CITY OF
HAYWARD
HEART OF THE BAY

INDUSTRIAL TECHNOLOGY AND INNOVATION CORRIDOR BASELINE PROFILE

2015 INTERIM REPORT

PREPARED BY:

Micah Hinkle, Economic Development Manager
Paul Nguyen, Economic Development Specialist (Project Lead)
Suzanne Phillis, Senior Secretary
Michael Loconte, GIS Coordinator

CONTACT:
Paul Nguyen
Economic Development Specialist
Phone: 510-583-5542
Paul.Nguyen@hayward-ca.gov

MARCH 10, 2015

PAGE INTENTIONALLY BLANK

TABLE OF CONTENTS

EXECUTIVE SUMMARY 1
ES-1 Study Purpose and Objectives 1
ES-2 Key Findings 2
ES-3 Conclusions and Recommendations 3
1. INTRODUCTION 1
2. METHODOLOGY 3
2.1 Technical Approach Overview 3
2.2 Study Scope, Data Sources and Limitations 3
2.2.1 Study Scope & Definitions 3
2.2.2 Data Sources 4
2.2.3 Data Limitations 5
2.2.4 Data Confidentiality & Suppression 5
2.2.5 Future Updates 6
2.3 Defining Industry Sectors 6
2.3.1 North American Industry Classification System 6
2.3.2 Industry Sector Definitions 7
2.3.3 Profiled Industry Sectors 8
3. INDUSTRIAL TECHNOLOGY AND INNOVATION CORRIDOR PROFILE 9
3.1 Corridor Economic Profile 11
3.1.1 Major Industrial Employers 11
3.1.2 Industrial Employment Concentrations 12
3.1.3 Major Industrial Sales Tax Revenue Generators 14
3.2 Profiles of Selected Industry Sectors 15
3.2.1 Advanced Materials 16
3.2.2 Biotechnical, Biomedical and Life Sciences 19
3.2.3 Business and Financial Services 22
3.2.4 Food and Beverage Manufacturing 25
3.2.5 Information Technology and Communications 28
3.2.6 Transportation and Logistics 31
3.3 Advanced Industries 34

3.3.1 Defining Advanced Industries 34
3.3.2 Economic Impact of Advanced Industries 35
3.3.3 Hayward's Advanced Industries Sector 37
4. CONCLUSION & RECOMMENDATIONS 40
4.1 Key Findings 40
4.2 Recommendations 41
4.2.1 Explore Land Use and Zoning Policies to Attract Advanced Industries 41
4.2.2 Develop the Infrastructure and Amenities that Attract Advanced Industries 41
4.2.3 Foster Industry Partnerships to Grow Major Industry Sectors 42

EXECUTIVE SUMMARY

ES-1 Study Purpose and Objectives

The City's Economic Development Strategic Plan and General Plan 2040 identify the development of a strategic approach to retain and grow businesses in the Innovation and Technology Industrial Corridor as a priority. To develop the necessary information and data to drive strategic planning, staff conducted research to develop a baseline profile of businesses in Hayward's industrial corridor. Specifically, this effort set out to achieve the following objectives:

1. Establish a clear picture of the businesses located in Hayward's industrial zoned area;
2. Create a database to identify major employers and track establishment and employment trends; and
3. Apply the database using a graphic information system (GIS) to assess the existence of industry clusters, which for the purposes of this study is defined as similar businesses located near one another.

This research represents the completion of multiple work tasks outlined in the EDSP. The EDSP directs staff to establish baseline measures and monitor the Top 25 industrial employers (EDSP Performance Measure IS1.1) and overall employment levels of industrial businesses (EDSP Performance Measure IS1.5).

This study is a first-of-its-kind profile of businesses in the industrial corridor. The data and information produced will guide all economic development program activities from branding and marketing to business attraction, retention, and expansion. By understanding the types of businesses that are in Hayward, the number of workers they employ, how businesses are performing, and how their operation contributes to the City's economic vitality, the City can direct economic development resources to targeted sectors and programs. This data-driven decision-making will help maximize the impact of the City's economic development activities.

> "This study is a first-of-its-kind profile of businesses in the industrial corridor. The data and information produced will drive economic development program activities from branding and marketing to business attraction, retention and expansion."

The industrial baseline information is also pertinent to other long-term strategic approaches specifically the City's General Plan Implementation Program on development of an Industrial Technology and Innovation Corridor Plan. By identifying the types and profiles of our existing businesses and conducting outreach to understand specific business needs, we can craft policies and regulations to attract targeted

industries and further develop industrial lands in a comprehensive manner that addresses both economic vitality and land use concerns.

ES-2 Key Findings

While the focus of the study was to develop a baseline profile of businesses in the industrial corridor, the following key findings materialized:

1. **Hayward's industrial corridor is home to a wide-rage range of industrial businesses.** The corridor, which spans approximately nine square miles of land, consists of the following major industry sectors:

    - Advanced Materials
    - Biotechnical, Biomedical and Life Sciences
    - Business and Financial Services
    - Food and Beverage Manufacturing
    - Information Technology and Communications
    - Transportation and Logistics

2. **Industries are intermixed and spread throughout the corridor.** A spatial analysis of businesses by sector found that there is no specific pattern of similar businesses locating near one another in the industrial area. This is the result of Hayward's current and previous land use regulations, which allows a diverse mix of industrial uses to locate throughout the industrial corridor.

3. **The Advanced Industries sector connects Hayward's businesses and offers major opportunities for economic development.** The most significant finding of the study is that a super cluster, known as the "Advanced Industries" sector, runs throughout the City's industrial corridor. Advanced Industries include over 50 different industries that involve heavy investment in technology innovation. These businesses employ skilled technical workers that develop and apply new technologies to enhance productivity. Nationwide advanced industries:

    > "The most significant finding of the study is that a super cluster, known as the "Advanced Industries" sector, runs throughout the City's industrial corridor."

    - ✓ Demonstrate greater investment in research and development per employee;
    - ✓ Employ a higher percentage of STEM (science, technology, engineering, and mathematics) workers than all other sectors; and
    - ✓ Conduct more business-to-business (B2B) purchasing than other industries.

    These industries have a multiplier effect on the economy. For every new advanced industry job, 2.2 jobs are created; 0.8 jobs are created locally and 1.4 outside the region.

4. **The Advanced Industries sector offers significant economic opportunities for workers of all education levels.** While, in general, advanced industry workers have higher education levels than those in other industries, this sector offers significant economic opportunity for workers with lower educational levels. In fact, advanced industries jobs offer wage premiums at all levels of education. According to the Brookings Institute, the national average for an advanced industry worker with an associate's degree is $60,000 per year. In comparison, their peers in non-advanced industries earn $38,000 per year.

ES-3 Conclusions and Recommendations

> *"Future changes to the Industrial Technology and Innovation Corridor are expected to include building and landscaping improvements, infill development, and the redevelopment of underutilized properties. The Corridor is expected to grow as an economic and employment center and evolve to achieve a healthy balance of traditional manufacturing and information and technology-based uses."*
>
> ***– City of Hayward General Plan 2040***[1]

This study produced the information needed to develop strategic policies and programs that fulfill the General Plan's vision for the industrial corridor and shape the activities established in the Economic Development Strategic Plan. The following details recommendations to apply the study's findings.

1. Explore Land Use and Zoning Policies to Attract Advanced Industries

Creating an environment that attracts advanced industry firms requires the development of types and sizes of facilities these operations seek. It is recommend the City support land use policies that encourage redevelopment and development of new "Class A" industrial spaces. These spaces include industrial facilities for light manufacturing and small to mid-sized "flex" space buildings used by laboratories and small urban collaboration/research operations.

Supporting increases in the supply of new facilities will help mitigate two barriers to entry into Hayward's industrial corridor: 1) the lack of modern buildings and spaces and 2) the time and materials costs associated with upgrading existing buildings to meet operation demands.

2. Develop the Infrastructure and Amenities that Attract Advanced Industries

Advanced industries use cutting-edge equipment, technology and processes to produce value-added goods and services. It is recommended that the City invest in the infrastructure and amenities these firms seek during site selection.

Infrastructure, defined as the physical and organizational structures and facilities these firms need to operate includes, but is not limited to:

[1] City of Hayward, General Plan 2040, July 2014, pg. 3-22

- Broadband internet services (fiber);
- A Fire Department capable of addressing fire and hazardous materials incidents;
- Multimodal transportation options that connect workers to the industrial corridor; and
- Wet and dry utilities including water, sewer, power, and gas.

Amenities are defined as the non-operational-related features that are conducive to adding to the attractiveness and value of the industrial corridor. These include place-making elements and the retail, service and accessibility options that support the needs of advanced industries' workforce. Specifically, amenities may include:

- Business serving retail and services
- Lodging and regional conference facilities
- Restaurants
- Childcare services
- Open space and trails
- Gateway markers, landscaping and place-making elements

3. Foster Industry Partnerships to Grow Major Industry Sectors

Collaboration among local businesses produces a sense of community and place, which supports business retention, expansion and attraction. It is recommended that the City apply this study's industrial business database and dedicate resources to encourage interaction between businesses. Key activities would include:

- Conducting outreach to targeted industry sectors to engage and develop relationships with new and existing businesses;
- Working closely with these business representatives to identify needs and goals; and
- Facilitating events or workshops to bring business leaders together to explore collaborative opportunities, transfer knowledge and craft solutions to common issues.

1. INTRODUCTION

The Economic Development Department undertook an initiative to develop a baseline profile of businesses in Hayward's Industrial Technology and Innovation Corridor (Industrial Corridor). Specifically, this research effort set out to achieve the following objectives:

1. Establish the first comprehensive profile of the businesses located in Hayward's industrial zoned area;
2. Create a database to identify major employers and track establishment and employment trends, and
3. Apply the database using a graphic information system (GIS) to assess the existence of industry clusters, which are defined as groups of similar businesses located near one another.

This study represents the completion of multiple work tasks outlined in the Economic Development Strategic Plan FY 2014-2018 (EDSP). The EDSP directs staff to establish baseline measures and retain the Top 25 industrial employers (EDSP Performance Measure IS1.1) and overall employment levels of industrial businesses (EDSP Performance Measure IS1.5).

The industrial baseline information is also pertinent to long-term strategic approaches outlined in the General Plan. For example, the General Plan's Land Use and Community Character Implementation Programs include development of an Industrial Technology and Innovation Corridor Plan and Marketing Strategy.[2]

> "Data-driven decision making will help maximize the impact of the City's business attraction, retention and expansion efforts."

The data and information gathered in this study will drive economic development program activities from branding and marketing to business attraction, retention, and expansion. Understanding the types of businesses that are in Hayward, the number of workers they employ, how these businesses are performing, and how their operation contributes to the City's economic vitality and character will help direct limited resources to targeted sectors.

This baseline data will also enable the City to be proactive and nimble in responding to economic shocks and business community needs. For example, this data can identify specific businesses and sectors that are growing, which may trigger more focused outreach to assist in potential site expansion projects or facilitate connections to local workforce developers and educators. Conversely, this data will help identify downsizing or struggling businesses or sectors, which may trigger retention efforts to determine if and how the City may assist in stabilizing the operation.

[2] General Plan 2040, "Part 4 – Administration and Implementation"

The remainder of this report documents the systematic approach taken to develop this baseline profile and the resulting analysis. It is organized as follows:

- **Chapter 2** provides an overview of the methodology and data sources used in the analysis.
- **Chapter 3** identifies the top tax generators and employers and presents profiles of major industry sectors.
- **Chapter 4** presents key findings and recommendations.

2. METHODOLOGY

2.1 Technical Approach Overview

To complete this baseline study, staff developed and executed a comprehensive work plan. Key tasks included:

1. Establishing study goals and objectives;
2. Identifying required information and potential data sources;
3. Using the North American Industry Classification System (NAICS) to develop definitions of industry sectors;
4. Selecting and procuring data;
5. Sorting and aggregating data to conduct a sector analysis;
6. Conducting data quality assessment and quality control for major employers;
7. Creating GIS maps to identify location patterns of employment and similar businesses; and
8. Producing this final report to present key findings and recommendations.

The research effort began on January 9, 2015 and was completed on March 5, 2015. Economic Development staff completed research, data compilation, quality control and analysis. Revenue staff supported data quality control by cross-checking business license information. Information Technology staff led geospatial mapping tasks.

2.2 Study Scope, Data Sources and Limitations

2.2.1 Study Scope & Definitions

This study focuses solely on profiling major industry sectors and evaluating location patterns of similar business in the industrial corridor. The study does not examine the existence of what economic developers consider industry clusters.

