



Memorandum

TO: COMMUNITY AND ECONOMIC
DEVELOPMENT COMMITTEE

FROM: Chris Burton

SUBJECT: STRENGTHENING
MANUFACTURING IN SAN JOSE

DATE: June 12, 2012

Approved

Date:

June 18, 2012

RECOMMENDATION

Accept Staff's report on manufacturing in San Jose and priority actions to retain and grow manufacturing-related activity and jobs.

EXECUTIVE SUMMARY

Through outreach to local manufacturers and data analysis, staff has identified the following findings regarding manufacturing in San Jose.

1. The San Jose metro area ranks #2 of the top 100 metro areas nationally for specialization in manufacturing.
2. During the last decade, San Jose lost manufacturing jobs, but at a lesser rate than California and the nation; local output and productivity increases were much stronger than the state and nation.
3. Manufacturing provides significant value to the San Jose/Silicon Valley innovation economy.
4. The local manufacturing ecosystem includes three kinds of companies: Original Equipment Manufacturers, contract manufacturers and supply network manufacturers.
5. San Jose is a high cost/high value manufacturing location and has become specialized in supporting a new product introduction niche in the global manufacturing process.
6. Local manufacturing service providers are an important resource for the next generation of emerging growth companies in clean tech, medical devices, and information/communication technology.
7. Manufacturers cite the experienced, skilled workforce as a location advantage for San Jose, but also report difficulty hiring appropriately skilled workers.
8. Manufacturers are located in older, one- to two-story industrial R&D buildings, and have limited ability to operate in taller structures; there is concern about market pressure to redevelop manufacturing buildings for office uses.

9. Although the City offers programs that can reduce operating costs, minimize downtime, and speed hiring of quality workers, manufacturers' awareness of these programs is low.

Staff intends to implement the following strategies to strengthen manufacturing in San Jose.

1. Promote more widespread use of existing city programs that can reduce operating costs, minimize downtime, and speed hiring of qualified workers.
2. Help forge connections between manufacturing service companies and emerging technology companies in clean tech, medical devices, and information/communications technology.
3. Develop new programs and partnerships to prepare residents for careers in manufacturing, working with education, training, labor and community partners.
4. Preserve the diversity of industrial lands and viability of facilities that support manufacturing.
5. Inform state and federal policy discussions about the extensive, successful manufacturing sector in San Jose/Silicon Valley, requirements for future success, and implications for the national economy.

BACKGROUND

In April of 2010, City Council adopted San Jose's second five-year Economic Strategy to align City and partner resources in a common direction to aggressively regain jobs and revenue (Strategic Goals #1-6), and to create a world-class business and living environment (Strategic Goals #7-12). The Strategy included Strategic Goal #3: "Preserve and strengthen manufacturing-related activities and jobs."

Manufacturing, fabrication, and assembly remain an essential part of the high-tech innovation ecosystem that is Silicon Valley. The opportunity to increase employment in sectors such as clean-technology, medical devices and information/communication technology depends on being able to locate businesses that manufacture products nearby. Production-related jobs in high-tech are critical to supporting other local-serving sectors and provide unique and important employment opportunities at a variety of skill levels.

In October of 2011, City Council adopted the second 18-month workplan to implement the 2010 Economic Strategy. City Council identified "Top Five" workplan priorities that staff should spend 80% of their time pursuing. Included in Priority #1 of the workplan was direction to preserve and strengthen manufacturing-related activity.

This report updates the Council Committee on the results of staff outreach to local manufacturers, on new data analysis about local manufacturing, and on recommended actions to encourage retention and growth of manufacturing-related activity and jobs.

June 12, 2012

Subject: Strengthening Manufacturing in San Jose

Page 3 of 15

ANALYSIS

As part of the Office of Economic Development's Business Outreach program, staff has met with more than 50 businesses involved with manufacturing. In addition, staff conducted original data analysis and reviewed recent national studies about manufacturing. This work leads to nine key findings about San Jose's manufacturing sector.

Finding #1: The San Jose metro area ranks #2 of the top 100 metro areas nationally for specialization in manufacturing

Manufacturing-related activity accounts for about 20% of all jobs in Santa Clara County, employing more than 150,000 people. The average size company has 59 employees. In its recent report *Locating American Manufacturing: Trends in the Geography of Production*, the Brookings Institute found that the San Jose-Sunnyvale-Santa Clara metro area was the second most manufacturing-specialized among the nation's 100 largest metropolitan areas in 2010. (Wichita, Kansas ranked first). Manufacturing specialization is the share of local employment in manufacturing compared with the national share of employment in manufacturing.

