainable economic growth

2. Environmentally Sustainable with the Goal of GHG Reduction

- a. Respect the environment and improve the quality of life for local residents
- b. Improve public access to the waterfront
- c. Adopt placemaking principles that incorporate local community plans and improves the quality of the physical environment

3. Talent Driven

- a. Develop training programs to improve access to advanced manufacturing jobs
- b. Develop a pipeline of skilled workers

4. Enhanced Tax Base

- a. Increase tax revenues and the capacity of local governments to fund public services and infrastructure improvements

5. Collaborative

- a. Engage in regional collaboration and community partnerships to advance the region's economic prosperity
- b. Work with local and regional partners on economic development efforts to create an environment that supports regional job creation

Strategic Direction

The Strategic Action Plan sets out a shared vision, realistic goals, and specific strategies that can be implemented over the next 10 years and beyond to grow the regional economy. The Plan serves as a roadmap to guide regional economic development policy, programs, and investment. Ultimately, its success depends on the level of engagement from the county and cities to work together and with their partners in executing the strategies laid out in the Plan.

The goals and objectives in the Plan have the potential to move the Northern Waterfront closer to becoming a location of choice for agile, innovative manufacturing companies and regional living wage jobs. Adoption of the Plan's recommendations will demonstrate the commitment by local governments to revitalize the Northern Waterfront into an environmentally sustainable 21st century economic asset. This in turn will attract private sector investment and encourage manufacturing firms to locate and expand within the region. The Plan is not a substitute for a local agency's normal master plan process or capital improvement program, but rather fulfills the purpose of coordinating collective action focused on economic development issues of a regional or multi-jurisdictional nature. The Northern Waterfront Economic Development Strategic Action Plan is intended to complement each jurisdiction's Climate Action Plans and Housing Elements, not supplement or replace them.

Vision

To build an environmentally sustainable regional economy and communities with equitable access to quality job opportunities and economic participation for all residents.

Mission Statement

The NWEDI endeavors through collective action to improve the economic prosperity and quality of life for local residents by building and maintaining an environmentally sustainable regional economy that enhances the health and prosperity of local communities, strengthens local tax bases, and supports the growth of 21st century advanced manufacturing firms.

Goals & Objectives

Five Goals are identified in the Plan, which address: 1) the Business Environment & Competitiveness, 2) Talent Development, 3) Business Vitality/Cluster Development, 4) Entrepreneurship & Innovation, and 5) Target Industry Attraction. The goals are supported by objectives and specific actions that when implemented will help achieve the vision of revitalizing the Northern Waterfront as a vibrant 21st century regional economy.

GOAL #1: DEVELOP A SUSTAINABLE INCLUSIVE REGIONAL ECONOMY

Description: The overarching goal of economic development is to create and maintain a strong, vibrant environmentally sustainable economy that improves the overall prosperity of the community by creating equitable access to employment opportunities for all residents, improving the standard of living, and expanding the local tax base.^{10, 11, 12} Smart economic development strategies also recognize the value of a high quality of life and a strong sense of place in attracting business investment and a skilled workforce.¹³ Economic prosperity is also “linked to a region’s ability to prevent, withstand, and quickly recover from major disruptions (i.e., shocks) to its economic base.”¹⁴ By helping existing businesses stay competitive, they are more likely to remain in the community and expand.^{15, 16} Industry Cluster-based strategies are another important tool for strengthening a local economy.¹⁷ “Smart, place-based strategies focus not just on producing (or attracting) any job, but generating good-paying jobs in durable industries and ensuring those jobs are directly accessible by workers in adjacent communities.”¹⁸

Objective 1.1: Promote a business environment that allows the advanced manufacturing sector to flourish and expand

Action 1.1.1: Support the retention and expansion of existing small and medium-sized producers.

POTENTIAL ACTION STEPS

- Develop a **Coordinated Regional Business Retention and Expansion Program** to support the growth and expansion of small and medium-sized firms in the manufacturing sector by providing business and technical assistance in the areas of management assistance, marketing, financing, process improvements, supply chain development and management, strategic planning, product design, green manufacturing, export assistance, and workforce training.
- Expand the **Made in Contra Costa Initiative** with a focus on assisting small producers in the Northern Waterfront with business development, marketing, distribution, financing, product improvements, job training, and introductions to subject matter experts and resources to improve their workforce, manufacturing processes, marketing, and performance.
- Encourage development of **Makerspaces** that combine shared facilities and equipment with business assistance and subject matter experts where entrepreneurs can work on product ideas, receive expert advice, build prototypes, and manufacture products on a small scale. The Makers Movement¹⁹ allows entrepreneurs to network and market their products through “maker-fairs”²⁰ and get-togethers. Cities, such as San Leandro, support the Makers Movement in order to attract manufacturers and entrepreneurs to their community.

Action 1.1.2: Launch a cluster initiative focused on industries with the greatest potential for expanding the regional economy.

POTENTIAL ACTION STEPS

- **Facilitate Cluster Development** by identifying core companies for each target industry, engaging key stakeholders, holding industry meet-ups, supporting industry-led actions, engaging in cluster branding & promotion, providing workforce training, making strategic infrastructure investments, providing business support services, and attracting suppliers, vendors, and service providers in the cluster supply chains.
- **Encourage Sustainable Industries** that emphasize resource efficiency, environmental responsibility, and the reduction and prevention of pollution and waste.

- Actively **Recruit New Startups** by partnering with local universities and research labs to recruit companies acquiring technology and intellectual property for commercialization from 1) UC Berkeley Haas School of Business²¹ 2) local accelerators & incubators such as Cyclotron Road, and 3) research labs (LBNL, LLNL, and Sandia National Laboratories).
- **Leverage Existing Assets** such as the **GOMENTUM STATION** autonomous-vehicle test bed facility in Concord to attract advanced transportation technology companies.

Action 1.1.3: Foster an environment that is business friendly and customer service oriented.

POTENTIAL ACTION STEPS

- **Adopt Business Friendly Policies** that support business retention and attraction based on best practices.²²
- **Offer Concierge Services**²³ to assist existing and new businesses with the permitting and regulatory process, including assistance with other agencies such as the county health department, fire district, utility districts, and other regulatory bodies.²⁴
- **Develop Permitting Guides** for the county/cities to clearly communicate their regulatory and permitting processes, and requirements.

Objective 1.2: Develop Healthy Vibrant Communities that are Safe, Environmentally Sustainable, and Distinctive

Action 1.2.1: Expand access to local employment opportunities for all residents.

POTENTIAL ACTION STEPS

- Consider adopting a uniform **First Source Local Hire Policy** to encourage the hiring of local residents by new and existing businesses.
- **Locate Businesses in Industrial Parks** that are easily accessible to workers in nearby communities to improve the job/housing balance.

Action 1.2.2: Enhance the quality of life of local communities through Placemaking, which contributes to the region’s desirability as a place to live, work, play, learn, and conduct business.

POTENTIAL ACTION STEPS

- Foster **Distinctive Communities with a Strong Sense of Place** by identifying and investing in assets and amenities unique to each community.
- Protect and **Restore Sensitive Wildlife Habitat and Wetlands** along the shoreline and major creeks, creating additional wetlands and riparian habitat, improved access, and recreation opportunities.
- Develop a **Network of Interconnected Trail Systems and Bicycle Routes** along the Northern Waterfront to serve the recreational and commute needs of local residents, workers, and visitors.
- Increase funding for **Code Enforcement Efforts** to clean-up and avoid the appearance of blight.

Action 1.2.3: Collaborate with local partners and regional agencies to develop a balanced economic base and regional economy.

POTENTIAL ACTION STEPS

- Develop and implement a **Regional Plan for Business Resiliency** by working with local and regional agencies and other stakeholders to create a stronger region that is able to withstand and recover quickly from economic dislocations and natural disasters.

GOAL #2: CREATE A GLOBALLY COMPETITIVE WORKFORCE THAT MEETS INDUSTRY NEEDS AND SUPPORTS THE EXPANSION OF THE ADVANCED MANUFACTURING SECTOR

Description: Today's manufacturing jobs require a workforce with different skill sets than those of past eras. Attracting a new generation of skilled, technology savvy workers to the manufacturing sector has become increasingly important with the adoption of advanced manufacturing processes. Over the next decade there will be a loss of skilled workers due to retiring baby boomers. Attracting a new generation with the necessary skills required by employers is a challenge. Local economic development entities, workforce training providers, educators, and industry should collaborate on improving the competency and skill level of the resident workforce, including historically underserved communities and preparing them for in-demand occupations that meet the needs of employers in target industries. Having a robust training program and a pipeline of new entrants will be an important factor in attracting and retaining manufacturing firms and the reduction of poverty and unemployment.²⁵

Objective 2.1: Align Workforce Training with Industry Needs

Action 2.1.1: Develop a robust pipeline of qualified workers with the knowledge and skills for jobs in target industries.