An industry *cluster* is different from the general definition of an industry *sector*. An industry sector is defined as a group of companies that conduct similar activities and/or produce similar goods. For example, the foods products industry sector includes all businesses that produce consumable foods for human or animal consumption. While the foods product sector may include producers of milk and ice cream, the two firms may not necessarily interact.

On the other hand, an industry cluster is defined as geographical concentrations of similar, related or complimentary businesses that draw productive advantage from their mutual proximity and connections.[3] Industry clusters feature avenues for business-to-business (B2B) transactions, communication and dialogue that share infrastructure, labor markets, capital inputs and services.

[3] Porter, Michael E. "Clusters and the New Economics of Competition." Vol. 76. No. 6. Boston: Harvard Business Review, 1998.

Specifically, an industry cluster consists of a business community that shares the entire supply chain from capital inputs to end products, including the supporting services.

Geographic concentrations of similar businesses may represent the formation of an industry cluster as businesses tend to locate near their suppliers and customers to reduce costs and increase competitive advantages. However, data is not publicly available to determine if and how much one Hayward firm buys machinery, professional services or other production inputs from another Hayward firm. Note that clusters typically exist at a regional rather than a city level because raw materials and other production inputs are not typically produced in such close proximity.

2.2.2 Data Sources

ReferenceUSAGov

The primary data source for this study is the ReferenceUSAGov™ database, which is developed and maintained by Infogroup Incorporated (Infogroup). The database contains detailed information on over 14 million U.S. businesses including the name, type of business, address, point of contact, the business' North American Industry Classification System (NAICS) code and employment statistics (See Section 2.3 for more on NAICS).

Infogroup employs 600 workers that call businesses to verify information throughout the year. Data is also compiled from public sources including:

- Yellow Pages and Business White Pages telephone directories
- Company annual reports
- Security and Exchange Commission filings
- Business and trade publications
- Newsletters and newspapers
- US Postal Service

The Economic Development Department obtained the ReferenceUSA data on January 21, 2015 following InfoGroup's 2014 year-end data verification and update cycle. The business database consisted of nearly 15,000 business records for the City of Hayward. The data excluded home-based businesses as they were outside this study's scope.

MuniServices' Sales Tax Analysis and Reporting Service

To identify the top sales tax generators, this study relies on the Sales Tax Analysis and Reporting Service (STARS) report provided by MuniServices. MuniServices provides comprehensive revenue data and analyses to help municipalities preserve, enhance and manage their revenue base. Data used were from the STARS report for the third quarter of 2014.

2.2.3 Data Limitations

While the ReferenceUSAGov database is considered an industry standard for information on businesses, it should be noted that the data set does have limitations. Employment data and the NAICS code assigned to the business may not be completely accurate or up-to-date.

Employment statistics for individual business locations are one of the most difficult pieces of data to obtain. This information is typically considered proprietary as companies do not publicize workforce changes in order to shield themselves from potential competition or public scrutiny. As a result, employment data is considered a general estimate.

It should also be noted that the industry code Infogroup assigns to businesses may not reflect the businesses primary activity. For example, a company that manufactures and sells plastic epoxy may also manufacture plastic medical instruments. This company could fall in both the advance materials and the biotechnical/biomedical industry sectors. As a result, a business may appear in lists of multiple industry sectors.

Despite these limitations, the data presented herein is considered the most recent and accurate information available. It combines industry standard and independently verified data. To ensure data quality to the extent possible, staff undertook an intensive quality assessment and quality control initiative. With support from the Revenue Department, staff crosschecked ReferenceUSAGov information with data reported on recent City of Hayward Business License applications (where available). Staff also attempted to verify information for the top 25 employers of each industry sector and top 50 employers in the industrial corridor through phone interviews with business representatives. Not all records were independently verified due to the unwillingness of businesses to provide information and constraints on time and resources.

2.2.4 Data Confidentiality & Suppression

This study suppresses data on individual businesses. Data suppression refers to methods or restrictions applied to the data sets to limit the disclosure of sensitive or confidential information. This approach is consistent with labor market and industry reports published by the U.S. Census Bureau, California Employment Development Department (EDD), Bureau of Labor Statistics and other public agencies.

Data are suppressed in public reports for two key reasons:

1. **Protecting the privacy of individual businesses -** Information on a company's workforce or revenue can easily be used by the private agents for marketing and investment activities. Data suppression or reassurances of anonymity was often a condition set by most firms who agreed to verify employment statistics.
2. **Improve data quality** – Aggregating data to the industry sector level reduces the number of estimates with unacceptable levels of statistical reliability.

2.2.5 Future Updates

This study is considered a "living document." It is the intent of Economic Development staff to update the data on an ongoing basis. Staff will continue to integrate new information as it becomes available from third-party vendors, direct outreach to individual businesses, as part of expansion and retention efforts, and from data reported on city business license renewals. Outreach with businesses will also be an avenue to collect information on B2B transactions.

> "This study is a living document. Data will be improved and updated on an ongoing basis."

2.3 Defining Industry Sectors

In order to determine if similar businesses are locating in close proximity in the industrial corridor, this study developed definitions of the types of businesses that comprise an industry sector. This section describes the methodology used and the sectors profiled.

2.3.1 North American Industry Classification System

The ReferenceUSAGov database assigns each business a North American Industry Classification System (NAICS) code. NAICS is the standard used by Federal agencies in classifying business establishments for the purpose of collecting, analyzing and publishing statistical data related to the U.S. economy.

NAICS uses a 2- through 6-digit hierarchical classification system, offering five levels of detail. Each digit in the code is part of a series of progressively narrower categories. The more digits in the code, the more detailed the industry description. An example of the NAICS code hierarchy is provided in Exhibit 2-1 below. In this case, NAICS 31 describes all manufacturing while NAICS 31111 describes dog and cat food manufacturing.

Exhibit 2-1: Example North American Industry Classification System (NAICS) Hierarchy

NAICS Code	Description
31	Manufacturing
311	Food Manufacturing
3111	Animal Food Manufacturing
31111	Dog and Cat Food Manufacturing
311119	Other Animal Food Manufacturing

2.3.2 Industry Sector Definitions

This study applies industry cluster definitions established by the U.S. Economic Development Administration (EDA) to aggregate individual businesses into groups.[4] While businesses are categorized by industry using the NAICS hierarchy, an industry sector can cut across multiple NAICS codes. By using the EDA's taxonomy, this study creates groupings of businesses that have different NAICS codes but are involved in the same sector. Exhibit 2-2 provides a portion of the over 40 NAICS codes EDA used to define the biomedical, biotechnical and life sciences sector. This sector includes businesses from pharmaceutical manufacturing to health care services.

Exhibit 2-2: Sampling of Biomedical, Biotechnical and Life Sciences Sector NAICS Codes

NAICS Code	BIOMEDICAL/BIOTECHNICAL (LIFE SCIENCES)
3254	Pharmaceutical and medicine manufacturing
333314	Optical instrument and lens manufacturing
334510	Electromedical and electrotherapeutic apparatus manufacturing
334516	Analytical laboratory instrument manufacturing
334517	Irradiation apparatus manufacturing
3391	Medical equipment and supplies manufacturing
42345	Medical, dental, and hospital equipment and supplies merchant wholesalers
446	Health and personal care stores
5417	Scientific research and development services
562112	Hazardous waste collection
562211	Hazardous waste treatment and disposal
621	Ambulatory health care services **(except 6211, 6212, 6213)**

Source: U.S. Economic Development Administration

Note that a business can specialize in several activities, which may place it into multiple industry sector groupings. For example, a firm may be involved in research and development of pharmaceuticals, basic chemicals manufacturing and pharmaceutical drug manufacturing. As a result, that business could be included in both the biotechnology and advanced materials industry sectors.

[4] U.S. Department of Commerce, Economic Development Administration, "Innovation in American Regions" http://www.statsamerica.org/innovation/industry_clusters.html Last Accessed 2/18/2015

2.3.3 Profiled Industry Sectors

For baseline profile development, the study focused on the following major industry sectors:

1. Advanced Materials
2. Biomedical, Biotechnical and Life Sciences
3. Business and Financial Services
4. Food and Beverage Manufacturing
5. Information Technology and Telecommunications
6. Transportation and Logistics

This study also creates a profile for an **Advanced Industries** sector. This sector is comprised of over 50 different industries that involve heavy investment in technology innovation and employ skilled technical workers who develop and apply new technologies to enhance productivity. This sector is gaining national focus due to recent studies about its importance and impact on the American economy and workforce. Additional information on advanced industries, as well as descriptions for all of the profiled sectors, is provided in Chapter 3.

3. INDUSTRIAL TECHNOLOGY AND INNOVATION CORRIDOR PROFILE

This chapter presents a baseline profile of businesses in the Industrial Technology and Innovation Corridor (Industrial Corridor). According to the General Plan, the Corridor is the large crescent-shaped area of industrial zoned land located along the City's western and southwestern boundaries (See Exhibit 3-1).[5] Also included are the pockets of mixed industrial zoned land within the central part of the city. These areas are older industrial properties typically located near railroad tracks and surrounded by neighborhoods. Overall, the study area consists of roughly nine square miles of land that contain 1,854 parcels.

The General Plan outlines the following allowed uses in the industrial corridor:

- Professional office uses
- Corporate Campus
- Research and Development
- Warehousing and Logistics
- Manufacturing (Traditional, Advanced, Specialized and High-Technology)
- Bio-technology and high-technology uses

Supporting uses in the corridor include:

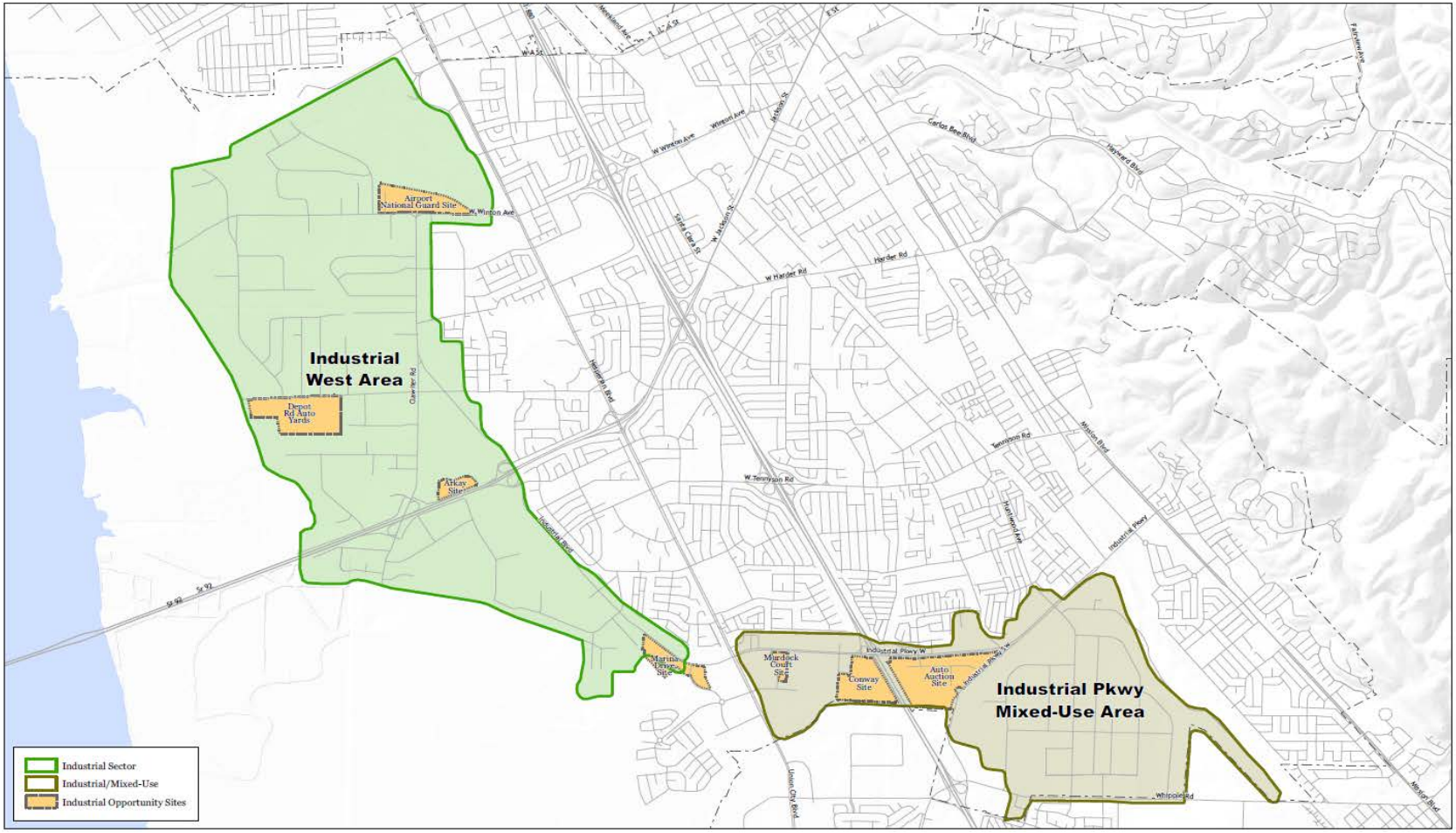
- Retail, detailing and service uses
- Automotive service and repair stations
- Lodging

This remainder of this chapter is organized as follows:

- **Section 3.1** examines employment concentrations and sales tax revenue generators in the industrial area.
- **Section 3.2** presents an economic profile of selected industry sectors.
- **Section 3.3** introduces the Advanced Industries sector concept and evaluates its existence in Hayward.