Unique in the nation, the San Jose area is specialized in advanced manufacturing related to high tech. Thirty-two manufacturing sectors in Santa Clara County are considered highly "specialized" (See Exhibit A), meaning they are significantly more concentrated here than the national average. Twenty-nine of these 32 sectors are involved with high-tech. (The remaining three are retail bakeries, sauce manufacturing, marking device manufacturing). Across Santa Clara County, these 29 specialized high-tech manufacturing sectors make up 76% of all manufacturing jobs.

The City of San Jose is home to 2,500 manufacturing-related companies, employing over 65,000 people. About 840 companies in San Jose fall into the specialized high-tech manufacturing sectors.

Sector	County Employment
Electronic computer manufacturing	33,716
Semiconductors and related device manufacturing	27,513
Electricity and signal testing instruments	6,723
Other electronic component manufacturing	5,067
Semiconductor machinery manufacturing	4,650
Broadcast and wireless communications equip.	4,557
Machine shops	4,350
Bare printed circuit board manufacturing	4,083
Surgical and medical instrument manufacturing	3,319
Analytical laboratory instrument manufacturing	2,919
Blank magnetic and optical media manufacturing	2,527
Electro-medical apparatus manufacturing	2,246
Printed circuit assembly manufacturing	1,702
Electron tube manufacturing	1,578
Miscellaneous electrical equipment mfg.	1,505

June 12, 2012

Subject: Strengthening Manufacturing in San Jose

Page 4 of 15

Other computer peripheral equipment mfg.	1,306
Sheet metal work manufacturing	1,293
Electroplating, anodizing, and coloring metal	882
Optical instrument and lens manufacturing	877
Other measuring and controlling device mfg.	765
Metal stamping	750
Other biological product manufacturing	508
Miscellaneous general purpose machinery mfg.	412
Software reproducing	271
Photographic film and chemical manufacturing	254
Capacitor, resistor, and inductor mfg.	208
Custom architectural woodwork and millwork	159
Irradiation apparatus manufacturing	111
Wood housings	78
Total: Specialized Manufacturing Sectors	114,329
Total: Manufacturing Sectors	150,370
Total: All Industries	756,587

Employment calculated from Quarterly Census of Employment and Wages Data 2010

Finding #2: During the last decade, San Jose lost manufacturing jobs, but at a lesser rate than California and the nation; local output and productivity increases were much stronger than the state and nation.

The rate of decline of U.S. manufacturing jobs between 2005 and 2010 was 19.2% – a loss of 2.7 million jobs. California fared slightly better than the nation, shedding manufacturing jobs at a rate of 15.4% over the same period. The San Jose area also lost manufacturing jobs over the same period, but at a significantly lower rate of 9.2% (16,254 jobs). When considered alongside the relative increase in local GDP, this reduction in jobs highlights a significant increase in productivity over this period.

Between 2001 and 2009, the San Jose area saw significantly stronger output growth in its manufacturing sector than the rest of the state and the nation. Local manufacturing GDP rose at a compound annual growth rate (CAGR) of 8.7%, compared to 1.6% in the rest of California and 1.4% nationwide. Much of this growth can be attributed to the Computer and Electronic Product Manufacturing sector. This sector grew at a CAGR of 13.6%, while output of all other basic manufacturing sectors declined over the same period. This pattern of decline in basic manufacturing sectors, such as Fabricated Metal Product Manufacturing and Machinery Manufacturing, suggests that this is an area of concern for sustainability of the local manufacturing ecosystem.

Finding #3: Manufacturing provides significant value to the San Jose/Silicon Valley innovation economy.

The specialized geographic concentration of manufacturing activity in San Jose/Silicon Valley brings significant and unique value to the regional economy and community.

June 12, 2012

Subject: Strengthening Manufacturing in San Jose

Page 5 of 15

First, specialized manufacturing enables exports outside the local region; selling products to other domestic and international markets stimulates the local economy, generating additional direct and indirect employment and spending. The San Jose area ranks first nationally in exports per capita. This connection to global growth is a real source of strength, and would not be possible without a strong manufacturing base. Manufacturing-related export activity has a very high multiplier effect. The Milken Institute estimates that the computer manufacturing sector creates fifteen additional jobs for every one employee it hires.

Second, manufacturing has a net positive effect on commercial innovation in the local economy, since goods-producing firms are more likely to develop and introduce new products and process improvements than are service firms. Manufacturing industries perform 69% of all domestic R&D nationally (National Science Foundation). As described later, manufacturing activity in the San Jose area is tied to new product innovation.