POTENTIAL ACTION STEPS

- **Survey Advanced Manufacturing Firms** along the Northern Waterfront to identify workforce needs, skill gaps, and training requirements.
- **Form industry Partnerships** that include private sector companies, the Contra Costa County Workforce Development Board, community colleges, the East Bay Advanced Manufacturing Partnership, the East Bay Biomedical Manufacturing Network, and community based organizations to develop training programs for careers in the advanced manufacturing sector.
- **Design & Implement a Workforce Recruitment/Job Placement Program** to assist businesses with employee recruitment, job placement, and workforce training with a focus on priority hiring of local residents and historically underserved communities.
- Expand training opportunities for **Up-skilling the Incumbent Workforce**, leading to sustainable jobs, higher wages, career advancement, and increased productivity.²⁶

Action 2.1.2: Assist residents and historically underserved communities with employment barriers secure jobs leading to sustainable wages and benefits.

POTENTIAL ACTION STEPS

- Create **Occupational and Soft Skills Training Programs** to assist residents with employment barriers acquire the necessary skills leading to middle income careers by providing soft skills training, social services, workforce training, and job placement services needed to connect unemployed and underemployed residents in the region with job opportunities in the manufacturing sector.
- Target **Job/Skills Training** for unemployed and underemployed local residents and young adults with supportive services as needed.

Objective 2.2: Attract and Train the Next Generation of Workers for the Advanced Manufacturing Sector

Action 2.2.1: Raise awareness of manufacturing as a viable career choice with emphasis on advanced technologies and career pathways to middle wage jobs.

POTENTIAL ACTION STEPS

- Develop ***Manufacturing Career Outreach Programs***, such as career expos and informational seminars to expose local residents and young adults at local high schools and community colleges to career opportunities in the advanced manufacturing sector.
- Create a ***Manufacturing Apprenticeship Program***, such as a manufacturing institute, internship, or other work-based learning program for high school and college students focused on careers in advanced manufacturing.
- Expand ***Career Technical Education Programs*** in the manufacturing sector at the secondary and postsecondary levels through regional partnerships and industry associations.
- Partner with local community colleges to ***Establish an Advanced Manufacturing Training Institute***.
- Expand workforce training programs for local residents and historically underserved communities to help alleviate relatively high rates (compared to Bay Area region averages) of poverty and unemployment along the Northern Waterfront.

GOAL #3: ENHANCE REGIONAL COMPETITIVENESS

Description: Having development ready sites with basic infrastructure is the foundation of a competitive regional economy. Infrastructure improvements are needed to support the expansion of the manufacturing sector, including local and regional truck routes, rail access, maritime shipping, broadband internet capacity, electrical power, and sewer/water infrastructure. *“The quality of a [community's] infrastructure has a profound effect on its ability to attract development and the success of companies that choose to locate there.”²⁷*

Objective 3.1: Strengthen the Northern Waterfront as a Premier Location for Advanced Manufacturing

Action 3.1.1: Maintain an adequate supply of industrial zoned land to support employment growth and business expansion and attraction.

POTENTIAL ACTION STEPS

- Develop an **Online Searchable Database** and maintain an inventory of industrial zoned land within the Northern Waterfront that includes parcel information, zoning, utilities, and other information required by site selectors, such as demographic, income, and labor force data. The database would include the number and size of parcels, vacant and underutilized sites, zoning, infrastructure capacity, rail service, and deep-water access.
- **Cleanup & Redevelop Brownfield Sites** utilizing U.S. EPA Grant Programs as seed capital. The U.S. EPA Small Business Liability Relief and Brownfield’s Revitalization Act provides grant funding, including revolving loan funds, to inventory, assess, conduct reuse planning studies, and clean-up brownfield sites.
- Identify and **Designate Prime Industrial Sites As Priority Production Areas** for manufacturing and related activities.
- Explore the establishment of an **Advanced Manufacturing Innovation District** ^{28,29,30}

Objective 3.2: Invest in Regional Transportation Infrastructure to Improve Accessibility and Goods Movement

Action 3.2.1: Develop a regional multi-modal goods movement system that increases capacity and enhances connectivity in order to move raw materials and finished goods efficiently.

POTENTIAL ACTION STEPS

- Develop a **Multi-modal Goods Movement Plan** that outlines a long-range strategy and prioritizes transportation infrastructure improvements for moving goods efficiently, safely, and sustainably within and through the Northern Waterfront.
- Secure **Funding for Priority Goods Movement Infrastructure Projects**³¹ by collaborating with key transportation agencies (CCTA, MTC, Caltrans, and others) on the inclusion of regional transportation projects in planning and funding documents.
- Align **Northern Waterfront Economic Development Priorities with Regional Transportation Plans and Funding Programs**, including MTC’s Bay Area Goods Movement Plan and Caltrans’ Goods Movement Action Plan and Freight Mobility Plan.

- Improve **Regional Arterials and Goods Movement Networks** including Pacheco Blvd., San Pablo Ave., Cummings Skyway, Port Chicago Hwy, Loveridge Road, and Pittsburg-Antioch Hwy to improve access and circulation between employment centers and highway networks to eliminate truck traffic through residential neighborhoods.
- **Conduct a Short Line Rail Road Feasibility Study** that identifies opportunities for improved access to Class I rail lines, facilitates goods movement, eases traffic congestion on regional highways, reduces green house gas emissions, and attracts manufacturers due to the reduced cost and convenience of shipment by rail.
- **Support the U.S. Army Corps of Engineers (USACE) Dredging Plan** and improvements to the Baldwin Shipping Channel. Annual maintenance dredging is required to maintain a channel 300 feet wide and 35 feet deep. Encourage the USACE to complete the necessary feasibility, environmental, and technical studies for deepening the channel to accommodate current and future ships.
- Support **Investment in Transportation Projects** which enhance connectivity, reduce Green House Gasses, and provide alternate commute modes, including access to rail and ferry services such as the Hercules Regional Intermodal Transportation Center (which also has goods movement benefits), and other projects of regional benefit.

Objective 3.3: Expand & Upgrade Utility Infrastructure to Support Business Growth

Action 3.3.1: Work with utility service providers to improve regional utility infrastructure.

POTENTIAL ACTION STEPS

- Identify and **Prioritize Water and Sewer Infrastructure Projects** to support business growth and expansion, including treated water distribution and storage, untreated water supply and transport, water treatment facilities, and water quality and reliability.
- Increase the **Supply of Advanced Treated Recycled Water** available for manufacturing applications.
- **Upgrade Broadband Infrastructure** to improve capacity within the Northern Waterfront.
- Explore **Funding Mechanisms for Infrastructure Improvements**, including the establishment of a Tax Increment Financing District.

Objective 3.4: Ensure that the Northern Waterfront Remains Competitive with Other Locations

Action 3.4.1: Utilize targeted incentives to support business retention, expansion, and attraction.

POTENTIAL ACTION STEPS

- Establish a **Competitive Economic Development Incentive Program** that includes utility rebate/rate reduction programs from PG&E, sales and use tax exclusions, hiring credits, workforce training and job placement programs, FAR bonuses, deferral or waiver of fees, expedited permitting, and business tax exemptions. A variety of incentive programs used by local governments (such as the one offered by the City of Vacaville)³² are available through PG&E, local service districts, the Contra Costa Workforce Development Board, and the Governor’s Office of Business and Economic Development (GO-Biz)³³, which can be used to retain and attract manufacturing firms.
- Establish and implement an **Industrial Development Bond Program** by leveraging existing programs offered by the East Bay EDA, CALED, California Infrastructure and Economic Development Bank, and other entities.
- Actively market the Contra Costa County **Recycling Market Development Zone** low interest loan program.

GOAL #4: FACILITATE NEW BUSINESS FORMATION AND ENTREPRENEURSHIP

Description: The role of entrepreneurs in creating new businesses is critical to local economic development success.³⁴ Census Bureau data shows that the bulk of net new jobs are created by early-stage companies with fewer than 20 employees. Entrepreneurs face many challenges in launching and growing new businesses and need access to managerial, technical, and financial assistance and resources to support them in their endeavors. Creating a nurturing environment that cultivates and supports entrepreneurs is a key factor in promoting new business formation.³⁵

Objective 4.1: Cultivate an entrepreneurial environment that fosters innovation and new business formation

Action 4.1.1: Assist entrepreneurs in launching new businesses.