[5] City of Hayward, "General Plan 2040" (July 2014), pg. 3-22

Exhibit 3-1: Industrial Technology and Innovation Corridor Study Area



Source: Economic Development Strategic Plan (FY 2014 – FY 2018)

3.1 Corridor Economic Profile

3.1.1 Major Industrial Employers

Hayward's industrial corridor consists of a diverse base of businesses. The table below identifies the Top 50 major employers. These firms represent a range of industries sectors including foods and beverage manufacturing, advanced materials and pharmaceutical manufacturing, and machinery manufacturing.

Exhibit 3-2: Industrial Corridor Major Employers

Company Name	NAICS	Description
AC Transit	488210	Interurban & Rural Bus Transportation
Amedica Biotech Inc	339112	Surgical & Medical Instrument Manufacturing
Axis Construction	236115	New Single-Family Hsng Constr (Exc For-Sale Bldrs)
Baxter Bio Pharma	339112	Surgical & Medical Instrument Manufacturing
Bay Point Technology Corp	423610	Electrical Apparatus/Wiring Supls/Rel Equip Whlsrs
Berkeley Farms LLC	311520	Ice Cream & Frozen Dessert Manufacturing
Best Express Foods	311812	Commercial Bakeries
Cal-Steam	423720	Plumbing & Htg Equip/Supls (Hydronics) Mrchnt Whls
Coast Aluminum & Architectural	331523	Nonferrous Metal Die-Casting Foundries
Columbus Foods	445110	Supermarkets/Other Grocery (Exc Convenience) Strs
Con-Way Freight	484230	Specialized Freight (Exc Used Gds) Trckng Lng-Dist
Core-Mark International Inc	424410	General Line Grocery Merchant Wholesalers
Davis Instruments	333111	Farm Machinery & Equipment Manufacturing
Delphon Industries LLC	334413	Semiconductors & Related Devices Manufacturing
Du Pont EKC Technology Inc	325998	All Other Misc Chemical Product & Preparation Mfg
Durham School Svc	485210	Interurban & Rural Bus Transportation
Fedex Freight	484110	General Freight Trucking, Local
Fremont Bank Operations Ctr	522110	Commercial Banking
Freund Baking Co	311999	All Other Miscellaneous Food Manufacturing
Gallo Sales Co	312130	Wineries
GILLIG LLC	336111	Automobile Manufacturing
Glazier Steel Inc	332312	Fabricated Structural Metal Manufacturing
Heat & Control Inc	333241	Food Product Machinery Manufacturing
Illumina	541711	Research & Development In Biotechnology
Impax Laboratories Inc	325412	Pharmaceutical Preparation Manufacturing
Induspec	322220	Paper Bag & Coated & Treated Paper Manufacturing

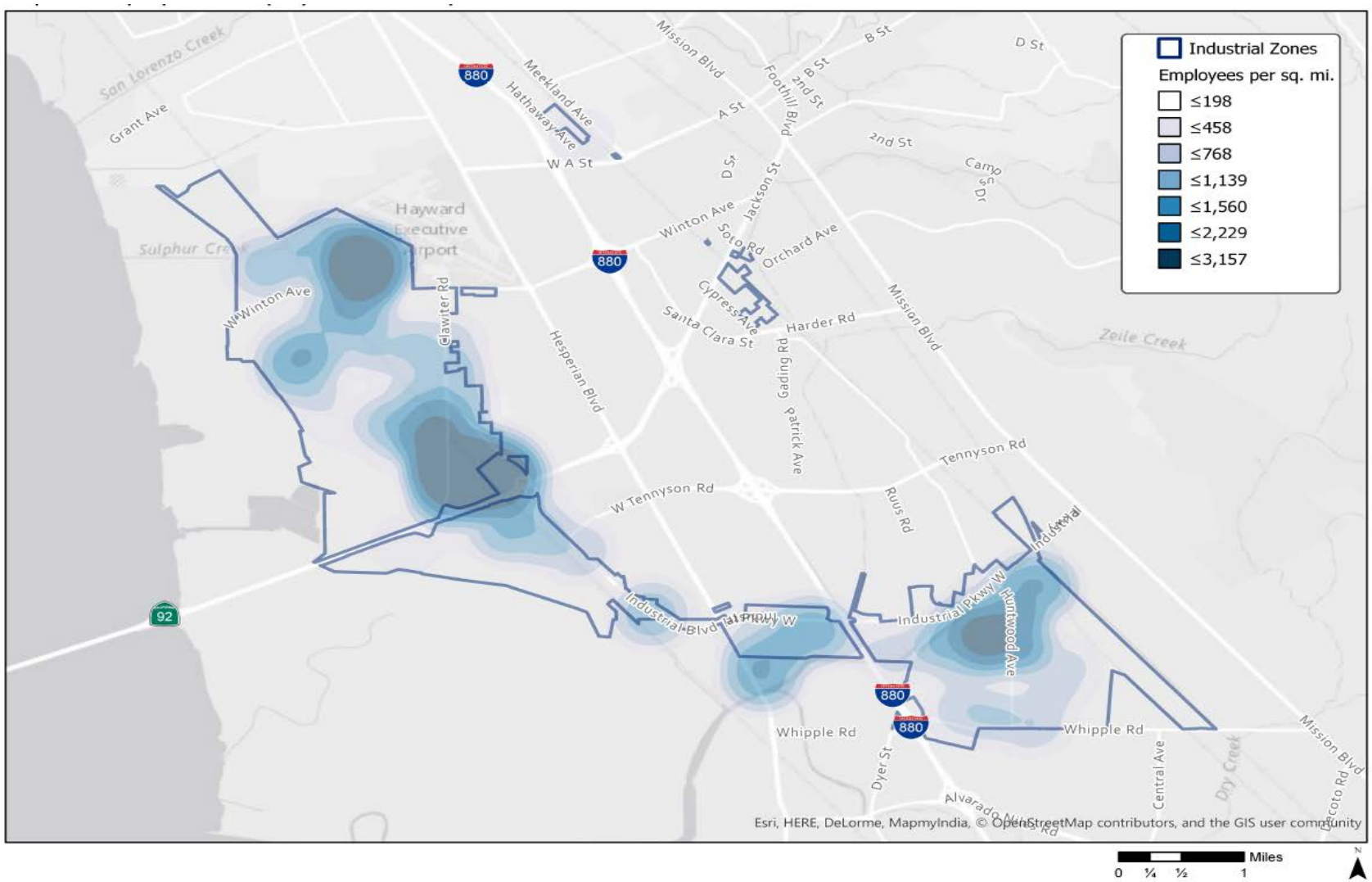
Company Name	NAICS	Description
Inland Marine/Inland Metals	238220	Plumbing Htg & Air-Conditioning Contractors
Interactive Data	443142	Electronic Stores
Keeco LLC	313310	Textile & Fabric Finishing Mills
Life Chiropractic College West	621310	Offices Of Chiropractors
Macy's Logistics & Operations	454111	Electronic Shopping
Manheim San Francisco Bay	425120	Automobile auctions, wholesale
Marelich Mechanical	238210	Electrical Contr & Other Wiring Installation Contr
MDC Vacuum Products LLC	332919	Other Metal Valve & Pipe Fitting Manufacturing
Montague Co	333318	Other Commercial & Service Industry Machinery Mfg
Morgan Technical Ceramics	327420	Gypsum Product Manufacturing
Pacific Cheese Co	311999	All Other Miscellaneous Food Manufacturing
Pacific Gas & Electric Co	211111	Crude Petroleum & Natural Gas Extraction
Pentagon Technologies	333318	Other Commercial & Service Industry Machinery Mfg
Pepsi Bottling Group	312111	Soft Drink Manufacturing
Plastikon Industries Inc	326199	All Other Plastics Product Manufacturing
Shasta Beverages Inc	312111	Soft Drink Manufacturing
Siemens Building Tech	541618	Other Management Consulting Services
SNP Pharmacy	446110	Pharmacies & Drug Stores
Solta Medical Inc	339112	Surgical & Medical Instrument Manufacturing
Streivor	333413	Industrial & Coml Fan/Blower/Air Prfctn Equip Mfg
Sugar Bowl Bakery	424490	Other Grocery & Related Products Merchant Whlsrs
Sukhi's Gourmet Indian Food	445299	All Other Specialty Food Stores
Ultra Clean Holdings Inc	334413	Semiconductors & Related Devices Manufacturing
Windsor Foods	311412	Frozen Specialty Food Manufacturing

Source: ReferenceUSAGov, January 2015

3.1.2 Industrial Employment Concentrations

The Economic Development Strategic Plan (EDSP) directs staff to establish baseline measures, retain the Top 25 industrial employers (EDSP Performance Measure IS1.1), and monitor the overall employment levels of industrial businesses (EDSP Performance Measure IS1.5). The exhibit below depicts the 2015 baseline condition of employment at the 50 largest industrial employers.

Exhibit 3-3: 2015 Baseline Employment Concentrations of Top 50 Industrial Businesses



3.1.3 Major Industrial Sales Tax Revenue Generators

The exhibit below identifies the top 25 industrial sales tax revenue generators during 12 consecutive calendar months ending in the third quarter of 2014.[6] This list was developed using data provided by MuniServices, the City's revenue enhancement consultant.

Exhibit 3-4: Top 25 Industrial Sales Tax Generators (Benchmark Year Ending 3rd Quarter 2014)

BUSINESS NAME	ECONOMIC SEGMENT
Alameda Electrical Distrs	Bldg.Matls-Whsle
All Tex	Light Industry
Bechtel Power Corporation	Leasing
Big Joe California	Heavy Industry
Cal Wholesale Material Supply	Bldg.Matls-Whsle
California Hydronics	Heavy Industry
Cal-Steam	Bldg.Matls-Whsle
Communications Supply	Electronic Equipment
Diamond W Floor Covering	Bldg.Matls-Retail
Ferguson Enterprises	Bldg.Matls-Whsle
Gillig Corporation	Misc. Vehicle Sales
Guest Supply	Light Industry
Hd Supply Waterworks	Heavy Industry
Heat & Control	Heavy Industry
Illumina	Chemical Products
Linde Group	Chemical Products
Pearson Dental Supply	Light Industry
R F Macdonald Company	Heavy Industry
Regency Enterprises	Bldg.Matls-Whsle
Thermage	Light Industry
Toyota Material Handling	Heavy Industry
Unisource Solutions	Office Equipment
United Cleaners Supply	Business Services
Western State Design	Heavy Industry
Western States Tool & Supply	Heavy Industry

Source: MuniServices, February 2015

[6] "Sales Tax Analysis and Reporting Service Preliminary Report - Third Quarter, 2014," MuniServices.

3.2 Profiles of Selected Industry Sectors

For each of the following sectors, this study provides a map depicting establishment locations and identifies major employers in the following sectors:

1. **Advanced Materials**
2. **Biomedical, Biotechnical and Life Sciences**
3. **Business and Financial Services**
4. **Food and Beverage Manufacturing**
5. **Information Technology and Telecommunications**
6. **Transportation and Logistics**

As discussed in Section 2.2, this study suppresses sensitive business data such as location employment or sales tax revenue statistics. Data for individual businesses are not published to protect the privacy of individual businesses. The suppression of data is consistent with public agency protocols for publishing labor market and industry reports. This data will be used internally to track trends and guide business attraction, expansion and retention activities.

3.2.1 Advanced Materials

Materials, the building blocks of physical products, generally fall within five major groups: metals, polymers, ceramics, glasses, and composites. Advanced materials refer to all new materials and modifications to traditional materials to obtain superior performance in their targeted application. The development of advanced materials is associated with the generation of new knowledge or intellectual property. Advanced materials may also lead to the design of entirely new products.