Perhaps most important, high-tech manufacturing attracts highly skilled labor and provides well-paid jobs across a wide range of occupations. In general, manufacturing sectors demonstrate a healthy distribution of employment between production, general/administrative, and design and development jobs. This wide range of occupations also covers a diverse cross section of training and skill requirements. (An exception is computer and peripheral equipment, which skews toward higher end, college-requiring occupations.)

On average, the San Jose area offers the highest wages for manufacturing employees in the nation. In part, these higher wages are attributable to the type of industries found within the local economy. However, even when adjusted for industry composition, San Jose pays higher wages even in traditionally lower paying industries nationwide. The exception to this appears to be food manufacturers who pay \$3,000 less per year than the national average (Brookings Institute).

Training Level by Manufacturing Occupation

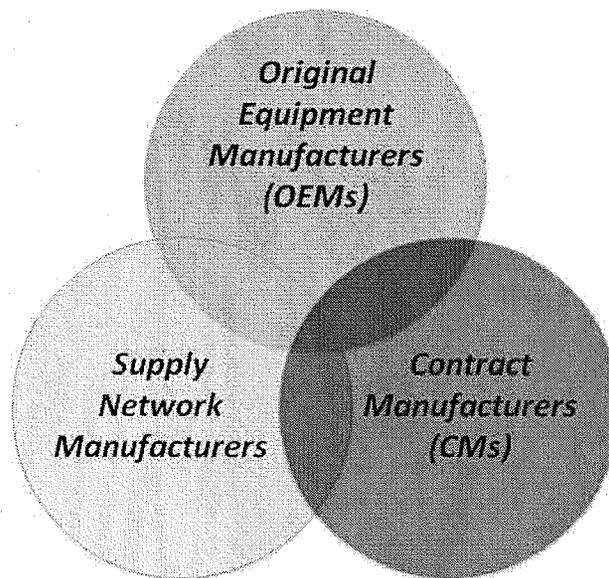
Occupation	Training Levels
Machinists	Long-Term On-the-Job Training
Assembly Technicians	Moderate-Term On-the-Job Training
Milling & Machine Operators	Moderate-Term On-the-Job Training
Computer Control Operators	Associate Degree
Electrical Engineer Technicians	Associate Degree
CNC Machinist	Post-Secondary Vocational Education
Production Technicians	Moderate-Term On-the-Job Training
Electronic Assemblers	Short-Term On-the-Job Training
Lathe Operators	Moderate-Term On-the-Job Training
QA Inspectors	Moderate-Term On-the-Job Training
First Line Supervisors	Work Experience in a Related Occupation
Process Engineers	Bachelor's Degree or Higher and Some Work Experience

Production Engineer	Bachelor's Degree or Higher and Some Work Experience
Manufacturing Supervisor	Master's Degree
Plant Manager	Bachelor's Degree or Higher and Some Work Experience

Source: Bureau of Labor Statistics

Finding #4: The local manufacturing ecosystem includes three kinds of companies: OEMs, contract manufacturers and supply network manufacturers.

Local manufacturers that make up the San Jose/Silicon Valley manufacturing ecosystem can be categorized as original equipment manufacturers, contract manufacturers or supply network manufacturers. Because of the varying scope of their work, some companies fall into multiple categories.



Original equipment manufacturers (OEMs) are companies that design and specify products under their own company name and brand. Traditionally, OEMs design products, purchase components from suppliers, operate their own manufacturing plants, and handle sales, service and support activities; increasingly, however, much of this work is being outsourced.

OEMs can be difficult to define clearly due to the complex nature of the relationships between companies and the products they supply. For example, a typical OEM working in networking hardware (Company A) may produce a product, such as a network switch, which could be sold directly to another business (Company B) as a retail transaction, where Company B would purchase the product for their internal use. In this instance, Company A would be considered the OEM. Alternatively, Company A could sell the same hardware to a third party reseller (Company C) as a component part of a complete system, such as a complete data center solution that has network switches alongside other hardware. In this instance Company C is acting as the OEM.

June 12, 2012

Subject: Strengthening Manufacturing in San Jose

Page 7 of 15

Because of the complex nature of interrelationships, the OEM category represents the largest number of companies and highest employment in the local manufacturing economy. Major tech companies including Cisco, Brocade, and Western Digital are included in this category, as are emerging growth companies such as SunPower, Altierre and C8 Medisensors.