POTENTIAL ACTION STEPS

- Create affordable and flexible **Shared Co-Workspaces** with access to training and mentoring programs.
- Investigate the feasibility of establishing an **Advanced Manufacturing Incubator/Accelerator** for start-up manufacturing firms that provides low-cost space, support services, business assistance, and networking opportunities.
- Explore the opportunity for development of a **Commercial Kitchen/Food Business Incubator** like Kitchen@812 in Pinole.
- Investigate the feasibility of **Launching a Non-profit Cleantech Accelerator** like the Cleantech Open's startup accelerator, LA Cleantech Incubator³⁶, or the North Carolina Clean Energy Technology Center.
- Actively participate in the East Bay EDA's **Annual Entrepreneurship and Innovation Awards Program**.

Action 4.1.2: Recruit new startup companies acquiring intellectual property developed by local research institutions.

POTENTIAL ACTION STEPS

- Proactively work with local university and research lab technology transfer offices in the early stages of a company's due diligence process to encourage companies and entrepreneurs acquiring locally developed technologies to locate in the Northern Waterfront.
- **Investigate Opportunities in Emerging Industries** such as Unmanned Aerial Vehicles (UAV) and Systems (UAS) manufacturing by leveraging the proximity of county-owned Buchanan and Byron airports, agricultural areas, and construction projects.

Goal #5: ESTABLISH A REGIONAL BRAND IDENTITY TO ATTRACT NEW BUSINESS INVESTMENT

Description: Business recruitment/attraction programs communicate a community's location advantages and help focus economic development efforts on companies in target industries. Place branding highlights the distinctive attributes of a place as a business location based on its assets, location, and characteristics. Successful branding puts a region's specific attributes and competitive advantages in the context of key site location requirements to attract business and industry that fit into the local economy thereby strengthening existing sectors/clusters rather than attempting to attract businesses that are not complementary.^{37,38} Place marketing helps to promote "the place's values and image so that potential users are fully aware of the place's distinctive advantages."³⁹

Objective 5.1: Promote the Northern Waterfront as a Premier Location for Advanced Manufacturing

Action 5.1.1: Create a Globally Recognized Brand Identity.

POTENTIAL ACTION STEPS

- Embark upon a **Unified Branding Campaign** that capitalizes on the Northern Waterfront's strategic location, proximity to major markets, transportation infrastructure, skilled workforce, industrial zoned land, and other key assets.

Action 5.1.2: Increase the external visibility and awareness of the Northern Waterfront.

POTENTIAL ACTION STEPS

- Develop & implement a **Regional Marketing Program** aimed at site selectors and corporate executives, to communicate the Northern Waterfront's strategic advantages and key assets.
- Develop **Marketing Materials and Tools** that include collateral marketing materials focused on target industries.
- Create a **Regional Economic Development Website** with links to individual city/county economic development websites that provides demographic, economic, real estate and other relevant site selection information for businesses.

Action 5.1.3: Actively Recruit Advanced Manufacturing Firms in Target Industry Clusters.

POTENTIAL ACTION STEPS

- Start a **Lead Generation Program** working with GO-Biz, Industrial Real Estate Brokers, and regional economic development organizations to identify and recruit advanced manufacturing firms in target industries.
- **Strategically Recruit Businesses in Target Clusters** including core companies, supply chain vendors, related and supporting businesses, and specialized service providers to enhance and strengthen existing clusters.
- Jointly **Participate in Selected Trade Shows and Industry Sponsored Events** focused on target industries.
- Investigate and pursue opportunities to **Attract Foreign Direct Investment** by manufacturing firms looking to establish business operations in the Bay Area/California.

Implementation Plan

The following Implementation Plan highlights the key activities over the next 10 years that are considered important to the success of the NWEDI. Some actions will take longer to accomplish, but need to be started within the initial term of the SAP. The Implementation Plan includes three major elements: (1) Specific Tasks: what will be done and by whom. (2) Time Horizon: when will it be done, and (3) Resource Allocation and Potential Funding Sources: (i.e., money, staff) needed to carry out the specified tasks and activities. The Implementation Plan also includes expected outcomes that address:

1. Diversification of the regional economy;
2. Providing a foundation that promotes economic prosperity and a good quality of life for local residents;
3. Creating desirable places and economic opportunity;
4. Partnering for success

Timeframe

Anticipated timeframes required to complete the proposed actions include:

- **Short Term:** tasks that can be accomplished within 12-36 months.
- **Medium Term:** tasks that can be accomplished within a 4-10 year period.
- **Long Term:** tasks that can be accomplished within a 10-20 year period.
- **Ongoing:** activities which are continuous over the term of the Initiative.

IMPLEMENTATION PLAN

GOAL #1: DEVELOP A SUSTAINABLE, INCLUSIVE REGIONAL ECONOMY						
Objectives/Actions	Action Steps	Budget Estimate	Potential Funding Sources	Responsible Parties	Timeframe for Completion	Expected Outcome(s)
<i>Where we want to be?</i>	<i>What steps must be taken to implement each action?</i>	<i>Resources needed to implement this action?</i>	<i>How are we going to pay for this action?</i>	<i>Who is responsible for taking each action?</i>	<i>By when will the action be completed?</i>	<i>What can be expected when all action steps are completed?</i>
Objective 1.1: Promote a Business Environment that Allows the Advanced Manufacturing Sector to Flourish and Expand						
Action 1.1.1:	<ul style="list-style-type: none"> > Develop a Coordinated Regional BRE Program > Expand Made in Contra Costa Initiative > Encourage development of Makerspaces 	Staff and partner time	County/Cities SBDC Contra Costa County WDB	Lead Agency: County/Cities Supporting Partners: Contra Costa SBDC, Contra Costa County WDB, Manex	Short Term Time Line: FY 2019-21	Business growth and an increase in job opportunities Space for local entrepreneurs to prototype and/or build their products
Action 1.1.2	<ul style="list-style-type: none"> > Facilitate Cluster Development > Encourage Sustainable Industries > Actively Recruit Startups from labs > Leverage GoMomentum Station 	Staff and partner time	County/Cities	Lead Agency: County/Cities Supporting Partners: Manufacturers, CCTA Local university/research labs	Ongoing Time Line: FY 2019+	Cluster awareness, collaboration, and growth New early stage companies
Action 1.1.3	<ul style="list-style-type: none"> > Adopt Business Friendly Policies > Offer Concierge Services > Develop Permitting Guides 	Staff and partner time	County/Cities	Lead Agency: County/Cities Supporting Partners: County Health Department Fire Districts/Utility Districts	Short Term Time Line: FY 2019-20	Business retention, expansion, and attraction
Objective 1.2: Develop Healthy Vibrant Communities that are Safe, Sustainable and Distinctive						
Action 1.2.1	<ul style="list-style-type: none"> > Adopt First Source Local Hire Policy > Design & Develop Job Centers 	Staff Time	County/Cities	Lead Agency: County/Cities Supporting Partners: Contra Costa County WDB	Medium Term Time Line: FY 2019-25	Reduced commuting Increased business investment improved job/housing balance
Action 1.2.2	<ul style="list-style-type: none"> > Foster Distinctive Communities > Protect & Restore Sensitive Habitats > Develop Network of Interconnected Trails > Increase code enforcement efforts 	Staff and partner time TBD until specific projects are determined	County/Cities Regional, State, and Federal Grants	Lead Agency: County/Cities Supporting Partners: Public Works Departments, Local environmental groups	Ongoing Time Line: FY 2019+	Jobs Increased business investment Improved access and recreation opportunities
Action 1.2.3	<ul style="list-style-type: none"> > Develop Plan for Economic Resiliency 	Staff and partner time	County/Cities Federal EDA Grants	Lead Agency: County/Cities Supporting Partners: Regional Planning Agencies	Short Term Time Line: FY 2020-21	Ability to recover quickly from economic dislocations

GOAL #2: CREATE A GLOBALLY COMPETITIVE WORKFORCE TO MEET INDUSTRY NEEDS AND SUPPORT THE EXPANSION OF THE ADVANCED MANUFACTURING SECTOR