> "Advanced materials are associated with the generation of new knowledge, intellectual property and the design of entirely new products."

In Hayward there are approximately 370 businesses in the advanced materials sector, which employ an estimated 6,500 workers. These businesses specialize in:

- Basic chemical manufacturing
- Resin, rubber or artificial synthetic fibers or filaments manufacturing
- Pharmaceutical and medicine
- Paint, coating and adhesives
- Soap, cleaning compound and toilet preparation materials
- Plastic and plastic products
- Rubber products
- Alumina or aluminum production or processing
- Ferroalloy manufacturing
- Electroplating, plating, polishing, anodizing and coloring
- Steel and fabricated metal product manufacturing
- Metalworking machinery manufacturing
- Metal stamping and sheet metal work
- Electroplating, plating, polishing, anodizing and coloring
- Semiconductor and electronic components manufacturing
- Material testing laboratories
- Research and development Services

Exhibit 3-5 and 3-6 below illustrate the locations of advanced materials establishments and identify major employers. As illustrated in the map, firms in this sector are distributed throughout the industrial corridor.

Exhibit 3-5: Advanced Materials Sector Establishments

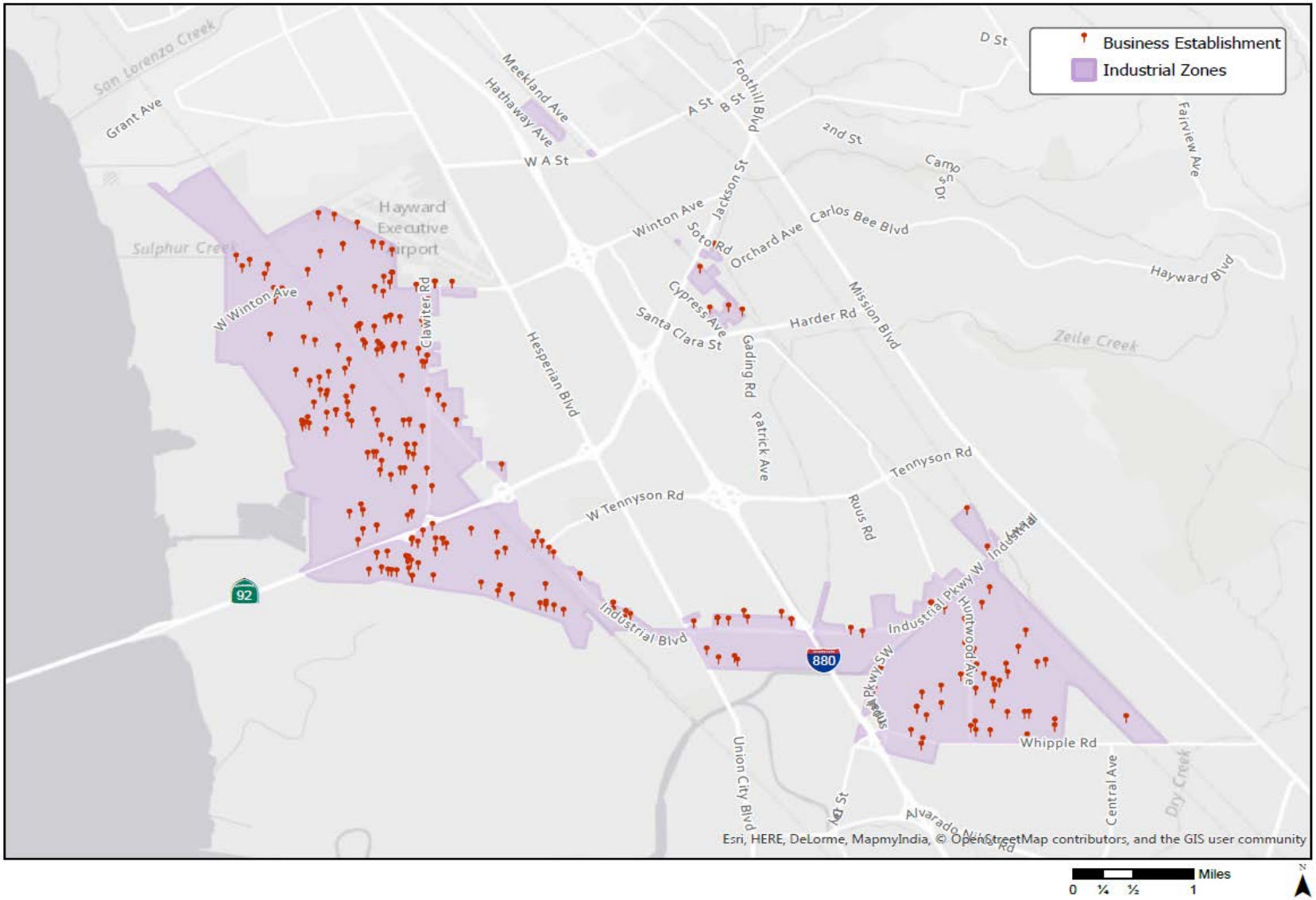


Exhibit 3-6: Advanced Materials Sector Major Employers

Company Name	NAICS	Description
Amedica Biotech Inc.	339112	Surgical & Medical Instrument Manufacturing
Baxter Bio Pharma	339112	Surgical & Medical Instrument Manufacturing
Bay Foam Inc.	326199	All Other Plastics Product Manufacturing
Coast Aluminum & Architectural	331523	Nonferrous Metal Die-Casting Foundries
Delphon Industries LLC	334413	Semiconductors & Related Devices Manufacturing
Dow Chemical Co	325211	Plastics Material & Resin Manufacturing
Forensic Analytical Consulting	541711	Research & Development In Biotechnology
Grand Central Station	334290	Other Communications Equipment Manufacturing
Illumina	541711	Research & Development In Biotechnology
Impax Laboratories Inc.	325412	Pharmaceutical Preparation Manufacturing
IMT Precision Inc.	332710	Machine Shops
Intarcia Therapeutics Inc.	541711	Research & Development In Biotechnology
Microlease	334515	Electricity & Signal Testing Instruments
Millipore Corp	325414	Biological Product (Except Diagnostic) Mfg
Mission Tool & Mfg Co	333514	Special Die & Tool, Die Set, Jig & Fixture Mfg
Morgan Technical Ceramics	327420	Gypsum Product Manufacturing
Moss Precision Inc	332710	Machine Shops
Pacific Die Cut Industries	333514	Special Die & Tool, Die Set, Jig & Fixture Mfg
Plastikon Industries Inc.	326199	All Other Plastics Product Manufacturing
Prozyme	541711	Research & Development In Biotechnology
Semano Inc	332813	Electroplating Plating Polishing Anodizing
Solta Medical Inc	339112	Surgical & Medical Instrument Manufacturing
Thermionics Corp	326199	All Other Plastics Product Manufacturing
Therm-X Of California	334512	Automatic Environmental Control Manufacturing
Ultra Clean Holdings Inc	334413	Semiconductors & Related Devices Manufacturing

Source: ReferenceUSAGov, January 2015

3.2.2 Biotechnical, Biomedical and Life Sciences

The biotechnical, biomedical and life sciences sector is defined by innovation and change. At its base, this sector uses cutting-edge technologies, advanced materials, and natural elements – cells, genes, proteins, enzymes and antibodies – to develop the knowledge, products and processes that improve the human condition and environment.

> "The biotechnical, biomedical and life sciences sector develops the knowledge, products and processes that improve the human condition and environment."

In Hayward, there are over 400 firms that employ an estimated 5,200 workers in this sector. The majority of these firms fall into three sub-sectors:

1. Scientific research and development;
2. Professional, scientific, technical and healthcare services; and
3. Manufacturing.

Manufacturing spans a range of products including: pharmaceuticals, medicinal and botanicals, surgical and medical instruments and specialized equipment.

The exhibits below illustrate locations of these establishments in the industrial corridor and identify major employers. Exhibit 3-7 indicates these establishments are located throughout the industrial corridor. However, there are more firms in the northern portion and a pocket of firms located in the central portion south of State Route 92. This area features business parks located along Point Eden Way, Research Place and Eden Landing Road.

Exhibit 3-7: Biotechnical, Biomedical and Life Sciences Sector Establishments

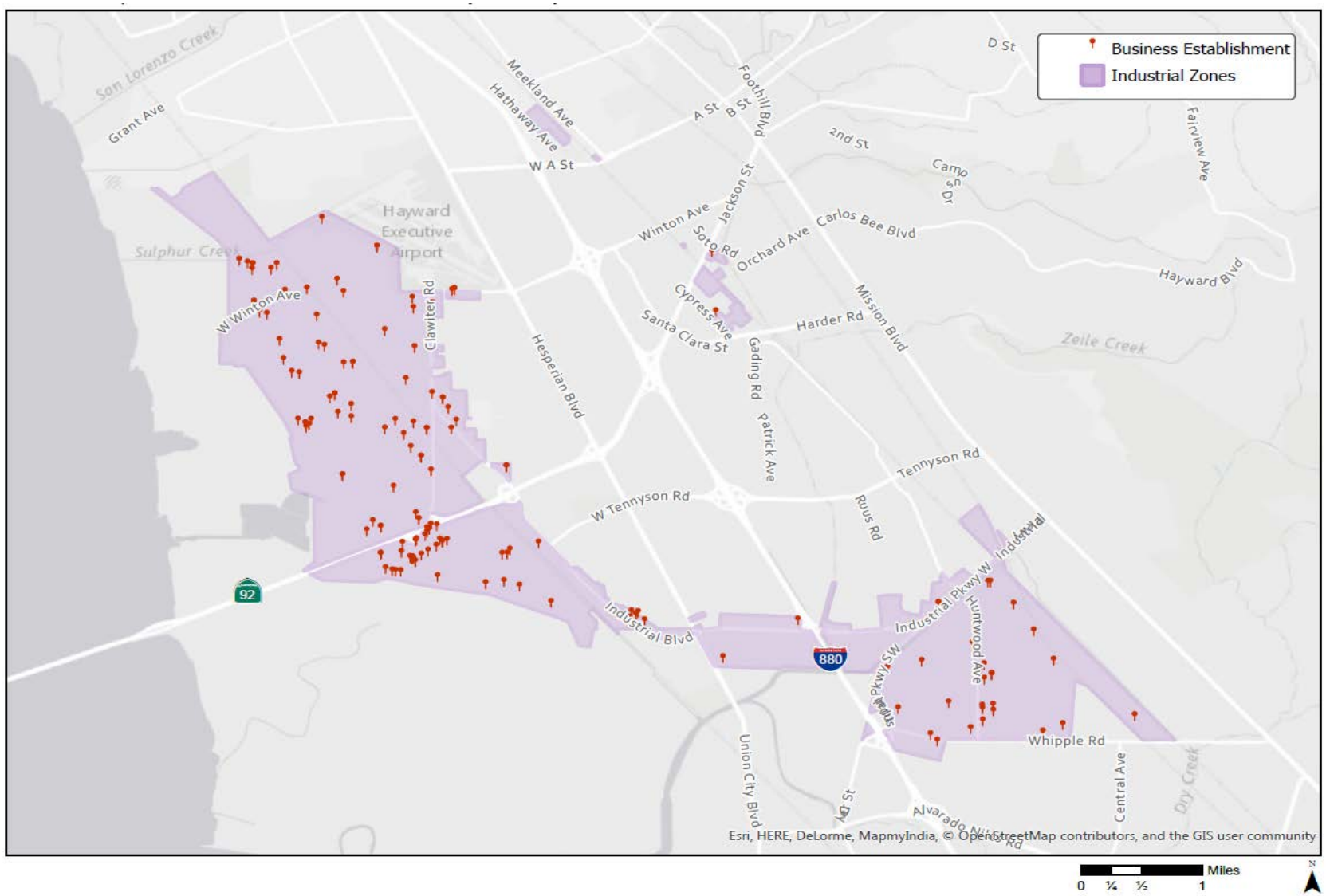


Exhibit 3-8: Biotechnical, Biomedical and Life Sciences Sector Major Employers

Company Name	NAICS	Description
Amedica Biotech Inc	339112	Surgical & Medical Instrument Manufacturing
Baxter Bio Pharma	339112	Surgical & Medical Instrument Manufacturing
Bay Point Health Care Ctr	621999	All Other Misc Ambulatory Health Care Services
Coram Healthcare Corp-Northern	621493	Freestanding Ambulatory Surgical & Emergency Ctrs
DaVita South Hayward Dialysis	621493	Freestanding Ambulatory Surgical & Emergency Ctrs
Forensic Analytical Consulting	541711	Research & Development In Biotechnology
Gateway Care & Rehab Ctr	621999	All Other Misc Ambulatory Health Care Services
Hantel Technologies	339112	Surgical & Medical Instrument Manufacturing
Hayward Dialysis Ctr	621493	Freestanding Ambulatory Surgical & Emergency Ctrs
Illumina	541711	Research & Development In Biotechnology
Impax Laboratories Inc.	325412	Pharmaceutical Preparation Manufacturing
Intarcia Therapeutics	541711	Research & Development In Biotechnology
Mendel Biotechnology	325411	Medicinal & Botanical Manufacturing
Millipore Corp	325414	Biological Product (Except Diagnostic) Mfg
Natural Formulas	446191	Food (Health) Supplement Stores
Prince Of Peace	325412	Pharmaceutical Preparation Manufacturing
Prozyme	541711	Research & Development In Biotechnology
Rural/Metro Ambulance	621910	Ambulance Services
Shaklee Distributor	446191	Food (Health) Supplement Stores
Size Wise LLC	423450	Medical, Dental/Hospital Equip/Supply Merchant Wholesaler
SNP Pharmacy	446110	Pharmacies & Drug Stores
Solta Medical Inc	339112	Surgical & Medical Instrument Manufacturing
Stericycle	562211	Hazardous Waste Treatment & Disposal
Sun Deep Cosmetics	446120	Cosmetics, Beauty Supplies & Perfume Stores
Winton Wellness Ctr	621999	All Other Misc Ambulatory Health Care Services