As a result of market dynamics and the evolution of electronics manufacturing, the OEMs typically limit their in-house production capabilities, and seek lower-cost geographies like Asia and South America for production at scale. The primary function at their Silicon Valley locations is research and development and general/administrative activities. Development of new products and the ramping up of the production process is managed by a highly trained workforce. As a result, the number of skilled production and assembly jobs has declined significantly. While there is evidence of some production relocating in house and back to the U.S (e.g., Altierre and C8 Medisensors), much of the production done by OEMs is in partnership with Contract Manufacturer/Electronic Manufacturing Services providers (CM/EMS). This allows companies to avoid investing in purpose-built and wholly owned production facilities, since a contract manufacturer can leverage their investment across multiple customers.

OEMs tend to have a greater degree of vertical integration than other areas of manufacturing, meaning that they own or control different parts of their supply chain and have less interdependence with other sectors. Despite this integration, OEMs have a significant impact on the local economy. On average, OEMs spend \$3.2 billion per year within the local economy to procure goods and services. From this, their final output is \$4.4 billion, demonstrating significant value add to local GDP. Roughly 14% of the spending by OEMs is on research and development and semiconductor services. Approximately 11% is spent within the wholesale sector. OEMs have the highest average wage across manufacturing related activity at \$235,000 per employee.

Contract Manufacturers (CMs), also known as Electronic Manufacturing Service providers (EMSs), have a strong presence in San Jose to be close to their customer base. Of the 10 largest global contract manufacturers, six have a presence in San Jose and the remainder all have a presence within the Bay Area. Beyond these, there are a variety of smaller Tier 2 and Tier 3 CMs serving Silicon Valley.

Contract manufacturing refers to the process whereby companies outsource the production of their prototypes, components, or finished products to firms providing manufacturing services. Typically, companies will provide the product design and will hire the manufacturer to serve as their factory for production, assembly, and shipping logistics. This sector leverages broad economies of scale and strategic investment in facilities and equipment to meet the needs of a wide set of clients, thereby reducing the need for individual company investment.

San Jose's contract manufacturers have an average salary of \$176,000 per employee and spend approximately \$2.9 billion within the local market on the procurement of resources and components to be included in the production of goods. The final value of the goods CMs are producing is over \$12.9 billion. Approximately 21% of CM spending occurs in the semiconductor related services and another 11% within the wholesale sector. Approximately 4% of CM spending is on research and development services.

June 12, 2012

Subject: **Strengthening Manufacturing in San Jose**

Page 8 of 15

Supply Network Manufacturers represent the third key manufacturing area. This area is characterized by smaller companies performing specialized operations that play a critical role supporting both OEMs and CMs. Examples include machine shops, sheet metal shops, cable manufacturers, and electroplating, plating, polishing, and anodizing companies. Their work primarily involves high mix/low volume manufacturing. Some of the larger firms in this area provide contract services such as assembly, prototyping or new product development. Additionally, some companies that provide equipment or components to other manufacturers fall between the Supply Network and OEM categories.

Based on statistical analysis and company interviews, retention of companies in this portion of the manufacturing cluster is a significant area of concern. The nature of business for many of these companies means that much of their work is in low volumes or is highly specialized. In both cases, projects can be sporadic and subject to very competitive bidding. This makes smaller companies in this field incredibly cost sensitive and restricts their ability to consistently staff to full capacity or to invest in their facilities, capital equipment or processes. Companies such as Fastrak Manufacturing, Berger Manufacturing and HBR Industries work closely with, and play a critical role in supporting, major OEMs in the valley through rapid response to immediate needs and working directly with design and development engineers to solve complex issues. To the extent that the number of companies is declining, the San Jose manufacturing cluster is diminishing a critical part of its competitive advantage.

Supply network manufacturers spend \$282 million in the local market place and produce \$473 million in output. The sector has an average wage of \$81,600. Unlike CMs, the supply chain firms spending among other industries is more diverse where only 10% of spending is within the wholesale sector and only 6% of the spending is on semiconductor related services

Finding #5: San Jose is a high cost/high value manufacturing location and has become specialized in supporting a new product introduction niche in the global manufacturing process.

