FALL 2020

CHAPTER 1

PROFILES IN MANUFACTURING 1

By: Erica Bartlett

INTRODUCTION

The dramatic impact of 20th century industrial abandonment across the United States is well-documented. That history belies an important, contemporary reality: in the (now second) largest manufacturing economy in the world (Hoelzel & Leigh, 2012) industrial retention remains a vital ingredient for many urban centers. Proponents arguing for a closer examination and support of urban manufacturing posit that these businesses offer cities many opportunities for prosperous, equitable, and sustainable futures. Such futures rely on supporting economic mobility for all residents while developing awareness of the connections between our consumption patterns, transportation, and land use.

INTRODUCTION (CONTINUED)

In part as a response to de-industrialization in the mid-20th century and in part as a response to the growing shift to re-urbanize, select tenets of Smart Growth and Transit-Oriented Development have had significant influence on urban and economic development planning, coinciding with the desire to attract a specific, high-tech, creative class (Chapple & Loukaitou-Sideris 2019b; Hoelzel & Leigh, 2012; Peck, 2005). Strategies have centered on recruiting innovation and design processes, while overlooking production as necessary to a resilient, diversified economy (Brown & Greenbaum, 2017). This narrow scope falls short in building an economy that creates a spectrum of opportunity for residents (Doussard et al., 2016). It also fails to protect residents from exclusion and displacement in the restructuring process, further exacerbating structural inequities threatening the city's population (Curran, 2007; Hum, 2012).

An issue brief from the Pratt Center for Community Development proposes that "A new consensus has emerged that a vibrant manufacturing sector is critical to our nation's efforts to strengthen and expand the middle class and to maintain our economic competitiveness." (nd, p.1). The brief describes how cities like Chicago, Los Angeles, and San Francisco, which have previously focused on capturing the high-paying jobs offered by design and engineering, are now turning their sights toward the national shift to support manufacturing. Cities are recognizing the value of how manufacturing can reinforce economic resilience and mobility. They are preparing to meet a growing demand for innovative production processes with competitive technologies and to partake in a national export strategy (Giloth, 2012). The path towards an equitable, sustainable, urban economic mix that includes manufacturing is simply too beneficial to overlook (Figure 1).

The stigmas of manufacturing – dirty, dangerous jobs and polluting smokestacks - are persistent and inaccurate (Giloth, 2012; Hoelzel & Leigh, 2012). Misperceptions have led us to overlook many realities of a consumer society. American households rely daily on manufactured goods, from the home to the public realm, and have a responsibility to steward those processes. The international and localized "interdependencies among firms...buying selling, innovating, sharing talent" creates a "dense network of relationships among manufacturers" (Giloth, 2012, p.9) in which any displacement sends a ripple effect throughout the system. It is difficult to advance an informed, regional debate about what will make the future more environmentally sustainable without understanding the connection between land use, urban economies and manufacturing.

Land use practices that decouple design from production and convert highly attractive industrial space for residential and office use threaten the clustering activities necessary to the manufacturing sector's success (Doussard et al., 2016; Giloth, 2012), further hindering firms' ability to reach their full potential in urban environments that offer significant benefits for production. Shrinking industrial land inventory and displacement of manufacturing businesses decreases the number of high-wage jobs, creating a "bifurcated labor market that leaves little room for middle-skilled/ middle-class jobs" (Davis & Renski, 2020).

As an established port-industrial city, Tacoma is well-positioned to advance many opportunities in partnership with manufacturing. Washington's Maritime Blue Initiative (Washington State Department of Commerce, 2019) and Puget Sound Regional Council's (PSRC) Amazing Place (Puget Sound Regional Council, 2017) outline key export industries that rely on manufacturing (Figure 2). Tacoma has been recognized as an Etsy Maker City and established a Tacoma Made initiative to focus on scaling local, small scale manufacturers (City of Tacoma, 2017). And an existing, informal industrial reuse economy that offers many shared benefits has also been identified, with interest growing statewide to make that more robust through centralized leadership (Goodwin, 2019).