Source: ReferenceUSAGov, January 2015

3.2.3 Business and Financial Services

Business and Financial services is a broad term that describes firms that support commercial and retail customers but do not produce a tangible commodity. The establishments in this sector provide the following services:

- Banking, credit and loans
- Financial investment
- Insurance and bonding
- Real estate
- Legal
- Accounting, tax preparation, bookkeeping and payroll
- Specialized design
- Computer systems design and support
- Management, scientific and technical consulting
- Advertising and marketing

According to the California Employment Development Department, the strongest annual job growth in the Bay Area occurred in the professional and business services sector from 2013 to 2014.[7] The ReferenceUSAGov data shows that there are there are approximately 1,224 business and financial services businesses that in Hayward. These firms employ an estimated 5,052 workers.

> "Annual job growth in the business and financial services sector outpaced all other Bay Area sectors in 2014."

Exhibit 3-9 below illustrates locations of Hayward's business and financial service sector establishments, which are distributed throughout the industrial corridor. Exhibit 3-10 identifies the sector's major employers.

[7] State of California Employment Development Department, Labor Market Division, Monthly Data Release, January 23, 2015. http://www.calmis.ca.gov/file/lfmonth/oak$pds.pdf Last Accessed 2/26/15

Table 3-9: Business and Financial Services Sector Establishments

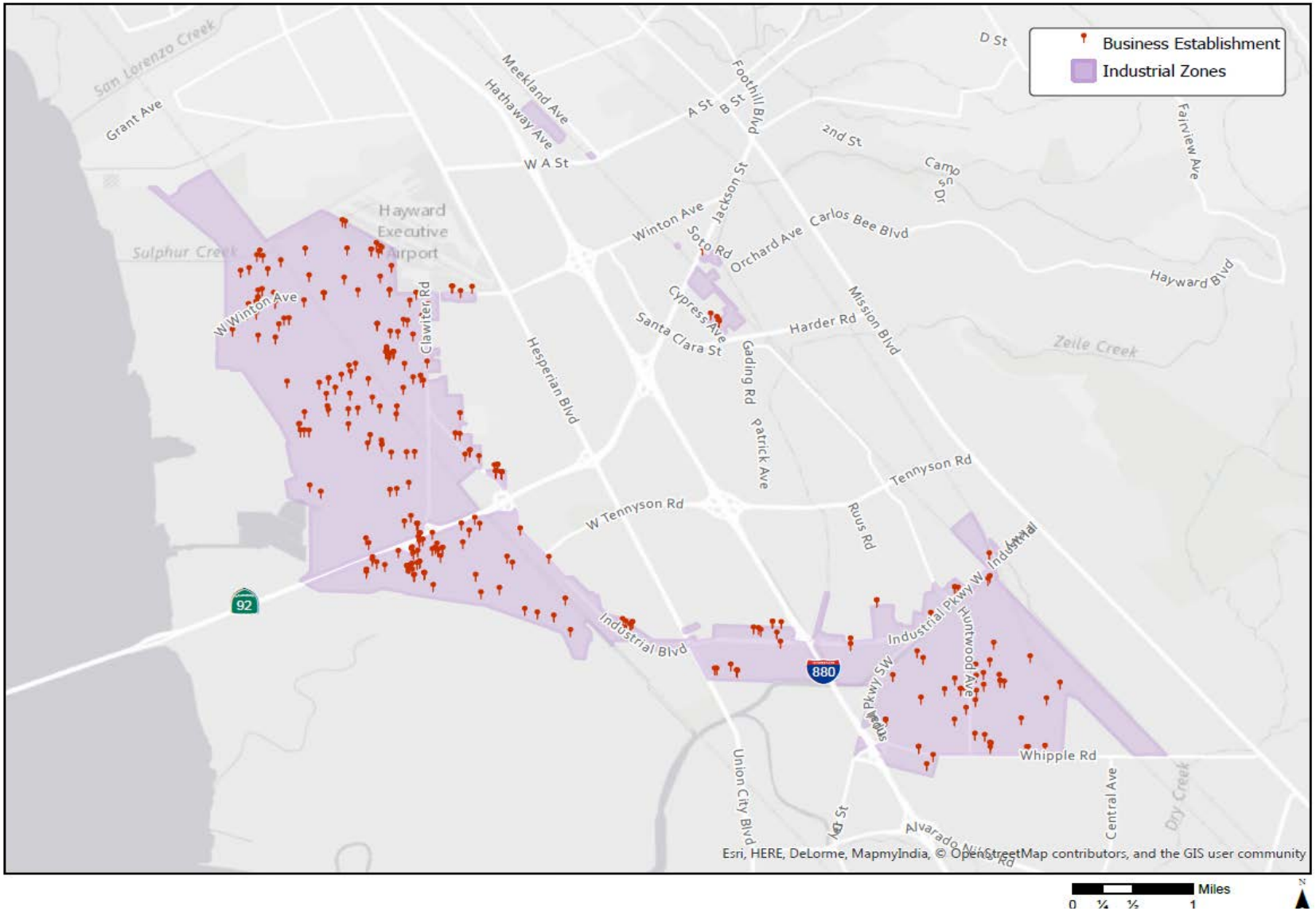


Exhibit 3-10: Business and Financial Services Sector Major Employers

Company Name	NAICS	Description
AAA Hayward	524210	Insurance Agencies & Brokerages
Admail Express Inc	541860	Direct Mail Advertising
Alameda County Housing Auth	531311	Residential Property Managers
Anamet Inc	541380	Testing Laboratories
Aqua-Duct Plumbing-Petroleum	531311	Residential Property Managers
ATA Retail Svc Inc	541613	Marketing Consulting Services
Bankers Life & Casualty Co	524210	Insurance Agencies & Brokerages
Belmont Remarketing Technology	523920	Portfolio Management
Bianchi USA (Marketing Office)	541613	Marketing Consulting Services
Business Services Network	541860	Direct Mail Advertising
Controlled Contamination Svc	541611	Administrative & General Mgmt Consulting Services
DBA Encon Electronics (Access Distributors Inc)	541870	Advertising Material Distribution Services
FBA Inc	541330	Engineering Services
Forensic Analytical	541380	Testing Laboratories
Frye Claims Consultation & Admin.	524291	Claims Adjusting
Gold Berry Distributors, Inc.	541310	Architectural Services
HSQ Technology Inc	541512	Computer Systems Design Services
I Q Personal	541612	Human Resources Consulting Services
Lea & Braze Engineering Inc	541330	Engineering Services
Mendel Biotechnology	541690	Other Scientific & Technical Consulting Services
Prologix-WEST LLC	541870	Advertising Material Distribution Services
Ricman Manufacturing	541330	Engineering Services
Rivermills Outfitters	541490	Other Specialized Design Services
Siemens Building Tech	541618	Other Management Consulting Services
Way To Be Design	541410	Interior Design Services

Source: ReferenceUSAGov, January 2015

3.2.4 Food and Beverage Manufacturing

Industries in the food and beverage manufacturing sector transform livestock and agricultural goods into products for intermediate or final consumption. The sector is distinguished by the raw materials (generally of animal or vegetable origin) processed into food products. The products manufactured in these establishments are typically sold to wholesalers or retailers for distribution to consumers. This sector also includes:

> "The food and beverage manufacturing sector transforms livestock and agricultural goods into products for final consumption."

1. Establishments engaged in baking or producing candy on the premises, but not for immediate consumption;
2. Manufacturers of beverages;
3. Firms that import, process, package or distribute specialty goods, seafood and wine.

According to the ReferenceUSAGov database, the food and beverage manufacturing sector in Hayward consists of 106 businesses and employs an estimated 3,550 workers. The exhibits below illustrate the spatial distribution and identify major employers in the food and beverage manufacturing businesses in the industrial corridor. Exhibit 3-11 illustrates these establishments are spread throughout the corridor.