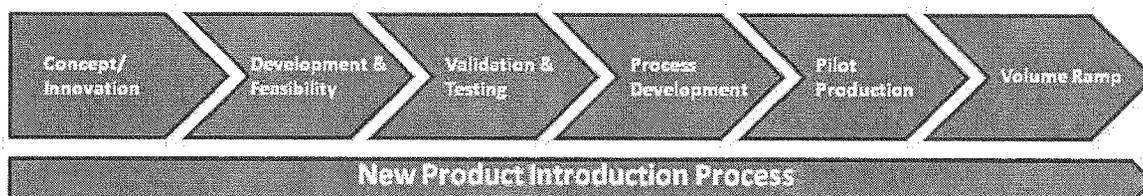
Cost is a significant consideration for companies making a location investment and manufacturing companies, in particular, are sensitive to fluctuating or high operating costs including utilities, real estate and labor prices. Manufacturing firms only locate those portions of their manufacturing operations in Silicon Valley that require the unique value that this location offers.

Manufacturing activity in San Jose/Silicon Valley is uniquely oriented to this new product introduction—the process of converting new innovations into tangible products by designing and building them here first. This highly specialized part of the production process where new products are designed, developed and prepared for full scale production is tightly linked to research, development, design and engineering. Through interaction and iteration, manufacturers are involved in the product development process early and work closely with partners to launch pilot production quickly and effectively.

Much of this manufacturing can be characterized as high mix/low volume — meaning that manufacturing involves short runs of a wide variety of specialized products that require a high

degree of technical expertise. What begins with a new idea or innovation evolves through a new product introduction process that ends with mass production and entry into the market place. This process involves a series of steps as detailed below.

San Jose/Silicon Valley is Specialized in New Product Introduction



Consistent development, improvement and execution of new innovations benefit from having support services in geographic proximity. Emerging technology and product lines require flexibility and rapid response to any alterations that must occur through the early stages of the new product introduction process. As such, there is significant advantage to proximity of essential services that are either wholly owned by a company designing and manufacturing the product, or accessed through manufacturing partners such as contract manufacturers and the extensive supply network including component manufacturers. This is the key to San Jose's manufacturing cluster.

The traditional value of a Silicon Valley location is often characterized as access to market, access to capital and access to talent. This is also true for manufacturers since locating in San Jose/Silicon Valley provides firms with the ability to communicate quickly and casually with the companies they work with, provides opportunities for emerging technology production companies to form and grow, and provides access to the unique employee talent pool and specialized expertise in the area.

The high mix/low volume nature of new product introduction is very high-value-added and is less cost sensitive than volume manufacturing activity. Specialized, innovation-oriented manufacturing work has remained and succeeded in one of the most expensive real estate market in the United States, while lower-value activities less related to innovation have located in lower-cost locations globally.

Finding #6: Local manufacturing service providers are an important resource for the next generation of emerging growth companies in clean tech, medical devices, and information/communication technology.

The manufacturing capability related to new product introduction is having a noticeable impact on the development of emerging technologies across many sectors: medical devices, renewable energy, energy efficiency, defense/aerospace, information technology (software, hardware, information technology security), cloud computing, electronics, and networking.

The concentration of contract manufacturers and supply network manufacturers is a unique asset that aids these companies in the rapid development and scaling of new technology products. Manufacturing service providers offer deep manufacturing knowledge and experience and create an attractive value proposition for companies developing new products by accelerating time-to-market through rapid development and deployment of prototypes, minimizing investment and capital expenditure, lowering risk by providing design, supply chain and manufacturing process expertise, and by lowering total product costs.

In the recent work2future report *Contract Manufacturing in Silicon Valley* (attached), manufacturing service providers reported a belief that a greater portion of their business will come from smaller, emerging technology firms. At the same time, many believe that the existing industry associations and networking events tend to represent large firm interests and that there is insufficient opportunity for them to network with smaller firms. Many of the manufacturers believe that key industries such as electronics and computing, clean technology, and medical products do not recognize the breadth of manufacturing expertise available locally.

Finding #7: Manufacturers cite the experienced, skilled workforce as a location advantage for San Jose, but also report difficulty hiring appropriately skilled workers.

The *Contract Manufacturing in Silicon Valley* report highlighted occupational categories of importance to contract manufacturers as well as related education and training preferences and skill deficiencies. Employers were asked to identify the occupations where they have the hardest time sourcing qualified candidates. Of the responses provided, five occupations stood out:

- Engineers (electrical and mechanical)
- Designers
- Machine operators and other “on-the-floor” labor
- Quality control technicians
- Assemblers

The report highlighted deficiencies in both technical and soft skills. Soft skills, such as the ability to use a computer, write clearly, and communicate appropriately, were cited frequently as lacking in many candidates. Also noted was machining ability. Though the deficiencies are troubling for many firms, these responses – as well as the desire for enhanced hands-on training and experience – suggest that the deficiency could be addressed by industry training and broader exposure to different career opportunities.