Objectives/Actions	Action Steps	Estimated Cost	Potential Funding Sources	Responsible Parties	Timeframe for Completion	Expected Outcome(s)
<i>Where we want to be?</i>	<i>What steps must be taken to implement each action?</i>	<i>Resources needed to implement this action?</i>	<i>How are we going to pay for this action?</i>	<i>Who is responsible for taking each action?</i>	<i>By when will the action be completed?</i>	<i>What can be expected when all action steps are completed?</i>
Objective 2.1: Align Workforce Training with Industry Needs						
Action 2.1.1:	<ul style="list-style-type: none"> > Survey Advanced Manufacturing Firms > Form Industry Partnerships > Design & Implement a Workforce Training/Job Placement Program > Provide Skills Training for Incumbent Workers 	Staff and partner time Survey: \$18,000	Contra Costa County WDB WIOA Funds	Lead Agency: Contra Costa County WDB Supporting Partners: Cities/County, Community Colleges, EB Advanced Mfg Partnership, EB Biomedical Mfg Network, Manufacturers	Ongoing Timeline: FY 2019+	Skilled workforce meeting industry needs Higher wages and increased productivity
Action 2.1.2	<ul style="list-style-type: none"> > Reduce Employment Barriers > Job/Skills Training for Unemployed & Underemployed Young Adults 	Staff and partner time	Contra Costa County WDB WIOA Funds	Lead Agency: Contra Costa County WDB Supporting Partners: Community Colleges, Community organizations	Ongoing Timeline: FY 2019+	Increased job opportunities for young adults
Objective 2.2: Attract and Train the Next Generation of Workers for the Advanced Manufacturing Sector						
Action 2.2.1	<ul style="list-style-type: none"> > Develop Manufacturing Outreach Programs > Create a Manufacturing Apprenticeship Program > Expand Career/Technical Ed Programs > Establish an Advanced Mfg Training Institute 	Staff and partner time	Contra Costa County WDB WIOA Funds	Lead Agency: Contra Costa County WDB Supporting Partners: Community Colleges, High Schools, ROP, Industry Associations, Manufacturers	Variable Timelines	Pipeline of young workers

GOAL #3: CREATE A BUSINESS ENVIRONMENT THAT ALLOWS MANUFACTURING FIRMS TO FLOURISH AND EXPAND

Objectives/Actions	Action Steps	Estimated Cost	Potential Funding Sources	Responsible Parties	Timeframe for Completion	Expected Outcome(s)
<i>Where we want to be?</i>	<i>What steps must be taken to implement each action?</i>	<i>Resources needed to implement this action?</i>	<i>How are we going to pay for this action?</i>	<i>Who is responsible for taking each action?</i>	<i>By when will the action be completed?</i>	<i>What can be expected when all action steps are completed?</i>
Objective 3.1: Strengthen the Northern Waterfront as a Premier Location for Advanced Manufacturing						
Action 3.1.1:	<ul style="list-style-type: none"> > Create Online Searchable Database > Cleanup & Redevelop Brownfield Sites > Designate Priority Production Areas > Explore creation of a Manufacturing Innovation District 	Staff and partner time	County/Cities U.S. EPA Brownfields Grant Programs	Lead Agency: County/Cities Supporting Partners: EB Biomedical Manufacturing Network, EB Advanced Manufacturing Partnership	Variable timelines	New business investment and jobs
Objective 3.2: Invest in Regional Transportation Infrastructure to Improve Accessibility and Goods Movement						
Action 3.2.1	<ul style="list-style-type: none"> > Multi-modal Goods Movement Plan > Secure Funding for Priority Goods Movement Infrastructure > Align NWEDI Priorities with Regional Transportation Plans & Funding > Improve Regional Arterials & Goods Movement Networks > Short Line Rail Road Feasibility Study > Support the USACE Dredging Plan 	Staff and partner time TBD until specific projects are determined	County/Cities CCTA MTC Federal/State Grants	Lead Agency: County/Cities Supporting Partners: CCTA, MTC, Caltrans, USACE	Variable timelines	Growth of existing businesses New business investment and jobs
Objective 3.3: Expand & Upgrade Utility Infrastructure to Support Business Growth						
Action 3.3.1	<ul style="list-style-type: none"> > Identify & Prioritize Water & Sewer Infrastructure Projects > Increase Supply of Advanced Treated Recycled Water > Upgrade Broadband Infrastructure > Investigate Financing Alternatives 	Staff and partner time TBD until specific projects are determined	County/Cities Special Districts Utility Companies	Lead Agency: Water/Wastewater Districts, County/Cities Supporting Partners: CCTA, PG&E, Water/Wastewater Districts, ISPs	Variable timelines	Business growth & expansion
Objective 3.4: Ensure that the Northern Waterfront Remains Competitive with Other Locations						
Action 3.4.1	<ul style="list-style-type: none"> > Establish an Incentive Program > Establish & Implement an Industrial Development Bond Program > Promote RMDZ Financing Program 	Staff and partner time TBD	County/Cities East Bay EDA	Lead Agency: County/Cities Supporting Partners: East Bay EDA	Variable timelines	New business investment and jobs

GOAL #4: FACILITATE NEW BUSINESS FORMATION AND ENTREPRENEURSHIP IN THE MANUFACTURING SECTOR

Objectives/Actions	Action Steps	Estimated Cost	Potential Funding Sources	Responsible Parties	Timeframe for Completion	Expected Outcome(s)
<i>Where we want to be?</i>	<i>What steps must be taken to implement each action?</i>	<i>Resources needed to implement this action?</i>	<i>How are we going to pay for this action?</i>	<i>Who is responsible for taking each action?</i>	<i>By when will the action be completed?</i>	<i>What can be expected when all action steps are completed?</i>
Objective 4.1: Cultivate an Entrepreneurial Environment that Fosters Innovation and New Business Formation						
Action 4.1.1:	<ul style="list-style-type: none"> > Create Shared Co-Workspaces > Investigate Feasibility of an Advanced Manufacturing Incubator/Accelerator > Explore Development of a Commercial Kitchen/Food Business Incubator > Investigate Feasibility of a Non-profit Cleantech Accelerator > Participate in Annual Entrepreneurship & Innovation Awards Program 	Staff and partner time TBD		Lead Agency: County/Cities Supporting Partners: EBEDA, WDB, SBDC	Variable Timelines	Increase in entrepreneurial activity, business start-ups, and jobs Advancement of target industries
Action 4.1.2	<ul style="list-style-type: none"> > Work with Local University & Research Lab Technology Transfer Offices > Investigate Opportunities in Emerging Industries 	Staff and partner time		Lead Agency: County/Cities Supporting Partners: UCB, LBNL, LLNL, Sandia	Ongoing Timeline: FY 2019+	Attraction of entrepreneurs, new business start-ups, and new technologies

GOAL #5: ESTABLISH A REGIONAL BRAND IDENTITY TO ATTRACT NEW BUSINESS INVESTMENT

Objectives/Actions	Action Steps	Estimated Cost	Potential Funding Sources	Responsible Parties	Timeframe for Completion	Expected Outcome(s)
<i>Where we want to be?</i>	<i>What steps must be taken to implement each action?</i>	<i>Resources needed to implement this action?</i>	<i>How are we going to pay for this action?</i>	<i>Who is responsible for taking each action?</i>	<i>By when will the action be completed?</i>	<i>What can be expected when all action steps are completed?</i>
Objective 5.1: Promote the Northern Waterfront as a Competitive Location for Advanced Manufacturing						
Action 5.1.1:	> Embark Upon a Unified Branding Campaign	Staff and partner time	County/Cities	Lead Agency: County/Cities Supporting Partners:	Ongoing Timeline: FY 2019+	Globally recognized brand identity for the Northern Waterfront
Action 5.1.2	> Develop & implement a Regional Marketing Program > Develop Marketing Materials & Tools > Create a Regional Economic Development Website	Staff time	County/Cities	Lead Agency: County/Cities	Ongoing Timeline: FY 2019+	Awareness of the Northern Waterfront as a competitive location for advanced mfg New Businesses
Action 5.1.3	> Start a Lead Generation Program > Strategically Recruit Businesses in Target Clusters > Participate in Selected Trade Shows & Industry Sponsored Events > Attract Foreign Direct Investment	Staff and partner time	County/Cities	Lead Agency: County/Cities Supporting Partners: East Bay EDA, GO-Biz, Industrial RE Brokers	Ongoing Timeline: FY 2019+	New Business Investment Increase in jobs

MONITORING SUCCESS

Metrics are critical to the successful outcome of establishing the Northern Waterfront as a competitive location for advanced manufacturing jobs. Therefore, performance measures should be adopted to monitor the progress being made toward achieving the identified goals and objectives.