Table 3-11: Food and Beverage Manufacturing Sector Establishments

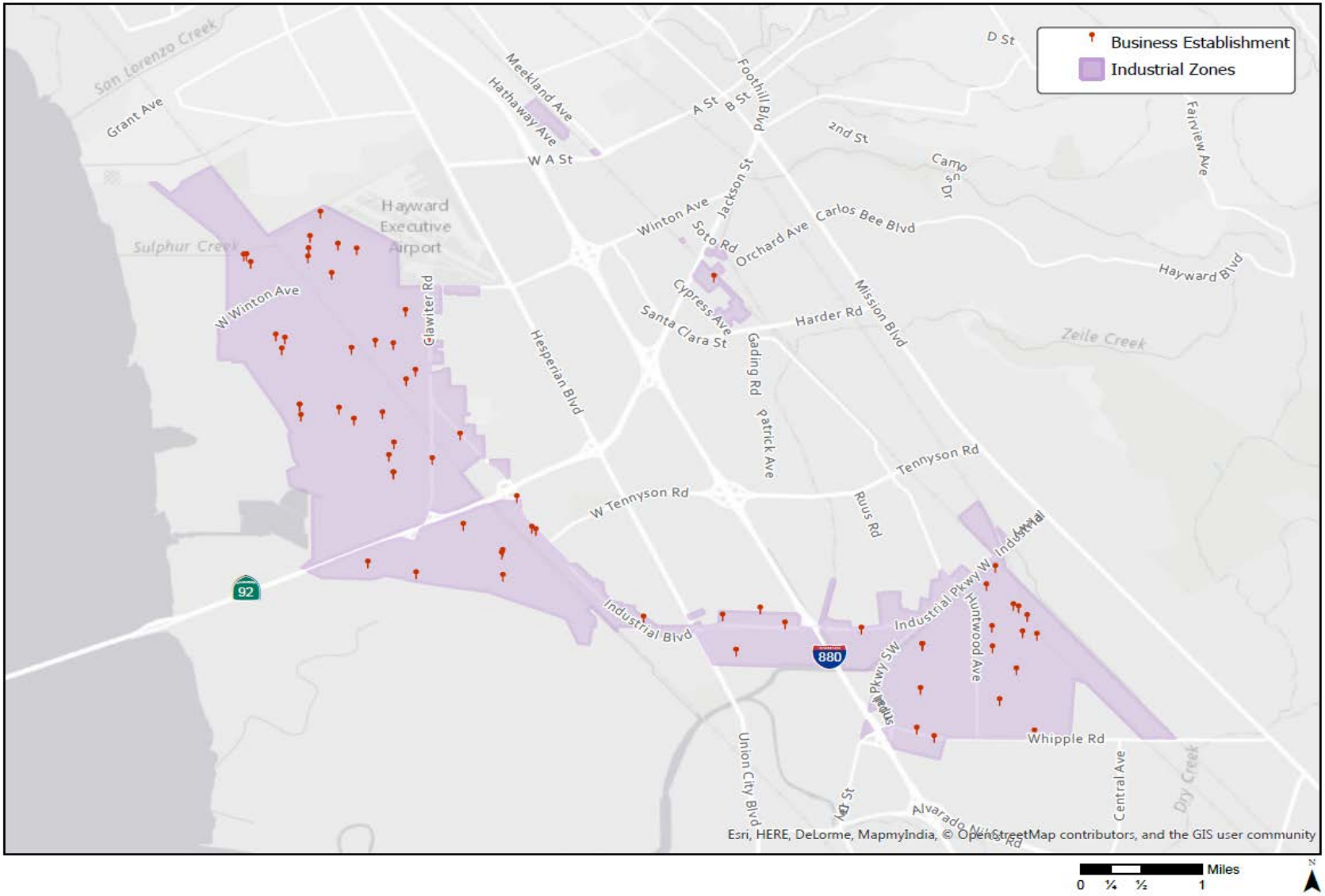


Exhibit 3-11: Food and Beverage Manufacturing Sector Major Employers

Company Name	NAICS	Description
Andersen Bakery Inc	311811	Retail Bakeries
Annabelle Candy Co Inc	311352	Confectionery Mfg From Purchased Chocolate
Armanino Foods-Distinction Inc	311412	Frozen Specialty Food Manufacturing
Azuma Foods Intl Inc USA	311710	Seafood Product Preparation & Packaging
Berkeley Farms LLC	311520	Ice Cream & Frozen Dessert Manufacturing
Best Express Foods	311812	Commercial Bakeries
Buffalo Bill's Brew Pub	312120	Breweries
Chefs' Warehouse	311999	All Other Miscellaneous Food Manufacturing
Columbus Foods	311999	All Other Miscellaneous Food Manufacturing
Freund Baking Co	311999	All Other Miscellaneous Food Manufacturing
Gallo Sales Co	312130	Wineries
Gourmet Foods Inc	311999	All Other Miscellaneous Food Manufacturing
Harvest Food Products Co Inc	311412	Frozen Specialty Food Manufacturing
Joe Pucci & Sons Seafoods	311710	Seafood Product Preparation & Packaging
Pacific Cheese Co	311999	All Other Miscellaneous Food Manufacturing
Panera Bread	311811	Retail Bakeries
Pepsi Bottling Group	312111	Soft Drink Manufacturing
Produce World	311942	Spice & Extract Manufacturing
Quick-N-Ezee Indian Foods (Sukhi's Gourmet Indian)	311999	All Other Miscellaneous Food Manufacturing
San Francisco Pasta Co	311824	Dry Pasta Dough/Flour Mixes Mfg-Purchased Flour
Shasta Beverages Inc	312111	Soft Drink Manufacturing
Sugar Bowl Bakery	311811	Retail Bakeries
United Food International	311999	All Other Miscellaneous Food Manufacturing
Windsor Foods	311412	Frozen Specialty Food Manufacturing
Wing Nien Food	311999	All Other Miscellaneous Food Manufacturing

Source: ReferenceUSAGov, January 2015

3.2.5 Information Technology and Communications

Companies across all industries and market segments that effectively compete nationally and globally strive to generate, transmit and understand information quickly and efficiently. The equipment, software and services these firms use to meet those objectives are provided by firms in the Information Technology and Communications (IT) industry sector.

> "The Information Technology sector produces the equipment, software and services all industries need to effectively compete in today's global marketplace."

Businesses in Hayward that fall within this sector specialize in the following activities:

- Computer and peripheral equipment manufacturing
- Electrical contracting
- Communications equipment manufacturing
- Semiconductor or related component manufacturing
- Automatic environmental control manufacturing
- Electrical equipment and component manufacturing
- Telecommunications
- Computer systems design and related services
- IT management consulting services
- Scientific research and development services

According to the ReferenceUSA database, there are approximately 535 IT sector establishments in the industrial corridor. Exhibit 3-12 illustrates the location of all IT establishments. Exhibit 3-13 identifies the sector's major employers.

Exhibit 3-12: Information Technology and Communications Sector Establishments

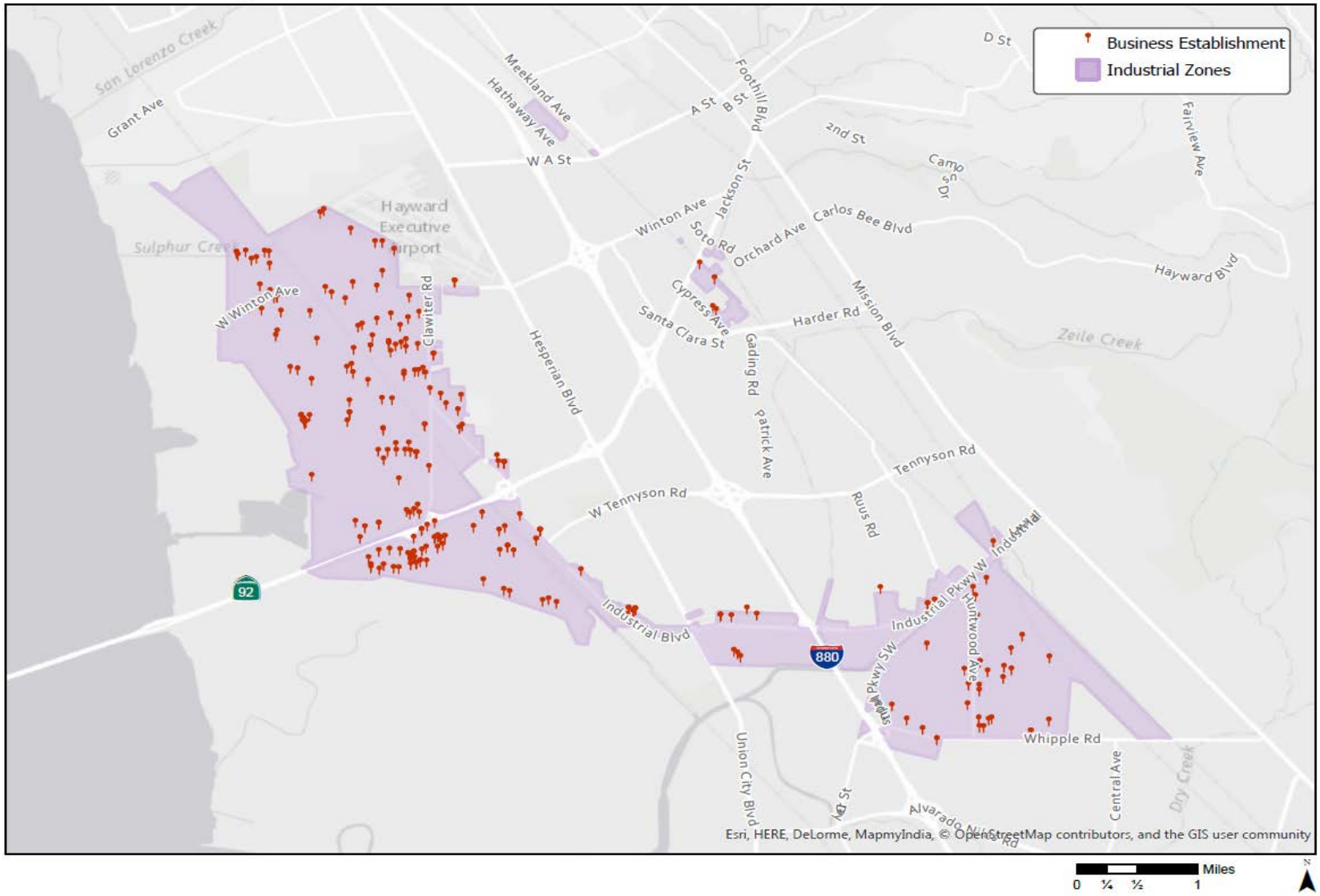


Exhibit 3-13: Information Technology and Communications Sector Major Employers

Company Name	NAICS	Description
Advance Carbon Products Inc	335991	Carbon & Graphite Product Manufacturing
Applied Photon Technology LLC	334419	Other Electronic Component Manufacturing
Cognex Corp	334111	Electronic Computer Manufacturing
Delphon Industries LLC	334413	Semiconductors & Related Devices Manufacturing
Grand Central Station	334290	Other Communications Equipment Manufacturing
Hayward Electric Co	238210	Electrical & Other Wiring Installation Construction
HSQ Technology Inc	541512	Computer Systems Design Services
Illumina	541711	Research & Development In Biotechnology
Intarcia Therapeutics Inc	541711	Research & Development In Biotechnology
Jupiter Systems	334111	Electronic Computer Manufacturing
KBL Associates	334512	Automatic Environmental Control Manufacturing
Kleinfelder	541711	Research & Development In Biotechnology
Marelich Mechanical	238210	Electrical Contractor & Other Wiring Installation Contractor
Microlease	334515	Electricity & Signal Testing Instruments
Pacific Gas & Electric Co	238210	Electrical Contractor& Other Wiring Installation Contractor
Pentagon Technologies	333318	Other Commercial & Service Industry Machinery Manufacturer
Prozyme	541711	Research & Development In Biotechnology
Siemens Building Tech	541618	Other Management Consulting Services
Solcom Inc	517919	All Other Telecommunications
Sound On Stage	334310	Audio & Video Equipment Manufacturing
Synergy Co.	334513	Industrial Process Variable Instruments
Therm-X Of California	334512	Automatic Environmental Control Manufacturing
Ultra Clean Holdings Inc	334413	Semiconductors & Related Devices Manufacturing
Ultrasil Corp	334413	Semiconductors & Related Devices Manufacturing
Wohler Technologies Inc	334310	Audio & Video Equipment Manufacturing

Source: ReferenceUSAGov, January 2015

3.2.6 Transportation and Logistics

The Transportation and Logistics sector involves the planning, management and movement of people, raw materials and goods by all modes and the related support services dealing with infrastructure, logistics, equipment, and facilities. In general, this sector includes three types of companies:

> "Transportation and Logistics involves the planning, management and movement of people, raw materials and goods."

1. Logistics service providers, such as transportation carriers, warehouses, forwarders, third party logistics companies, brokers and specialized consulting and IT operators;
2. Distributors and kitting companies; and
3. Logistics operations of industrial firms, such as the distribution operations of retailers or parts suppliers.

Hayward's access to multiple highway and rail routes, proximity to the Port of Oakland, and inventory of over 36 million square feet of industrial space offers transportation and logistics businesses a competitive advantage. As a result, the industrial corridor is home to over 500 transportation and logistics businesses that employ an estimated 4,270 workers. A large portion of these establishments are single owner-operator trucking and towing businesses.

Exhibit 3-14 below illustrates establishment locations and Exhibit 3-15 identifies the largest employers in the transportation and logistics sector. The map shows that these establishments distributed throughout the industrial corridor.