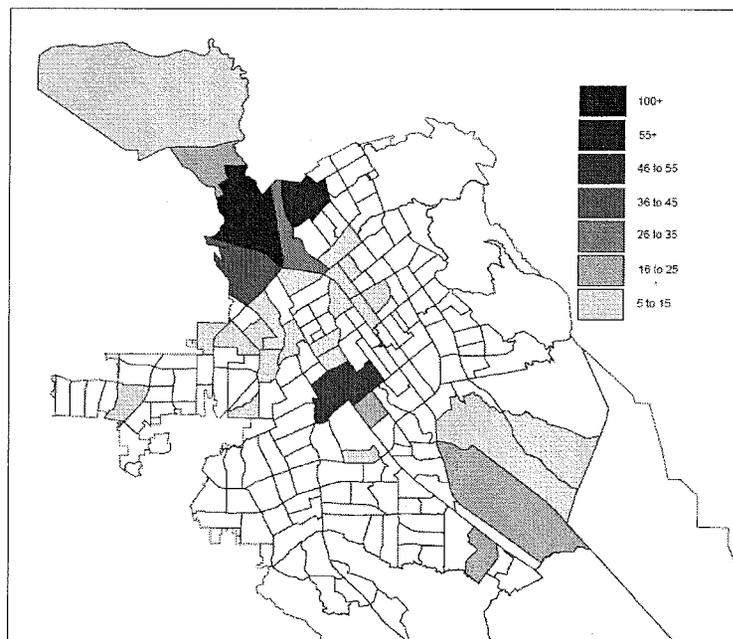
Finding #8: Manufacturers are located in older, one to two-story industrial R&D buildings, and have limited ability to operate in taller structures. Industrial vacancy rates are tight, and there is concern about market pressure to redevelop manufacturing buildings for office uses.

While San Jose’s manufacturing cluster has evolved, the buildings they are housed in generally have not. Data gathered from those companies with 50 or more employees that fall into the 29 specialized technology manufacturing sectors reveals that the average size of building housing these companies is about 100,000 square feet and the average age is a little less than 26 years

old. Most of these buildings are one to two story industrial R&D buildings and do not always resemble traditional manufacturing facilities.

The major centers of manufacturing in San Jose are in North San Jose around the North First Street Corridor. Over the next 20 years, the City expects these areas to intensify significantly. While examples exist today of new product development occurring in six- to eight-story buildings, many of these businesses may not be able to accommodate multi-story operations or they may be cost prohibitive.

The current trend in real estate is to provide higher density, Class A office/R&D buildings with good access and nearby or onsite amenities. This is largely in response to the emergence of social media as a high-growth opportunity and the continued growth of key Internet companies.



Concentration of Firms in Manufacturing in San Jose by Census Tract

As Silicon Valley real estate evolves into more of an office market, there is potential to leave manufacturing companies without adequate buildings and suitable environments. This would be damaging, ultimately, to the growth, diversity, and resiliency of the entire Silicon Valley ecosystem.

Finding #9: While the City offers programs that can reduce operating costs, reduce downtime, and speed hiring of quality workers, manufacturers' awareness of these programs is low.

Many of the City's existing business assistance programs were developed originally to support manufacturing companies and can have tangible benefits. It is apparent that many companies are unaware that these programs exist or do not fully understand the benefits available. Key programs, including the Enterprise Zone, Foreign Trade Zone, and Use Tax Incentive Programs, are underutilized by manufacturing companies and efforts should be made to increase awareness. Other support programs that should be more effectively marketed include expedited permitting programs offered by the Building Department and workforce development programs provided by work2future.