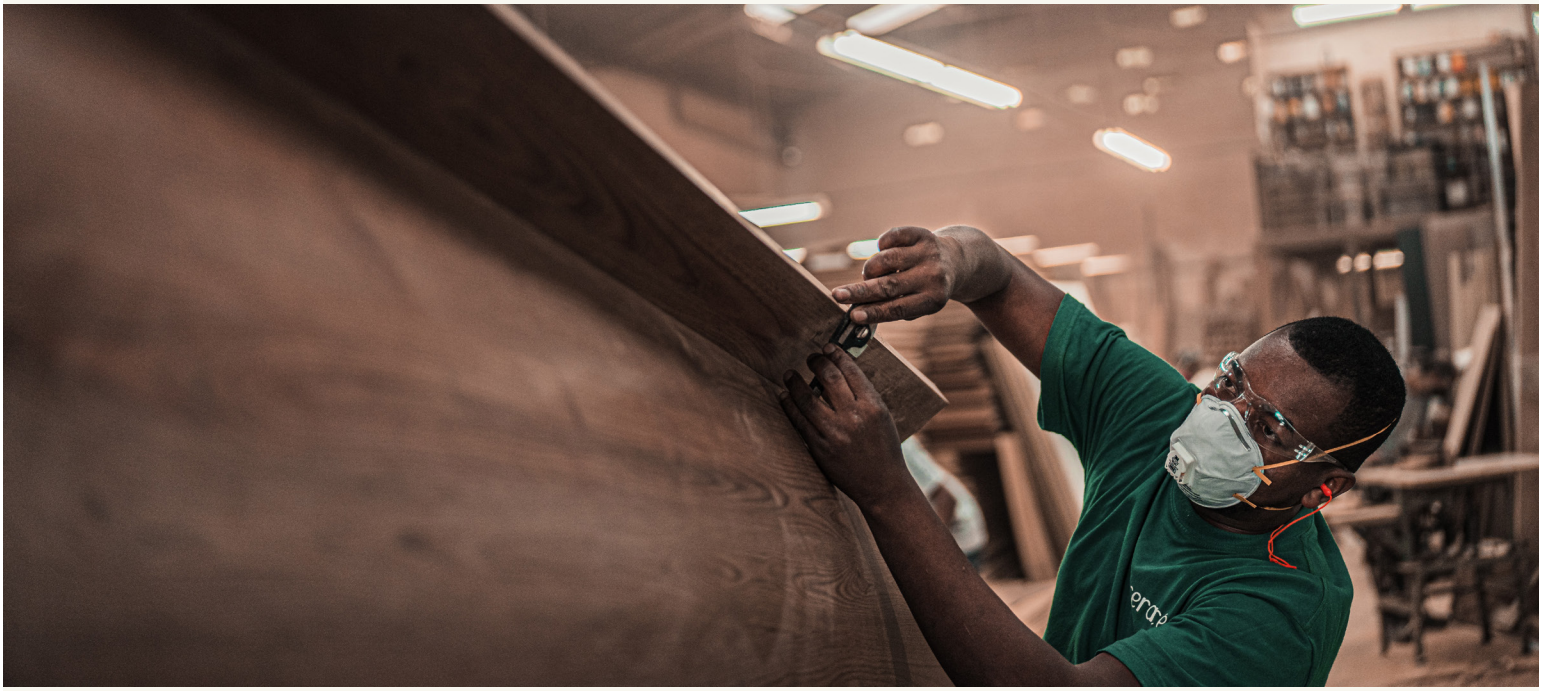


Figure 1. Manufacturing increases the diversity of career paths available to the city's residents. (Photo credit: Cleyder Duque/Pexels)

Onshoring, job growth, innovation, and environmental and economic sustainability, are long-term development visions. In the short term, it is necessary to question whether the tradeoffs of traditional transit-oriented development – namely, commercial and residential displacement (Chapple & Loukaitou-Sideris, 2019b, 2019a; Curran, 2007; Hoelzel & Leigh, 2012; Lester et al., 2013) - will move us closer to the long-term goals. Manufacturers have been left out of TOD and Smart Growth planning conversations, both locally and nationally (Leigh & Hoelzel, 2012). The omission has prevented a clear evaluation of the potential benefits of integrating modern production processes with mixed-use districts. It is imperative that we examine the manufacturer's perspective to make this evaluation.

To expand prior definitions of TOD and Smart Growth to a new phase of city-building which embraces manufacturing's processes and people - a strategy for "Transit Oriented Manufacturing" (TOM) (Dierwechter and Pendras 2020)– we need a clear image of Tacoma's manufacturing perspectives. This chapter engages manufacturers as stakeholders in transit planning to reveal the "intertwined destiny of older industrial cities and the manufacturing sector" (Giloth, 2012,); balancing the sector's unique needs for land use, workforce development, and transportation with the promise of an equitable, sustainable, and innovative city future (Christopherson, 2012; Leigh & Hoelzel, 2012; Renne, 2018). This research challenges stigmas that have caused active city-builders at all levels to overlook the sector's vital role in preventing displacement (Davis & Renski, 2020) and to instead consider preserving land in Tacoma's Manufacturing/Industrial Centers (MICs) (Tacoma Manufacturing / Industrial Centers Shape Map | Results 253, 2019) as a part of shared visions for equitable participation in a livable economy (City of Tacoma, 2015).