Exhibit 3-14 Transportation and Logistics Sector Establishments

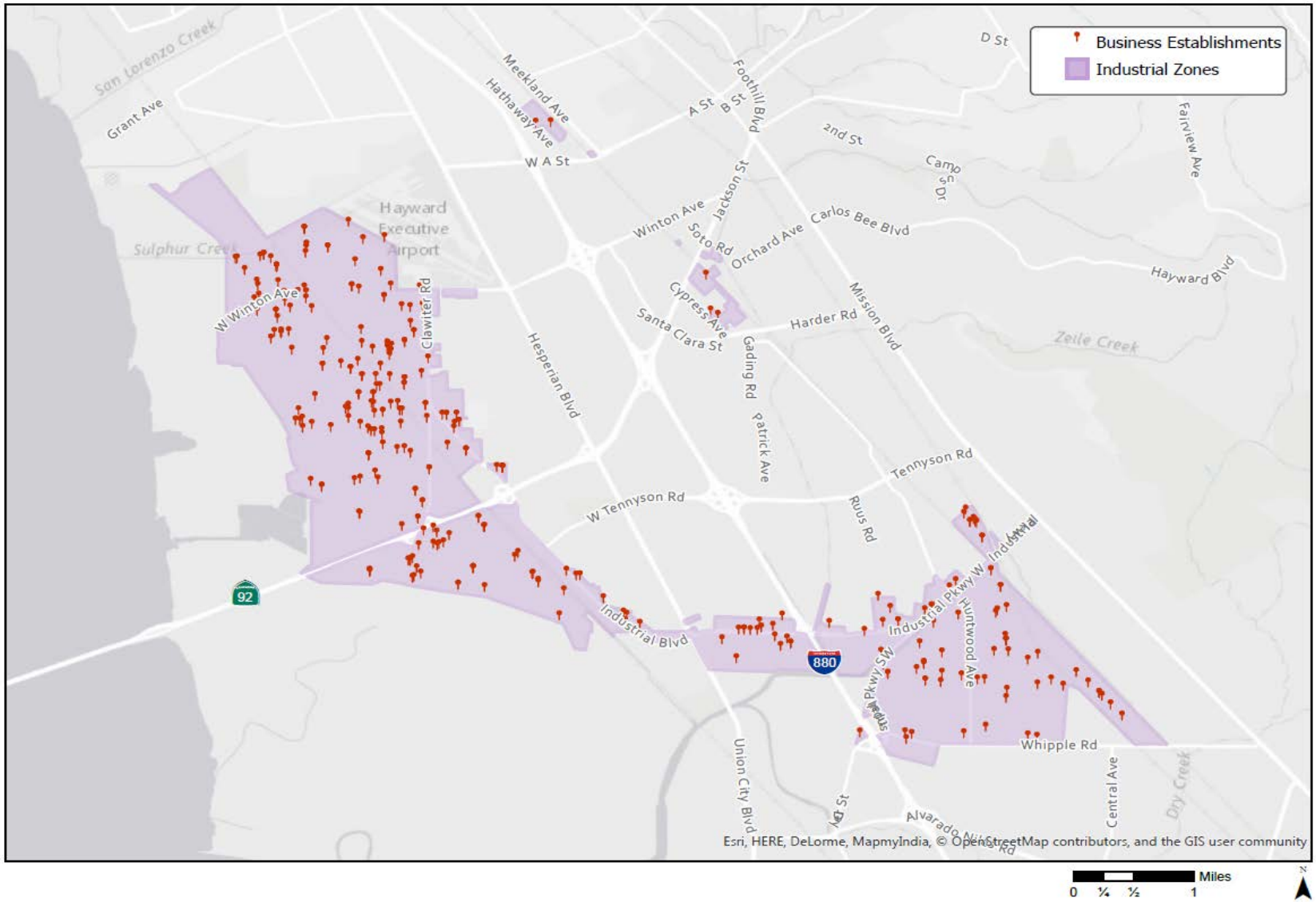


Exhibit 3-15: Transportation and Logistics Sector Major Employers

Company Name	NAICS	Description
AC Transit	488210	Support Activities For Rail Transportation
Angel Worldwide Transportation	485510	Charter Bus Industry
Brook Furniture Rental	484230	Specialized Freight (Exc Used Gds) Trucking Long Distance
Buffalo Distributions Svc	484230	Specialized Freight (Exc Used Gds) Trucking Long Distance
Central Freight Lines Inc	484230	Specialized Freight (Exc Used Gds) Trucking Long Distance
CEVA Logistics	484230	Specialized Freight (Exc Used Gds) Trucking Long Distance
Con-Way Freight	484230	Specialized Freight (Exc Used Gds) Trucking Long Distance
Daylight Transport LLC	484230	Specialized Freight (Exc Used Gds) Trucking Long Distance
Dynamex Inc	484110	General Freight Trucking, Local
Fedex Freight	484110	General Freight Trucking, Local
Golden Gate Air Freight	481112	Scheduled Freight Air Transportation
Hawaiian Express Svc Inc	488510	Freight Transportation Arrangement
Kuehne & Nagel	493110	General Warehousing & Storage
MAG Trucking	484230	Specialized Freight (Exc Used Gds) Trucking Long Distance
National Tank Services	484230	Specialized Freight (Exc Used Gds) Trucking Long Distance
Orion Logistics Inc	493130	Farm Product Warehousing & Storage
Orozco Transportation	484230	Specialized Freight (Exc Used Gds) Trucking Long Distance
Pilot Air Freight Corp.	481112	Scheduled Freight Air Transportation
RJR Transportation	488210	Support Activities For Rail Transportation
Road Star Trucking Inc	484230	Specialized Freight (Exc Used Gds) Trucking Long Distance
Servex Inc	493110	General Warehousing & Storage
T C Transportation Inc	484230	Specialized Freight (Exc Used Gds) Trucking Long Distance
The MiGroup	484110	General Freight Trucking, Local
Tricor America Inc	481112	Scheduled Freight Air Transportation
YRC Freight	484230	Specialized Freight (Exc Used Gds) Trucking Long Distance

Source: ReferenceUSAGov, January 2015

3.3 Advanced Industries

This section defines the "Advanced Industries" sector and explores its existence in Hayward. This sector is comprised of over 50 different industries that involve heavy investment in technology innovation and employ skilled technical workers that develop and apply new technologies to enhance productivity. The advanced industries concept is gaining national focus due to recent studies about its importance and impact on the American economy and workforce.

> "Advanced industries are the nation's crown jewel industries because they prime the economy with income, knowledge and technology. In doing, so they generate employment, value and progress across the entire economy." – The Brookings Institution.

In February 2015, the Brookings Institution (Brookings) published a study entitled, "America's Advanced Industries – What They Are, Where They Are and Why They Matter."[8] This research asserts that advanced industries are an anchor for the U.S. economy and led post-recession employment recovery. The report states that, "In sum, advanced industries are the nation's crown jewel industries because they prime the economy with income, knowledge and technology. In doing, so they generate employment, value and progress across the entire economy."[9]

A discussion of the sector's composition and economic impacts are provided detailed below. This discussion is followed by an evaluation of this sector's prevalence in Hayward.

3.3.1 Defining Advanced Industries

Exhibit 3-16 identifies the 50 different industries that comprise the Advanced Industries sector. These businesses include manufacturing, energy and service companies. Brookings selected this group of industries because they invest more in research and development (R&D) and employ a disproportionate share of "STEM" workers than other sectors. STEM is the acronym of science, technology, engineering, and mathematics. Specifically, advanced industries spend more than $450 per worker on research and development, which equates to the 80th percentile of spending activity of industries nationwide. Advanced industries also maintain a workforce where at least 21 percent of workers have STEM-knowledge intensive occupations (the U.S. average is 20 percent).

[8] Brookings Institution, "America's Advanced Industries – What They Are, Where They Are and Why They Matter" (February 2015) http://www.brookings.edu/research/reports2/2015/02/03-advanced-industries#/M10420 Last Accessed 2/19/15

[9] Ibid. pg. 15

Exhibit 3-16: Brookings Institution Advanced Industries Definition[10]

The 50 Industries That Constitute the Advanced Industries Sector		
MANUFACTURING		**ENERGY**
Aerospace Products and Parts	Motor Vehicles	Electric Power Generation, Trans., and Distribution
Agr., Construction, and Mining Machinery	Navigation, Measurement, and Control Instruments	Metal Ore Mining
Aluminum Production and Processing	Other Chemical Products	Oil and Gas Extraction
Audio and Video Equipment	Other Electrical Equipment and Components	**SERVICES**
Basic Chemicals	Other General Purpose Machinery	Architecture and Engineering
Clay Products	Other Miscellaneous Manufacturing	Cable and Other Subscription Programming
Commercial and Service Industry Machinery	Other Nonmetallic Mineral Products	Computer Systems Design
Communications Equipment	Other Transportation Equipment	Data Processing and Hosting
Computers and Peripheral Equipment	Pesticides, Fertilizers, and Other Agr. Chemicals	Medical and Diagnostic Laboratories
Electric Lighting Equipment	Petroleum and Coal Products	Mgmt., Scientific, and Technical Consulting
Electrical Equipment	Pharmaceuticals and Medicine	Other Information Services
Engines, Turbines, and Power Trans. Equipment	Railroad Rolling Stock	Other Telecommunications
Foundries	Resins and Synthetic Rubbers, Fibers, and Filaments	Satellite Telecommunications
Household Appliances	Semiconductors and Other Electronic Components	Scientific Research and Development
Industrial Machinery	Ship and Boat Building	Software Publishers
Iron, Steel, and Ferroalloys	Medical Equipment and Supplies	Wireless Telecommunications Carriers
Motor Vehicle Bodies and Trailers	Reproducing Magnetic and Optical Media	
Motor Vehicle Parts		

Source: Brookings Institution, 2015

3.3.2 Economic Impact of Advanced Industries

Advanced Industries play a major role in economic development. The following summarizes key Brookings study findings in terms the sector's economic impacts and implications for workers:

1. **Advanced Industries Generate a Large Share of GDP** - In 2013, over 12.3 million or nine percent of workers in the country worked in an advance industry business. These workers generated $2.7 trillion in value-added products. This amounted to 17 percent of all U.S. gross domestic product (GDP) in 2013, which was more than any other sector including healthcare, finance or real estate.

2. **Advance Industries Support Other Industry Sectors** – Advanced industry firms extensively support supply chains and other economic activity including purchasing an average of $236,000 in goods and services from other businesses per worker annually compared to $67,000 in purchasing in other sectors.

[10] Brookings Institution, 2015, pg. 39

3. **Advance Industry Jobs Create Additional Jobs -** Advanced industry growth has a "multiplier" effect on the economy. For every new advanced industry job, 2.2 jobs are created; 0.8 jobs are created locally and 1.4 outside the region.

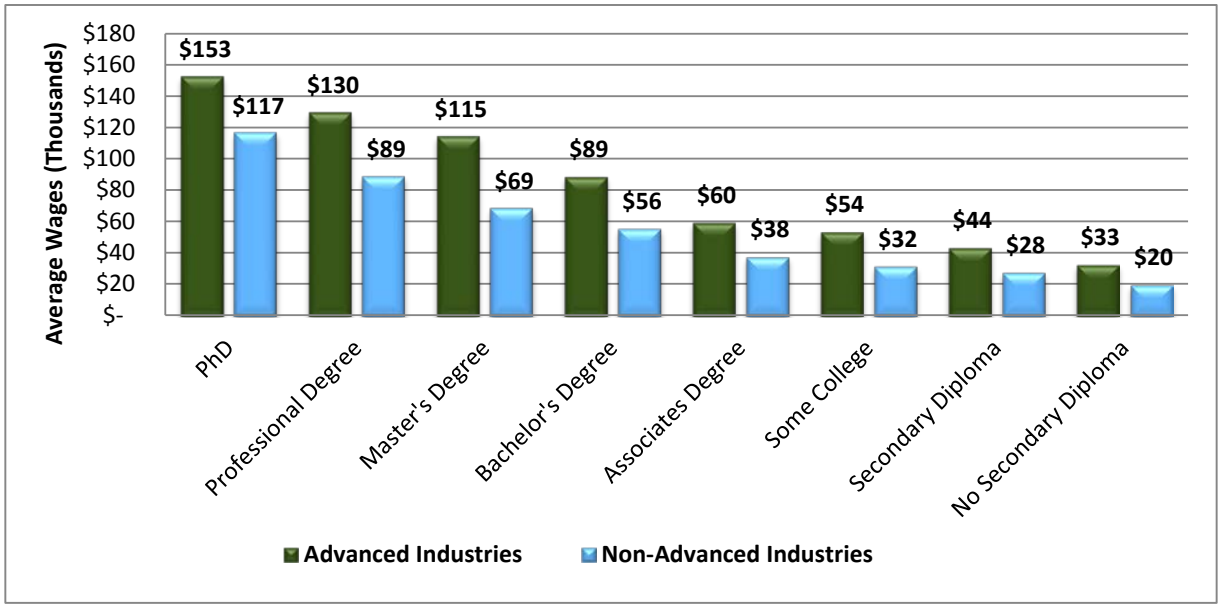
4. **Advanced Industries Pay Higher Wages -** As a result of the volume and value of the goods and services produced by the advanced industries sector, these employers pay higher wages than the rest of the economy. In 2013, the average advanced industries worker earned $90,000 in total compensation, which includes wages and benefits.

5. **Advanced Industries Offer Workers with Lower Education Levels Economic Opportunities –** While, in general, advanced industry workers have higher education levels than those in other sectors, this sector offers significant economic opportunity for workers with lower educational levels.

While the correlation between higher education levels and higher wages remains clear, advance industries offer greater wages at every level of education compared to other industries. As shown in the exhibit below, on average a worker with an associates degree earns $60,000 in the advanced industry sector compared to $38,000 earned by peers outside the sector. In fact, an advanced industry worker with an associate degree can earn more than those with bachelor's degrees in other industries.

> "Advanced industries offer greater wages at every level of education compared to other industries nationwide."

Exhibit 3-17: Comparison of Average Annual Wage by Education Level



Source: Reproduced using data from the Brookings Institution

Note that nationwide only half of the workers in the advanced industries sector hold less than a bachelor's degree. The study found that nine percent of advanced industry workers earned an associate degree. However, 47 percent possess no college degree. This group includes those that have attended some college and/or received a trade or technical certificate.

3.3.3 Hayward's Advanced Industries Sector

As shown in the exhibit below, the Brookings analysis found that the San Francisco-Oakland-Hayward metropolitan area ranks fifth in the nation for advanced industry share of total employment. Employment in the advance industries in the Bay area is concentrated in services and manufacturing sectors.

> "The San Francisco-Oakland-Hayward metropolitan area ranks fifth in the nation for advanced industry share of total employment."