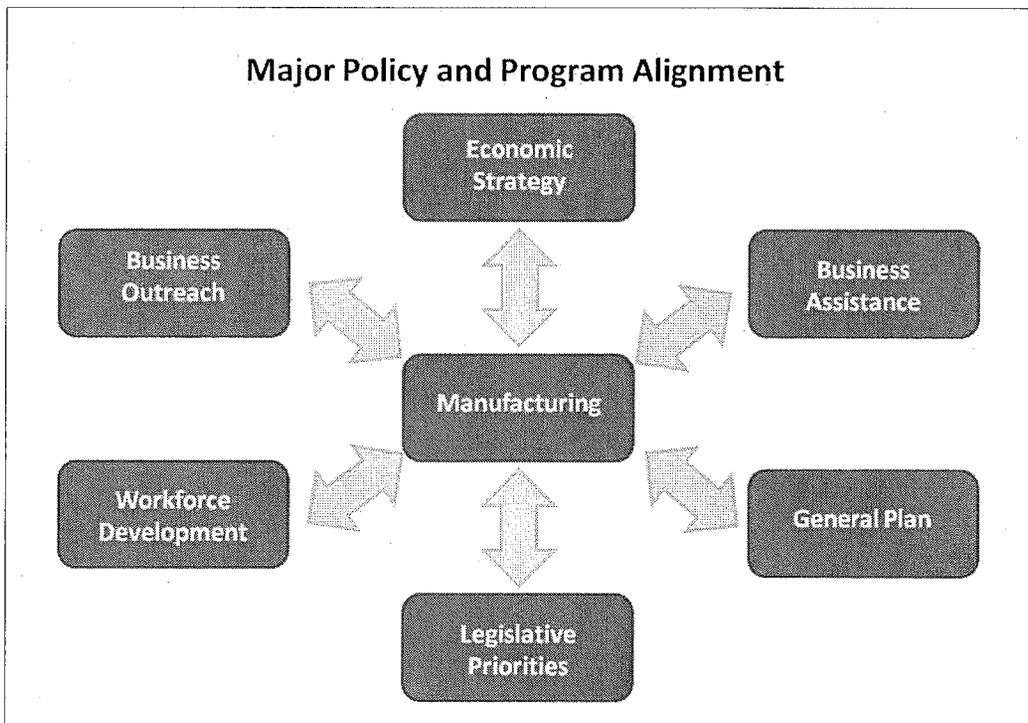
Businesses expressed concern about the amount of time and resources they must invest to obtain any of the benefits. Programs like the Foreign Trade Zone and Use Tax Incentive Program may

offer only incremental benefit associated with irregular activities, such as the purchase of capital equipment or the import of goods such as components. For many of the smaller manufacturing companies, these are not regular events and as such when the time comes, these programs are not top of mind.

STRATEGY TO SUPPORT MANUFACTURING

To better support for manufacturing-related industries, it is important to ensure that City policies and programs are aligned and that access to any City offering brings seamless connection to other available support.

Currently, manufacturing is supported at a policy level by the Economic Strategy, the General Plan and the City's legislative priorities. On a program level, support exists within the ongoing business outreach program, the City's business assistance programs, and through various programs in work2future. As policies are implemented over time, it is important to ensure that the intended alignment of support for San Jose's manufacturing industries is realized.



For example, the recently adopted Envision 2040 General Plan contains numerous land use policies that support the preservation of diverse industrial lands in San Jose. Examples include encouraging the development of new industrial areas and the redevelopment of existing older or marginal industrial areas with new industrial uses, and the revitalization, maintenance and creation of Light Industrial and Heavy Industrial designated sites that are at least one acre in size in order to facilitate viable industrial uses. It will be important to ensure that a deep, nuanced understanding of industrial uses is included when implementing these policies. For example,

manufacturing-related activity exists throughout the City's industrial lands, including industrial park and core transit employment areas where intensification is intended to occur, and these uses may be limited in their ability to locate suitable facilities that are two stories or less.

Through business outreach and analysis, OED staff have confirmed a five-part strategy to retain and strengthen manufacturing-related activity in San Jose.

Strategy #1: Promote more widespread use of existing city programs (business assistance, development incentives, hiring services) that can reduce operating costs, minimize downtime, and speed hiring of qualified workers.

- a. To help alleviate cost barriers to manufacturing in San Jose, make businesses aware of available programs and the real monetary benefits they can provide. Improve coordination with partners inside and outside of the City organization to ensure that manufacturers have access to relevant and timely information about these programs.
- b. Train City staff in all business-facing departments about the available programs to ensure that manufacturing firms working through any City processes become aware of other resources including expedited permitting, reduced development taxes, and development incentives. Development services programs, and in particular the expedited permitting programs, provide a good opportunity to broaden awareness of business support programs.
- c. Provide materials in person and on the City website that clearly highlight the complete dollar benefit and resource investment required to utilize these programs. Feature examples of San Jose companies that have successfully used these programs.

Strategy #2: Help forge connections between manufacturing service companies and emerging technology companies in clean tech, medical devices, and information/communications technology.