PIERCE COUNTY MANUFACTURING DATA

GATHERING PERSPECTIVES FROM TACOMA'S MANUFACTURERS

Stakeholder input was gathered through hour-long, semi-structured interviews using the teleconferencing platform, Zoom. A full list of interview subjects and questions is included (Appendix A). Interview subjects fall into two groups:

1. SMALL- TO MID-SIZE MANUFACTURERS

Economic geographer Susan Christopherson (2012) cites the importance of supporting firms at this scale in order to fully realize the opportunities presented by onshoring in the United States. She points to the importance of their role in supply chains desired by manufacturing businesses looking to expand or relocate in a region. Small scale businesses categorized as "makers" are also attributed with high potential for participating in larger-scale manufacturing innovation (Wolf-Powers et al., 2016). Subjects in this group were selected through a combination of snowball sampling and whether the business had some marketing visibility, i.e. an active website with contact information, and if they exemplified themes such as expansion, environmental sustainability, or Tacoma innovators who have been in operation for multiple generations.

2. MANUFACTURING BUSINESS ADVOCATES AND INTERMEDIARIES

Intermediaries are an important source for private sector perspectives as these organizations have established relationships through Business Retention and Expansion (BRE) programs. Originating in the manufacturing sector and now widely used to support many industries (Morse, 1990), BRE programs are collaborative efforts that combine company visits with technical assistance to achieve the following (Lee & Meyer, 2010):

- Increase firm efficiency
- Improve public relations between local government and local businesses
- Improve the community's quality of life
- Offer subsidies for the retention and expansion of firms
- Influence the retention and expansion of state and federal facilities
- Create an early-warning system for plant contractions, closings, and re-locations, and
- Design an overall long-term economic development strategy.

Using prior research as a starting point for inductive coding, the analysis reviews interview data for recurring themes. As different patterns and connections emerged, data points and adapted codes were reorganized to better describe shared stories, resulting in seven core themes. An analysis is presented here, followed by three profiles that highlight salient points from interviews. The chapter concludes with a case study examining the role of local, state, and national support to an expansion project in the historic Nalley Valley.

THEMATIC ANALYSIS OF INTERVIEWS

1) NETWORKS & COMMUNITY

Discussions revealed that a rich, multi-directional network of relationships and connections are foundational to the sector's long-term success. Manufacturers rely on the proximity of nearby support businesses and raw material vendors. Complimentary industries strengthen the market for a company's produced goods, adding value to larger supply chains. Small-scale manufacturers have more influence and visibility as a community than as a solitary business.

Tacoma's manufacturers contribute significantly to the community's workforce development efforts. They participate in apprenticeship programs, allowing people to earn while they learn, and collaborate with schools on training programs. These businesses, even smaller firms, also invest in the community through volunteer hours and other philanthropic measures.

As one informant noted:

"How do you quantify all of the intangible benefits...the community support and the community involvement? My feeling is that they're more likely to give back to the community and [create] living wage jobs because they believe in the community, because they're a part of it."

An established network of support agencies assists local manufacturers in expansion, but the perception is that businesses either have to be at a later-stage to get the help they need or they have to pay-to-play. ***Besides Spaceworks, formal infrastructure (technical assistance, legal support, funding, etc.) for small-scale producers is absent.***

2) INFRASTRUCTURE & ECONOMIC DEVELOPMENT PLANNING

Tacoma's manufacturers enjoy the competitive advantages of publicly owned utilities and rail, and access to existing air, land, and sea logistics infrastructure. The city offers proximity to local markets and access to markets in Alaska and Asia. While their contributions through B&O taxes and permitting costs are substantial, many feel slighted on investment in maintaining industrial areas. ***They would like to see the same energy in attracting investment to the MICs that has been put into downtown and the Tacoma Mall subarea.***

Subjects expressed that they welcome additional transit options as a means for investing in station areas while pointing out that equitable transportation options are vital to equitable work opportunities. For instance, an employer in the port who works with a reentry program notes that once the initial transportation privileges offered by the service provider ends, they struggle to retain the employee. ***Lack of transportation options in the port is a significant barrier to employee retention and equitable access to opportunity.***

Informants emphasized repeatedly that these jobs are valuable to an equitable, local economy. Career paths have a low barrier for entry, opportunities to upskill, and pay good wages. Several individuals posed the question of how we would replace the thousands of jobs lost and what sector will offer those same benefits should manufacturers be displaced by land conversion processes.