Exhibit 3-18: Metropolitan Area Share of Advance Industry Employment

Rank (Intensity)	Metro Area	Advanced Industry Share of Total Area Employment (Intensity) (2013)	Advanced Industry Employment (2013)	Share in Manufacturing	Share in Services	Share in Energy
1	San Jose-Sunnyvale-Santa Clara, CA	30.0%	291,700	46.1%	53.8%	0.1%
2	Seattle-Tacoma-Bellevue, WA	16.0%	295,000	44.8%	54.8%	0.4%
3	Wichita, KS	15.5%	46,800	84.6%	12.8%	2.5%
4	Detroit-Warren-Dearborn, MI	14.8%	279,400	49.4%	48.7%	1.9%
5	San Francisco-Oakland-Hayward, CA	14.0%	297,200	23.2%	76.4%	0.4%
6	Washington-Arlington-Alexandria, DC-VA-MD-WV	13.7%	503,500	6.0%	92.6%	1.4%
7	Palm Bay-Melbourne-Titusville, FL	13.4%	26,600	62.5%	36.4%	1.1%
8	Boston-Cambridge-Newton, MA-NH	13.3%	338,900	30.7%	68.0%	1.3%
9	Houston-The Woodlands-Sugar Land, TX	12.8%	361,000	38.3%	42.3%	19.4%
10	San Diego-Carlsbad, CA	12.3%	176,300	37.2%	61.5%	1.3%
11	Austin-Round Rock, TX	12.1%	106,300	35.0%	62.6%	2.4%
12	Provo-Orem, UT	12.0%	25,100	32.5%	66.9%	0.6%
13	Raleigh, NC	11.7%	64,400	26.6%	72.2%	1.2%
14	Ogden-Clearfield, UT	11.3%	26,500	63.8%	35.4%	0.8%
15	Salt Lake City, UT	11.1%	71,600	40.7%	56.0%	3.4%
	United States	**8.7%**	**12,284,000**	**44.4%**	**50.4%**	**5.2%**

Source: Brookings Institution, 2015

This study identified over 1,000 Hayward businesses that fall within the advanced industries sector definition. Exhibit 3-19 below illustrates locations of these establishments. Exhibit 3-20 identifies the largest employers.

Exhibit 3-19: Advanced Industries Sector Establishments

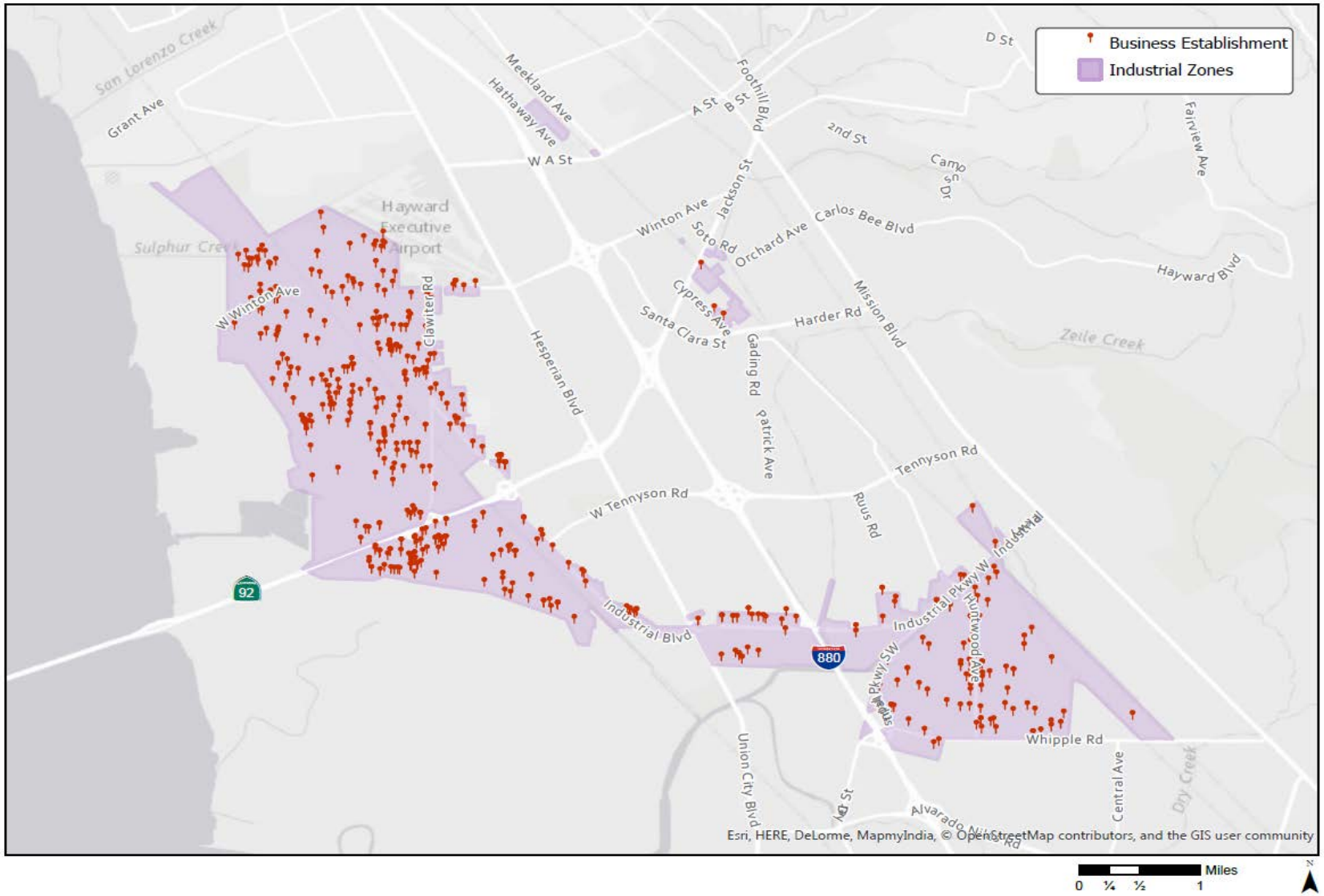


Exhibit 3-20: Advanced Industries Sector Major Employers

Company Name	NAICS	Description
Amedica Biotech Inc	339112	Surgical & Medical Instrument Manufacturing
ATA Retail Svc Inc	541613	Marketing Consulting Services
Baxter Bio Pharma	339112	Surgical & Medical Instrument Manufacturing
California Hydronics Corp	333911	Pump & Pumping Equipment Manufacturing
Coast Aluminum & Architectural	331523	Nonferrous Metal Die-Casting Foundries
Controlled Contamination Svc	541611	Administrative & General Mgmt Consulting Services
Davis Instruments	333111	Farm Machinery & Equipment Manufacturing
Delphon Industries LLC	334413	Semiconductors & Related Devices Manufacturing
DISH Network	515210	Cable & Other Subscription Programming
Du Pont EKC Technology Inc	325998	All Other Misc Chemical Product & Preparation Mfg
Forensic Analytical Consltng	541711	Research & Development In Biotechnology
GILLIG LLC	336111	Automobile Manufacturing
Heat & Control Inc	333241	Food Product Machinery Manufacturing
Illumina	541711	Research & Development In Biotechnology
Impax Laboratories Inc	325412	Pharmaceutical Preparation Manufacturing
Mendel Biotechnology	325411	Medicinal & Botanical Manufacturing
Microlease	334515	Electricity & Signal Testing Instruments
Millipore Corp	325414	Biological Product (Except Diagnostic) Mfg
Montague Co	333318	Other Commercial & Service Industry Machinery Mfg
Pacific Gas & Electric Co	211111	Crude Petroleum & Natural Gas Extraction
Pentagon Technologies	333318	Other Commercial & Service Industry Machinery Mfg
Plastikon Industries Inc	325211	Plastics Material & Resin Manufacturing
Siemens Building Tech	541618	Other Management Consulting Services
Solta Medical Inc	339112	Surgical & Medical Instrument Manufacturing
Ultra Clean Holdings Inc	334413	Semiconductors & Related Devices Manufacturing

Source: ReferenceUSAGov, January 2015

4. CONCLUSION & RECOMMENDATIONS

By using the most recent data available and the U.S. Economic Development Administration's methodology for grouping businesses into major industry sectors, this study provides a baseline profile of Hayward's Industrial Technology and Innovation Corridor. The following chapter summarizes key findings and outlines recommendations on how to apply this information to shape and further the City's economic development program.

4.1 Key Findings

In addition to the database of business establishments and employment data, this study produced the following findings:

1. **The City's industrial corridor is home to a mix of industrial businesses.** In general, the corridor consists of six major industry sectors:

    - Advanced Materials
    - Biotechnical, Biomedical and Life Sciences
    - Business and Financial Services
    - Food and Beverage Manufacturing
    - Information Technology and Communications
    - Transportation and Logistics

2. **Businesses in each sector are located throughout the industrial corridor.** There is no clear geographic cluster of similar businesses. This distribution is the result of Hayward's current and previous land use regulations, which allows a diverse mix of industrial uses to locate throughout the industrial corridor.

3. **Advanced Industries support workforce and business development.** Advanced industries employ and continue training of STEM workers. They also conduct more B2B purchasing than other industries nationwide. This investment in people and resources produces a higher-skilled labor force and supports growth of other businesses.

4. **Advanced Industries are employment generators.** These industries have a multiplier effect on the economy. For every new advanced industry job, 2.2 jobs are created; 0.8 jobs are created locally and 1.4 outside the region.

5. **The Advanced Industries sector offers significant economic opportunities for workers of all education levels.** While in general advanced industry works have higher education levels than those in other sectors, this sector offers significant economic opportunity for workers with lower educational levels. The national average for an advanced industry workers with an associate degree is $60,000 compared to $38,000 for workers in other sectors.

4.2 Recommendations

> *"Future changes to the Industrial Technology and Innovation Corridor are expected to include building and landscaping improvements, infill development, and the redevelopment of underutilized properties. The Corridor is expected to grow as an economic and employment center and evolve to achieve a healthy balance of traditional manufacturing and information and technology-based uses."*
>
> **– City of Hayward General Plan 2040**[11]

This study produced the information needed to develop strategic policies and programs that fulfill the General Plan's vision for the industrial corridor and shape the activities established in the Economic Development Strategic Plan. The following details recommendations to apply the study's findings.

4.2.1 Explore Land Use and Zoning Policies to Attract Advanced Industries

Creating an environment that attracts advanced industry firms requires the development of the type and size of facilities these operations seek. It is recommend the City support land use policies that encourage redevelopment and development of new "Class A" industrial spaces. These spaces include industrial facilities for light manufacturing and small to mid-sized "flex" space buildings used by laboratories and small urban collaboration/research operations.

Supporting increases in the supply of new facilities will help mitigate two barriers to entry into Hayward's industrial corridor: 1) the lack of modern buildings and spaces, and 2) the time and materials cost associated with upgrading existing buildings to meet operation demands.

4.2.2 Develop the Infrastructure and Amenities that Attract Advanced Industries

Advanced industries use cutting-edge equipment, technology and processes to produce value-added goods and services. It is recommended that City invest in the infrastructure and amenities these firms seek during site selection.

Infrastructure, defined as the physical and organizational structures and facilities these firms need to operate, includes, but is not limited to:

- Broadband internet services (fiber);
- A Fire Department capable of addressing fire and hazardous material incidents;
- Multimodal transportation options that connect workers to the industrial corridor; and
- Wet and dry utilities including water, sewer, power, and gas.

Amenities are defined as the non-operational related features that are conducive to adding to the attractiveness and value of the industrial corridor. These include place-making elements and the retail,

[11] City of Hayward, General Plan 2040, July 2014, pg. 3-22

service and accessibility options that support the needs of advanced industries' workforce. Specifically, amenities may include:

- Business servicing retail and services
- Lodging and regional conference facilities
- Restaurants
- Childcare services
- Open space and trails
- Gateway markers, landscaping and place-making elements

4.2.3 Foster Industry Partnerships to Grow Major Industry Sectors

Collaboration among local businesses produces a sense of community and place, which supports business retention, expansion and attraction. It is recommended that the City apply this study's industrial business database and dedicate resources to encourage interaction between businesses. Key activities would include:

- Conducting outreach to targeted industry sectors to engage and develop relationships with new and existing businesses;
- Working closely with these business representatives to identify needs and goals; and
- Facilitating events or workshops to bring business leaders together to explore collaborative opportunities, transfer knowledge and craft solutions to common issues.

CONCLUSION

This report establishes a baseline profile of the Industrial Technology and Innovation Corridor to guide economic development activities and fulfill the General Plan's vision. It found a diverse base of industries, many of which are considered "Advanced Industries." Advanced Industries offer opportunities for Hayward's workforce and economy.

To achieve results, this information must drive the development of policies, programs, and partnerships that support business expansion, attraction and retention in this important sector.