- a. Coordinate business events that educate emerging technology companies on the value of local manufacturing services and improve the awareness of and access to manufacturing service providers.
- b. Compile and disseminate information about the manufacturing services available locally. Consider creating a manufacturing service provider directory to highlight local capabilities.
- c. Connect manufacturing service providers with incubators, entrepreneur groups, and other start-up support organizations to help them learn about cutting edge innovation and get early access to innovative new firms. Help emerging company entrepreneurs find qualified and reliable component and prototype manufacturers. Bridging these two sectors will help develop a pipeline of potential customers for manufacturing service providers and help improve the speed of commercialization of emerging technology companies.
- d. Connect manufacturers to PROSPECT SV, the City's planned clean tech demonstration and commercialization center. By design, this facility will help companies display, demonstrate

and develop their new innovations not only is this a specific area of interest for manufacturing service providers, but this demonstration phase is the point of development at which they can add most value to new products.

Strategy #3: Develop new programs and partnerships to prepare residents for careers in manufacturing, working with the education, training, and labor partners.

- a. Through work2future, work with small groups of manufacturers currently engaged in training programs to demonstrate the value of these programs to this industry. Upon successful completion, document success stories to highlight the process, benefits and limitations of these programs to other potential participants.
- b. Connect manufacturers with local universities and colleges to help align and expand foundational training in applied engineering, machining skills, and product design to better reflect the required experience and knowledge of the industries and technologies they are focused on. Through these connections, disseminate practical knowledge on the need to develop skills and knowledge beyond the academic requirements of their degree and provide opportunities to develop skills around the machines and design applications that are often used in this sector.
- c. Develop opportunities to introduce students and job-seekers to contract manufacturing internships and related entry-level opportunities in manufacturing-related firms. Work experience is critically important for jobseekers in contract manufacturing. Employers reported that an understanding of the tools and technology as well as knowledge of the client industries that the firm supports can make the difference in getting a job with the company. Jobseekers interested in working in manufacturing should look to find internships with a manufacturing related firm in key areas such as medical device manufacturing, renewable energy, defense and aerospace, and information technology and security.

Strategy #4: Preserve the diversity of industrial lands and viability of facilities that support manufacturing.

- a. Work directly with commercial real estate brokers, owners and developers to identify opportunities to rehabilitate, renovate or completely redevelop manufacturing facilities that meet the needs of San Jose's broad manufacturing sector.
- b. Monitor and discourage the encroachment of incompatible uses into industrial lands, and minimize where possible the impacts of non-industrial uses which would result in the imposition of additional operational restrictions and/or mitigation requirements on manufacturers.
- c. Monitor the absorption and availability of real estate suitable for manufacturers to ensure a balanced supply of available land for all sectors.
- d. Work with partner agencies to maintain primary freight routes that provide for direct access for goods movement to industrial and employment areas.

June 12, 2012

Subject: Strengthening Manufacturing in San Jose

Page 15 of 15

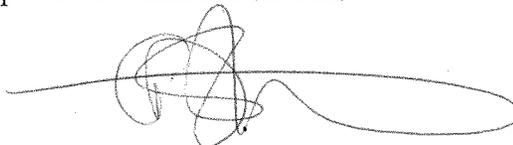
Strategy #5: Inform state and federal policy discussions about the extensive, successful manufacturing sector in San Jose/Silicon Valley, requirements for future success, and implications for the national economy.

- a. Identify opportunities for partnership around programs currently being developed at both the State and Federal level regarding support for advanced manufacturing.
- b. Promote San Jose's importance as a center for domestic manufacturing, drawing on this new data and research. Work with partner organizations to communicate the unique characteristics of the San Jose/Silicon Valley manufacturing ecosystem, which are not always adequately represented in state and federal forums.
- c. Work closely with partner organizations such as Manex to establish and provide readily accessible, high quality, affordable manufacturing extension services to help San Jose's small and midsize manufacturers meet the challenges imposed by rapid technological change and global competition.
- d. Work with manufacturing partners to identify key areas for legislative advocacy.

FOLLOW UP

To implement this strategy, staff will continue engaging with manufacturing firms through one-on-one business outreach meetings and by convening companies and industry partners. Clearly, successful support for manufacturing in San Jose cannot be undertaken without the partnership and support of local companies and industries. Staff will work with industry partners to convene representatives across all forms of manufacturing in order to provide input, guidance and support to implement this strategy.

Staff will continue to keep the Committee and full City Council apprised of its ongoing work with this important sector through regular reports on business outreach.



CHRIS BURTON
Business Development Manager
Office of Economic Development

For questions please contact Chris Burton, Business Development Manager, at (408) 535-8114.

Attachment