A tension was noted where transit expansion aligns with the creative class to make station areas more attractive to wealthier, future residents, decreasing affordability for existing manufacturers and makers. The Dome District was identified as being vulnerable to that pattern.

THEMATIC ANALYSIS OF INTERVIEWS (CONTINUED)

Several subjects indicated that Tacoma is limited in the opportunity for shared manufacturing space. Shared equipment opportunities allow for launching and growing production businesses. Discussions revealed the need for a food manufacturing business incubator and a publicly accessible, advanced manufacturing labs like the one at Bates Technical College.

3) LAND USE

Both Tacoma's deep-water port and flat topography in the port and in Nalley Valley are conducive to manufacturing activities. While residential encroachment is a perceived threat for political and cultural reasons, many interview subjects pointed out light manufacturing can easily exist in mixed use settings with minimum impact.

Innovation spaces, where multiple, small-scale designers work out of the same space, are seen as an opportunity; however, it was expressed that they should not take up the valuable, short supply of existing manufacturing land.

The hardware is as necessary to the innovation cycle as the software:

"You know, the innovation warehouse space where there's 20 businesses in one little space. Well that's great and all… but they still have to deal with manufacturing at some point. You can innovate, but then you've got to go somewhere. You don't want to innovate and have to move someplace else."

The amount of land necessary for manufactures is larger – things like storage and waste stabilization ponds, which filter wastewater, take up a lot of room. Land is not only scarce; Tacoma's manufacturers are finding it difficult to pay the higher premium for leases that marijuana and e-commerce businesses can afford. There is a desire to purchase and redevelop existing vacant properties but the cost of brownfield clean-up is a barrier.

4) THE POLITICAL ENVIRONMENT

Many participants noted that local regulations, permitting processes, and tax structures limit the possibility for expansion and innovations like the industrial reuse economy. Many feel that the hostility of the political environment lengthens permitting times – increasing the risk and cost of expansion projects necessary to onshoring equipment or expanding production. They often feel it is cheaper to maintain than to grow and that current systems fail to weigh the cost and benefits of policies, stifling both environmentally sound practices and innovation. For example, one business was written up for releasing zinc in the water due to the runoff from their roof. Unable to afford a new roof, the business shut down and the roof is still leaking. More appropriate regulatory tools and incentives may be created to enable manufacturers to succeed.

The City's microloan program was cited as a successful intervention to support small-scale producers. Several subjects stated that small-scale makers struggle to be seen as viable and access the support that they need to grow. ***The limited definitions of manufacturing businesses, in particular that NAICS codes do not accurately categorize production, makes it difficult to quantify or track many business' activities, as well as their contribution to the economy.*** Subjects expressed the need to define and quantify production in all forms, then create trends and forecasts for those sectors.

Tacoma's manufacturers do not feel actively engaged in planning processes and feel edged out of conversations by residents. An intermediary referenced a business owner from the port who was chased out of a neighborhood council meeting. Although they are supportive of transportation investment, they do not feel considered in the political process. Lines are drawn through parcels, but the businesses are not informed. Subjects expressed the need for a level of involvement that would better prepare them to make long-term plans.

5) CULTURE

Tacoma has a long history of manufacturing. Subjects expressed pride in the city's blue-collar legacy and strong work ethic. The sense of place contributes to their ongoing success.

They feel that shifts in consumer purchasing patterns shape our expectations for prices that are not reasonable when taking into account the cost to make a product. Local manufacturers want us to know what goes into the production process and value it. They feel that our disconnection prevents us from making informed purchases and stifles potential job creation.

As one informant put it:

"The general public, they don't think of manufacturing. They think of where they're going to order pizza, get a beer, or you know, that type of support…where they can go to Target or one of the stores and buy what they need, not necessarily where it's manufactured. And that's what I'm seeing as a trend. That those are the types of jobs that are more available as opposed to manufacturing."

6) SUSTAINABILITY

The value of urban manufacturing is two-fold. It provides equitable, diverse, employment opportunities to the city's residents. These jobs offer a low barrier for entry and a career with opportunities to upskill. Employers benefit from a large, talented workforce. They desire livability and affordability for their employees. By displacing these businesses, thousands of jobs will be lost as well as significant city revenues.