Performance Measures

There are a number of indicators that can be used to measure the Northern Waterfront's progress in achieving its economic development goals. Tracking these indicators on a regular basis will provide insight into the progress of the regional economy. The following economic indicators can be used as a yardstick for evaluating progress:

Economic Indicators Report – baseline economic indicators to monitor the performance of the regional economy include:

- **Employment growth by industry.** This information can be obtained from the California Employment Development Department's Labor Market Information Division (see www.labormarketinfo.edd.ca.gov).
- **Office and industrial space availability & cost.** Office and industrial space vacancy and lease rates can be obtained from local commercial and industrial real estate brokers. The Building Department can provide information about building permits.

Implementation Status & Outcomes Report – expected outcomes identified in the Plan should be monitored on a periodic basis to ensure that the goals and objectives are being accomplished. Indicators include:

- **Businesses Assisted**, including the number of businesses visited and assisted, as part of the BRE Program.
- **New Business Formations and Attraction.** The county/city clerk's office can provide information on the number of new business licenses added, fictitious business name certificates filed, and types of businesses.
- **Business Dynamics Indicators** that show business formation rates, growth, survival, and competitiveness. Measures include counts and trends in the number of small businesses, new business starts, number of employees, and business survival rates.

Socio-Economic/Quality of Life Indicators – GIS mapping is critical for visualizing data spatially.

- Changes in the number/percentage of households living in poverty
- Percentage of unemployed
- Income levels
- For the metrics above, changes affecting disadvantaged or historically underserved communities relative to the population as a whole.

Re-Evaluating Priorities over Time

Progress in completing actions should be evaluated on an annual basis. An annual report provides a mechanism for making modifications, if necessary, to the Plan. Within the next five years, economic conditions will likely change and new opportunities may arise. While the overall objectives of the economic development strategy may not change over the next five years, the county/cities should reassess their priorities in light of changing conditions and emerging opportunities.

APPENDIX

MANUFACTURING BASE

Historical Legacy

The Northern Waterfront's industrial heritage extends back more than 100 years. The industrial belt appeared along the banks of the Sacramento River beginning in the 1870s. Resource-based industries dominated the region during the late-19th century and early-20th century with the processing of agriculture products, metal ores, crude oil, sugar, cement, chemicals, lumber, and other natural resources. By 1906, some forty factories had opened along the river's shoreline, including more than a half-dozen of the largest factories of their kind in the country at that time. By 1920 the docks along the Northern Waterfront carried over half the tonnage on San Francisco Bay. Edged out by Alameda County in the 1920s in the value of its output, Contra Costa did much better than its Bay Area rivals during the Great Depression and by 1940 was the second county in the state in value of industrial output.⁴⁰ Waterfront industries grew to become the dominant employment sector in Contra Costa County through the early 1960's. Over the past 50-plus years, manufacturing employment has declined as the county's traditional industries matured and the economy transitioned to become more service sector oriented. As manufacturing firms closed, industrial land was repurposed for residential, commercial, and other uses.

REGIONAL CHALLENGES & OPPORTUNITIES

A comprehensive economic base analysis was conducted of the manufacturing sector to evaluate its composition, size, growth rate, specialization, and emerging trends. A detailed SWOT analysis was also conducted to identify key assets, strengths, weaknesses, opportunities, and challenges.⁴¹ These earlier background studies have been updated to reflect current conditions.

Assets and Competitive Advantages

The Northern Waterfront has a number of important assets that speak to the region's unique assets and competitive advantages^{42,43} including a deep-water shipping channel, marine terminals, two Class 1 railroad lines, freeway access, proximity to workforce housing, electric power generating capacity, industrial zoned land, a skilled workforce, an existing base of manufacturing companies, and proximity to growing markets in the Bay Area and Northern California. An East Bay innovation eco-system that includes research labs such as Lawrence Livermore National Laboratory, Sandia National Labs, Lawrence Berkeley National Laboratory, Joint BioEnergy Institute, Energy Biosciences Institute, and Cyclotron Road supports the manufacturing sector.

Emerging Opportunities

In recent years, new opportunities for manufacturing employment have risen as global trends, market forces, and new technologies converge, presenting a unique opportunity for the Northern Waterfront to become a 21st century economic asset. Manufacturing is being reshaped by the adoption of advanced manufacturing processes and shifting global value chains.⁴⁴

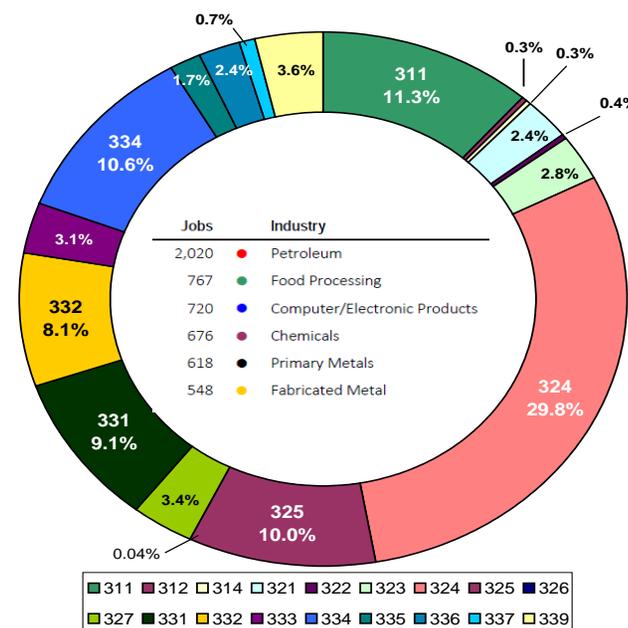
Economic Significance of the Manufacturing Sector

The manufacturing sector is important to the Northern Waterfront regional economy. It is the sixth largest employment sector with over 6,680 workers and average wages well above the county's median household income. In 2017, the Northern Waterfront accounted for 44.8% of the county's manufacturing jobs and 35.4% of the county's gross regional product (GRP). While industrial land uses constitute a small percentage of the total number of taxable parcels, their assessed value makes up a significant portion of the local tax base. In addition, local spending by the manufacturing sector generates additional demand for goods and services, thereby creating employment in other sectors of the economy. Annual capital spending on repairs and upgrades provides on-going jobs in the construction and maintenance sectors. When an enterprise purchases goods and services from other businesses, it generates an indirect jobs impact, or multiplier effect. According to the National Association of Manufacturers, the job multiplier for the manufacturing sector nationally is 1.58. The local job multiplier for the Northern Waterfront's manufacturing sector is 1.37. That means a typical manufacturing facility that employs 100 people actually supports 137 jobs, 100 direct jobs and another 37 indirect jobs in other sectors, including professional services, utilities, transportation, financial services, wholesale and retail suppliers, and construction. Although the number of direct manufacturing jobs may be declining, the number of indirect jobs necessary to supply, support, and serve the manufacturing sector is expected to increase as factories become more advanced.⁴⁵

The Northern Waterfront has a diversified manufacturing base with firms spread across 18 subsectors.

The six largest subsectors (petroleum refining, food processing, primary metals, computers & electronic products, chemicals, and fabricated metal products) account for almost 70% of the total manufacturing jobs (see Figure 1) and 96% of the region's \$6.044B in manufacturing output. The Northern Waterfront's traditional manufacturing base has been concentrated in large-scale heavy industries (petroleum refining, chemicals, steel, sugar processing, and electric power generation). These legacy industries represent the largest share of employment, but are mature industries with little or no job growth. Over the past several decades many manufacturing subsectors lost employment, especially during the 2007-09 Recession. Since 2010, employment has declined in petroleum refining, computers & electronic products, chemicals, and primary metals, while net new job growth has occurred in transportation equipment, fabricated metal products, machinery, electrical equipment, and food processing. Between 2001 and 2011 approximately 45 manufacturing firms closed their doors or moved out of the area according to Census Bureau data. Most of these firms were small businesses with less than 50 employees. The surviving companies have become more competitive, increasing their output with fewer workers. While the number of manufacturing firms declined during the Great Recession, the manufacturing sector has recovered in recent years with the net addition of new firms. New industries are beginning to emerge in the region, such as biomedical/life sciences and cleantech, but have yet to become major employers.

Figure 1:
Industry Subsectors by NAICS Code



Source: Emsi 2018.1 QCEW Employees

Small- and medium-sized business enterprises (SMEs) comprise almost 97% of the total manufacturing establishments, and account for over 82% of all manufacturing employment. Small manufacturing firms often lack sufficient financing, manufacturing capacity, capital equipment, expertise, and experience—especially compared to large manufacturers—to improve their competitiveness in areas ranging from innovation and product improvement, to business development and modernization.

Regional Specialization

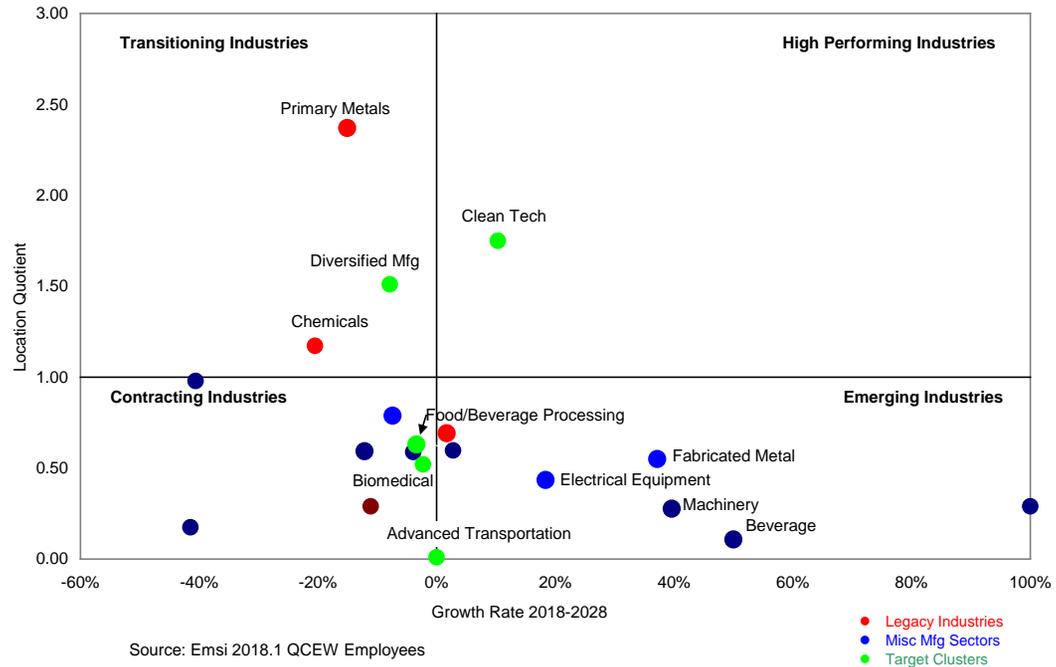
The Northern Waterfront's core strengths include older legacy industries, which represent the past, as well as new emerging industries that represent the region's future. By building on its competitive advantages the Northern Waterfront can develop a strong vibrant economy that creates middle wage job opportunities for local residents.

Regional specialization is traditionally identified by measuring the region's employment concentration in an industry compared to its concentration nationwide. This measure is commonly referred to as a location quotient (LQ) and is measured on a scale where zero indicates no employment for that industry in the region, and an LQ of 1.0 indicates that the region's employment concentration is similar to the national average. When the proportion of regional employment in an industry exceeds the national average it indicates regional specialization and is considered to be an economic strength. LQs of 1.25 or higher are indicators of traded industries that sell to larger markets outside the region bringing new dollars into the local economy. Thirteen manufacturing subsectors in the Northern Waterfront have LQs above 1.0 (see Table 1).

Another factor in determining an industry's importance to the region is its relative size compared to other sectors. Industries with high employment represent industries that are important to a region and may have a competitive advantage over other locations. Nine of the thirteen industries with high LQs also have relatively high employment levels. These nine industries include food processing, diversified manufacturing sectors such as building materials, industrial machinery, and instruments, and legacy industries (petroleum refining, chemicals, steel fabrication). Most of the industries in the Northern Waterfront with high LQs and high employment represent mature legacy industries that while important to the local economy are not expected to generate significant, if any, employment growth.

A third criteria includes emerging new industries with high employment growth, which represent the region's future. Industries with low LQs but high employment growth may be indicators of emerging new growth industries. These industries could form the core industries of several industry clusters that will drive future job growth in the manufacturing sector along the Northern Waterfront. Six industries have low LQs, but high employment growth, including HVAC equipment, electronic components, electrical equipment, motor vehicles, and aerospace parts. Other new emerging industries in the East Bay, such as autonomous vehicles, cleantech, and electric cars, are also potential target industries for the Northern Waterfront. These industries represent potential growth sectors for the Northern Waterfront that if properly supported could be future drivers of the regional economy. Potential target industries for the Northern Waterfront are identified in Figure 2. These emerging sectors could form the core of several industry clusters.

Figure 2: Manufacturing Employment Concentration



Advanced Manufacturing

Review of national studies on advanced manufacturing found that advanced manufacturing is defined by the type of product or process by which products are made. Other definitions include the use of new or improved materials or the use of a specialized skilled workforce required to make the product. While it is possible for a manufacturing firm to be advanced by performing well on any one of the four indicators, the more advanced firms are those that employ all four characteristics. The most advanced manufacturing firms make “extensive use of computer, high-precision, and information technologies integrated with a high-performance workforce in a production system capable of furnishing a heterogeneous mix of products in small or large volumes with both the efficiency of mass production and the flexibility of custom manufacturing in order to respond quickly to customer demands.”⁴⁶ The shift toward advanced manufacturing, while improving industry’s productivity and competitiveness, is not expected to create large numbers of new jobs as the labor-intensive industries of the past, but instead will require a more specialized, higher skilled workforce. Advanced industries are extraordinarily productive and provide high-quality economic opportunities for workers.⁴⁷ The advanced manufacturing sector will need science, technology, engineering and mathematics workers (STEM) workers, as well as production workers, and installation, maintenance, and repair workers.

Table 1: Local Specialization by Manufacturing Industry Group - 2018

NAICS	Description	Northern Waterfront			East Bay
		LQ	Jobs	Job Growth 2018 - 2028	LQ
3113	Sugar & Confectionery Products	6.82	361	(32%)	3.26
3115	Dairy Products	2.28	234	22%	0.71
3116	Meat Processing	0.12	42	64%	0.23
3118	Bakeries & Tortillas	0.19	41	(2%)	1.92
3119	Other Food Manufacturing	0.40	63	21%	0.92
3121	Beverage Manufacturing	0.12	21	33%	1.59
3149	Other Textile Product Mills	0.47	21	5%	0.57
3219	Other Wood Products	0.93	149	24%	0.48
3231	Printing & Related Activities	0.61	185	(2%)	0.73
3241	Petroleum Refining	23.53	1,880	(38%)	4.76
3251	Basic Chemicals	2.85	303	46%	0.51
3254	Pharmaceutical & Medicine	0.56	115	(9%)	1.81
3255	Paint, Coating, & Adhesive	1.94	86	(23%)	0.33
3256	Soap, Cleaning Compound, & Toilet	0.54	41	15%	1.36
3259	Other Chemical Products	1.58	92	(24%)	0.61
3273	Cement and Concrete Products	0.69	94	14%	0.53
3274	Lime and Gypsum Products	11.29	115	(3%)	2.64
3311	Iron & Steel Mills	10.86	617	24%	1.04
3321	Forging & Stamping	0.72	49	22%	0.42
3323	Architectural & Structural Metals	0.72	191	12%	0.85
3324	Boiler, Tank, & Shipping Container	1.77	113	38%	0.37
3327	Machine Shops	0.79	195	27%	1.06
3329	Other Fabricated Metal Products	0.12	22	(5%)	0.21
3332	Industrial Machinery	1.73	138	35%	5.20
3334	HVAC & Commercial Refrigeration Equip	0.68	63	35%	0.37
3342	Communications Equipment	1.10	65	(83%)	1.42
3343	Audio & Video Equipment	3.04	41	(17%)	3.05
3344	Semiconductor/Electronic Components	0.19	48	50%	2.16
3345	Instruments	1.78	500	55%	2.13
3353	Electrical Equipment	0.57	56	46%	0.63
3359	Other Electrical Equipment & Components	0.63	60	(65%)	1.35
3362	Motor Vehicle Body & Trailer	0.81	89	49%	0.12
3363	Motor Vehicle Parts	0.07	31	(13%)	0.04
3364	Aerospace Product and Parts	0.14	49	55%	0.11
3371	Furniture & Cabinets	0.13	22	14%	0.42
3391	Medical Equipment & Supplies	0.71	158	(13%)	1.90
3399	Other Miscellaneous Manufacturing	0.44	87	10%	0.47

Source: Emsi 2018.1 QCEW Employees

TARGET INDUSTRY CLUSTERS

Industry Cluster Definition⁴⁸

An industry cluster is a geographic concentration of related companies and associated institutions that derive an economic advantage from co-locating in proximity to one another. Industry clusters are different than traditional industry sectors. Unlike an industry sector, industry clusters represent a network of interconnected firms and industries that are linked through shared resources and technologies based on a common set of economic activities. Firms in similar and related industries draw a productive advantage in being geographically located near each other because they have common labor pools and supply chain needs. *“Driver industries are linked to supplier and input industries, support industries, and customers.”* A myriad of service providers also participate in the manufacturing value chain, including engineers, market researchers, attorneys, accountants, research organizations (Universities, National Labs, etc.), toolmakers, equipment suppliers, transport and logistics providers, and consultants.

Target Industry Cluster Identification

Standardized national industry clusters have been defined, which allow comparisons and performance measurement across regions.⁴⁹ Regionally defined industry clusters are often not represented in the standardized national definitions. Region-specific industry clusters can be identified based on employment concentrations, industry size, and growth rates. A regional industry cluster exists when the level of employment is overrepresented relative to the national average. This overrepresentation signals the presence of a critical mass at which cluster dynamics begin to kick in. Strong industry clusters are defined as those where the location quotient puts them into the leading 25% of regions across the U.S. in their respective cluster category. While emerging industry clusters are not easily identified through traditional analytical methods, they can be identified through qualitative research and intelligence based on local industry knowledge. Important considerations for determining the presence of emerging industry clusters include the presence of research institutions, innovation infrastructure, access to venture capital, and the growth of new occupations. Shift-share analysis can be employed to identify industries that are expected to grow faster than the national economy and industry mix. Six-digit NAICS codes were used to identify the core industries in the Northern Waterfront based on the number of core companies, employment size, degree of specialization, growth trends, and a strong regional presence in the East Bay. Five potential target industry clusters were identified including: 1) Biomedical/Biotechnology/life sciences; 2) Food & Beverage Processing; 3) Advanced Materials & Diversified Manufacturing; 4) Advanced Transportation Technologies; and 5) Clean Technology. These five industry clusters are described more fully on the following pages. The Northern Waterfront can develop a vibrant economy by attracting and growing manufacturing firms in emerging new industries in the advanced manufacturing sector. Many of these industries already have a strong presence in the East Bay regional economy.



Biomedical/Biotechnology/Life Sciences Cluster

The biomedical/biotechnology/life sciences cluster is comprised of establishments engaged in manufacturing biological and medicinal products, pharmaceutical products, electro-medical equipment, and medical equipment and supplies. It includes companies producing biomedical/biotechnology products exclusively, as well as companies in related industries, which produce a diversified array of products including biomedical/biotechnology. The cluster also includes a wide variety of businesses in related and supporting industries from contract manufacturers, machine shops, injection molders, product development firms, and suppliers to component and equipment manufacturers, all of which are critical elements supporting growth of the region's biomedical/biotechnology cluster/life sciences. Many of the companies in related industries, while not classified as biomedical or medical device manufacturers per se, make components and develop technologies that are directly applicable to the production of medical products and devices. The biomedical/biotechnology/life sciences cluster also includes distributors of medical equipment and supplies, such as forceps, surgical knives and gloves, bandages and dressings, syringes, stethoscopes, medical laboratory equipment, x-ray films, dental drills, veterinarian instruments and other related supplies. The cluster is also comprised of establishments engaged in conducting research and development in the life sciences and biotechnology. The Northern Waterfront is part of the larger East Bay biomedical regional cluster, which has one of the largest concentrations of biotech firms in the state with strong research infrastructure and a well-developed eco-system.⁵⁰ Nationally, the biomedical/life sciences industry is projected to grow by approximately 10% over the next ten years.

Cluster Profile

	Northern Waterfront	Contra Costa County	East Bay
Companies	18*	54	208
Jobs (2018)	256	1,521	10,901
Industry Concentration/Specialization (LQ)	0.52	0.86	1.98
Projected Baseline Job Growth (2018-2028)	(6)	(22)	1,005
% Change (2018-2028)	(2.5%)	(1.4%)	9.2%

Source: Emsi 2018.3 QCEW Employees, * DatabaseUSA.com Business-Level Data

Biomedical/Biotechnology/Life Sciences Core Industries

Biopharmaceuticals (NAICS 325411): Drugs derived from uncompounded medicinal chemicals and their derivatives or the processing of uncompounded botanicals, including proteins and nucleic acids used for therapeutic or in vivo diagnostic purposes, or direct extraction from a native biological source.

Pharmaceutical Manufacturing (NAICS 325412): In-vivo diagnostic substances and pharmaceutical preparations.

Diagnostics (NAICS 325413): In-vitro diagnostic substances used for diagnostic tests.

Biologics (NAICS 325414): such as vaccines, toxoids, therapeutic proteins, blood and blood components, tissues, and cultural media of plant or animal origin.

Electro-medical & Electrotherapeutic Equipment (NAICS 334510): pacemakers, patient-monitoring systems, MRI machines, diagnostic imaging equipment (including informatics equipment), ultrasound scanning devices, hearing aids, & electrocardiographs.

Irradiation Apparatuses (NAICS 334517): Irradiation, x-ray devices and other diagnostic imaging, computer tomography equipment for medical diagnostic, medical therapeutic, research and scientific evaluation.

Surgical & Medical Instruments (NAICS 339112): Medical, surgical, ophthalmic, and veterinary instruments and equipment, such as syringes, hypodermic needles, anesthesia apparatus, blood transfusion equipment, catheters, surgical clamps, medical thermometers, orthopedic instruments, optical diagnostic apparatuses, blood transfusion devices, and catheters.

Surgical Appliances & Supplies (NAICS 339113): Artificial joints and limbs, stents, orthopedic appliances, surgical dressings, disposable surgical drapes, hydrotherapy appliances, surgical kits, rubber medical and surgical gloves, and wheelchairs.

Dental Equipment & Supplies (NAICS 339114): Equipment, instruments, and supplies, dental hand instruments, plaster, drills, amalgams, cements, sterilizers, and dental chairs.

Ophthalmic Goods Manufacturing (NAICS 339115): Prescription eyeglasses, contact lenses, sunglasses, eyeglass frames, reading glasses, and protective eyewear.

Dental Laboratories (NAICS 339116): Dentures, crowns, bridges, and orthodontic appliances customized for individual application.



Food & Beverage Processing Cluster

The Food and Beverage Processing Cluster includes businesses that transform raw ingredients into food and beverage products that can be easily prepared and served by the consumer. The cluster covers conventional, organic, ethnic and specialty foods, as well as beverages (soft drinks, fruit & vegetable juices, bottled water, wine, liquor, and beer). The cluster also includes related and supporting industries such as food and beverage wholesalers and distributors, food processing equipment manufacturers, food packaging, as well as linkages to agricultural producers and consumer sectors like restaurants, grocery stores, and bars. Food and beverage processing and manufacturing is the ninth largest traded cluster in terms of regional employment in the San Francisco Bay Area.⁵¹ The U.S. food processing industry is forecast to grow at a steady rate of 2.9% compound annual growth rate (CAGR) through 2022, according to a report by the Association for Packaging and Processing Technologies.

Cluster Profile

	Northern Waterfront	Contra Costa County	East Bay
Companies	28*	84	400
Jobs (2018)	818	2,167	14,476
Industry Concentration/Specialization (LQ)	0.63	0.45	0.97
Projected Baseline Job Growth (2018-2028)	(28)	248	732
% Change (2018-2028)	(3.4%)	11.4%	5.1%

Source: Emsi 2018.3 QCEW Employees, * DatabaseUSA.com Business-Level Data

Food & Beverage Processing Core Industries

Animal Food (NAICS 3111): Animal food produced from ingredients, such as grains, oilseeds, and meat products.

Grains & Oilseeds (NAICS 3112): Milling flour or meal from grains or vegetables, manufacturing malt, wet milling corn and other vegetables, crushing oilseeds and tree nuts, refining or blending vegetable oils, & manufacturing breakfast cereals.

Sugar & Confectionary Products (NAICS 3113): Processing agricultural inputs, such as sugarcane, beet, and cacao, to give rise to a new product (sugar or chocolate) or beginning with sugar and chocolate and processing these further.

Fruit & Vegetable Preserving & Specialty Food (NAICS 3114): Freezing food or using preservation processes, such as pickling, canning, and dehydrating.

Dairy Products (NAICS 3115): Dairy products from raw milk, processed milk, and dairy substitutes.

Meat Processing (NAICS 3116): The assembly, cutting and packing of meats from purchased carcasses.

Seafood Preparation & Processing (NAICS 3117): Canning, smoking, salting, and drying seafood; eviscerating fresh fish by removing heads, fins, scales, bones, and entrails; shucking and packing fresh shellfish; processing marine fats and oils; and freezing seafood.

Bakeries (NAICS 3118): Fresh and frozen bread and other bakery products; cookies, crackers, and dry pasta; or tortillas.

Miscellaneous Food Manufacturing (NAICS 3119): Snack foods; coffee, tea; concentrates, syrups, condiments, spices; and other miscellaneous food products.

Beverage Manufacturing (NAICS 3121): Nonalcoholic beverages; alcoholic beverages manufactured through the fermentation process; and distilled alcoholic beverages.



Advanced Materials & Diversified Manufacturing Cluster

This cluster covers a broad group of producers in various manufacturing subsectors and industry groups who make intermediate and finished products.

Technological advances and market forces have created new opportunities for advanced manufacturing companies in these industries to become more competitive. While advanced manufacturing is more precisely identified at the company level rather than the industry level, industries that have adopted advanced manufacturing processes, machinery, materials, and/or produce products of an advanced nature are more competitive. NAICS codes for the diversified manufacturing cluster include both advanced manufacturing and traditional manufacturing firms.

Cluster Profile

	Northern Waterfront	Contra Costa County	East Bay
Companies	52*	97	574
Jobs (2018)	1,984	2,813	23,708
Industry Concentration/Specialization (LQ)	1.51	0.58	1.58
Projected Baseline Job Growth (2018-2028)	(156)	(150)	257
% Change (2018-2028)	(7.9%)	(5.3%)	1.1%

Source: Emsi 2018.3 QCEW Employees, * DatabaseUSA.com Business-Level Data

Advanced Materials & Diversified Manufacturing Core Industries

Plastics Material & Resin (NAICS 325211): Resins and plastics materials, mixing and blending resins on a custom basis and/or manufacturing non-customized synthetic resins.

Paint & Coatings (NAICS 325510): Mixing pigments, solvents, and binders into paints and other coatings, such as stains, varnishes, lacquers, enamels, shellacs, and water-repellent coatings for concrete and masonry, and/or manufacturing allied paint products.

Adhesives (NAICS 325520): Adhesives, glues, and caulking compounds.

Carbon & Graphite Products (335991): Carbon, graphite, and metal-graphite brushes and brush stock; carbon or graphite electrodes for thermal and electrolytic uses; carbon and graphite fibers; and other carbon, graphite, and metal-graphite products.

Building Materials (NAICS 327): Non-metallic products such as gypsum board, crushed rock or gravel, glass, and other products.

Metal Products (NAICS 3312; 3315): Sheet metal products including steel shape manufacturers, aluminum and copper foundries.

Machine Shops & Metal Fabrication (NAICS 332): Transform purchased metals into intermediate or end-use products by forging, stamping, bending, forming, welding, machining, and assembly, used to join separate parts together.

Machinery (NAICS 333): General and special purpose machinery designed for a particular industry such as agriculture, construction, mining, industrial, and commercial machinery or general purpose machinery used by many different industries.

Computer & Electronic Products (NAICS 3343; 334511, 334512, 334513, 334514, 334515, & 334519): Electronic instruments, communication equipment, computers, and similar electronic products and components.



Advanced Transportation Technologies

Advanced transportation technologies are an emerging cluster in the Bay Area that has not been defined by the North American Industry Classification System (NAICS) as a specific industry. This cluster includes fuel efficient vehicles, advanced battery storage, fuel cells, electric vehicle charging stations, plug-in electric vehicles, vehicle assembly and component parts manufacturing. Advanced transportation technologies also include traffic management, fueling/charging station infrastructure, and autonomous vehicles. This cluster represents an opportunity to capitalize on emerging new vehicle technologies that could result in substantial economic development benefits.^{52,53}

Cluster Profile

	Northern Waterfront	Contra Costa County	East Bay
Companies	1*	3	28
Jobs (2018)	<10	12	11,788
Industry Concentration/Specialization (LQ)	0.01	0.01	2.10
Projected Baseline Job Growth (2018-2028)	Insf. Data	(2)	3,381
% Change (2018-2028)	Insf. Data	(16.7%)	28.7%

Source: Emsi 2018.3 QCEW Employees, * DatabaseUSA.com Business-Level Data

Advanced Transportation Technologies Core Industries

Electric Motors for Electric Vehicles (NAICS 335312): Establishments primarily engaged in manufacturing electric motors, power generators, and motor generator sets.

Electric Vehicle Assembly (NAICS 336111): Vehicle assembly and component part manufacturing for plug-in electric, hybrid, and natural gas vehicles, fuel efficient vehicles, alternative fuel vehicles, high-speed rail.

Electrical/Electronic Equipment for Motor Vehicles (NAICS 336320): Motor vehicle electrical and electronic equipment manufacturing, electronics, communications, and computer systems required for navigation, guidance, and control of the vehicle, including autonomous vehicles, smart car technology, self-driving vehicles.

Power Train Parts (NAICS 336350): manufacturing of power train parts.

Advanced Battery Storage (NAICS 335911): Electrochemical energy storage technologies, fuel cells, hybrid or electric vehicles.

Unmanned Aerial Vehicles & Systems (NAICS 336411): Target drones, ultra light aircraft, equipment and networks to control an unmanned aircraft.



Clean Technology Cluster

Clean technology (cleantech) is an emerging cluster that represents a diverse range of products, services, and processes, that reduces inputs, energy consumption, waste, or environmental pollution all intended to 1) provide superior performance at lower costs, while 2) reducing or eliminating negative environmental impacts

and 3) making more efficient and responsible use of natural resources. While there is no standard definition of "clean technology", it has been described by Clean Edge as *"a diverse range of products, services, and processes that harness renewable materials and energy sources, dramatically reduces the use of natural resources, and cuts or eliminates emissions and waste."* Cleantech has emerged as a defined industry due to the increased consumer, regulatory, and market interest in clean forms of energy generation—specifically, the rise in awareness of global warming, climate change, and the impact on the natural environment from the burning of fossil fuels. Nationally, the cleantech industries are expected to grow by 12% over the next ten years.

Cluster Profile

	Northern Waterfront	Contra Costa County	East Bay
Companies (2017)	27*	470	1,209
Jobs (2018)	2,303	7,132	21,951
Industry Concentration/Specialization (LQ)	2.36	1.48	1.46
Projected Baseline Job Growth (2018-2028)	236	693	1,331
% Change (2018-2028)	10.3%	9.7%	6.1%

Source: Emsi 2018.3 QCEW Employees, * DatabaseUSA.com Business-Level Data

Clean Technology Core Industries

Renewable Energy Products & Components (NAICS 333414, 334413): Products and components used in solar, wind, tidal waves, geothermal, waste-to-energy, fuel cells, and biomass products and equipment such as wind turbines and blades, solar cells, mounting brackets, solar heating equipment, and solar panels.

Energy Efficiency Products & Components (NAICS 335110, 335311): Efficient lighting, smart grid, green building, and cogeneration.

Environmental Services & Technologies (NAICS 541330, 541380, 541620): Environmental engineering, environmental testing labs, emissions controls, bioremediation, environmental monitoring & compliance.

Remediation Services (NAICS 562910): Remediation and cleanup of contaminated buildings, mine sites, soil, or ground water; integrated mine reclamation activities, including demolition, soil remediation, waste water treatment, hazardous material removal, contouring land, and re-vegetation; and asbestos, lead paint, and other toxic material abatement.

Water and Wastewater Technologies (NAICS 332911; 333318): water purification, conservation, efficiency, filtration, disinfection, monitoring and controls, metals and organics recovery, desalination systems.

Recycled Materials & Products (NAICS 423930, 562111, 562920, 562998): Materials recovery, recyclable material handling and products made from recycled materials.

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