In terms of environmental legacy, the majority are fully aware of their responsibility as stewards and willing to cooperate with the region's environmental watch groups. Several intermediaries noted that are few manufacturers operating who aren't actively aware of and monitoring their impact. It is felt that opposing residents fail to take the full cost and benefit into account when making demands. For instance, policies like limiting the hours that trucks can come and go ends up creating more pollution as the trucks idle in traffic.

Tacoma's manufacturers are also voluntarily incorporating environmentally sound practices. They are investing in expensive equipment updates, like thermal oxidizers that ensure only steam is released from their smokestacks, and devoting land to stormwater ponds. They have organized an informal, industrial reuse economy and support the centralization of those activities. Processes are greener and jobs are safer than they were in the past. An intermediary pointed out that perceptions about sustainability are incomplete. People want solar panel manufacturing, but do not realize how invasive the production process is. Even green manufacturing can appear dirty at first sight, it is important to understand the role that business plays in the greater supply chain.

THEMATIC ANALYSIS OF INTERVIEWS (CONTINUED)

7) COLLABORATION AND COOPERATION

Local manufacturers see themselves as an integral part of Tacoma's past, present and future. Aspirations that were shared had an underlying theme of collaboration. They take pride in supporting workforce development efforts, mentoring other business owners, and in ensuring a good quality of life for their employees. They support win-win solutions like equipment sharing and the industrial waste economy.

But they expressed concern by the lack of preparation for opportunities like the Maritime Blue initiative and automation. We would improve our readiness with the advance creation of two or three potential projects that could be used to seek grants and attract investment.

Several subjects spoke to the importance of advancing the Tacoma Made initiative. Small-scale manufacturers struggle to be seen as viable and would benefit by the increased exposure to all things made in Tacoma.

While they would like to be engaged with decisions that impact their long-term viability, small- and mid-size manufacturers do not have the dedicated personnel that larger firms often have. Their doors are open, though, and they welcome outreach in any form. Intermediaries made suggestions like hosting targeted events or including "Tacoma" and "Manufacturing Business" in email subject lines to indicate that the information is useful for the business. Courtesy is important. They are unable to drop everything at a moment's notice, so advance notice of in-person visits is preferred.

PROFILE:

THE ART OF CRUNCH

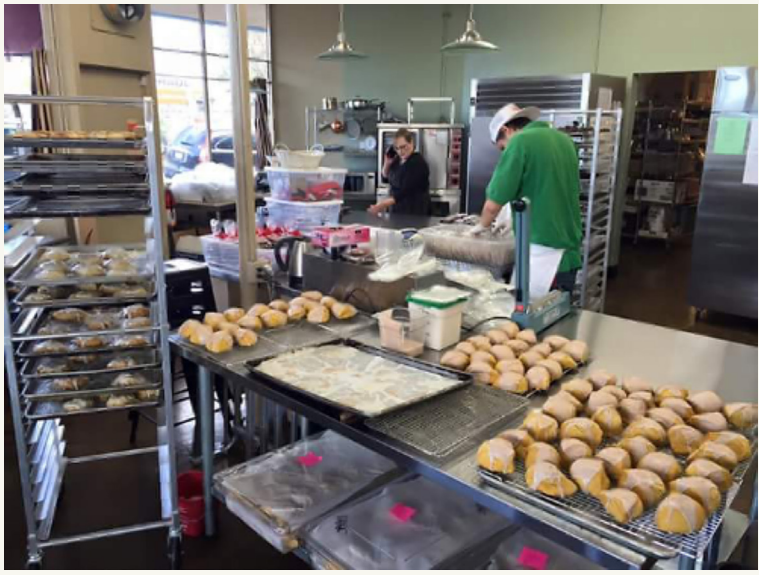
Many manufactured goods that are produced in largely innocuous conditions –food, for example--easily coexist with, even complement, traditional retail and residential uses in Tacoma.

After taking home a blue ribbon from the Washington State Fair for her biscotti ten years ago, Rhonda Hamlin decided to launch a business. For Hamlin, a single mom with two children, the venture would offer additional stability for her family while allowing her to thrive in the culinary community. Her biscotti and other treats are wholesaled to as many as 30 locations, from North Seattle to Bonney Lake and Gig Harbor, and are also available online. She has five part-time employees.

> ***Hamlin sees an opportunity in the shortage of spaces. She and a partner have ambitions of establishing a food incubator in Tacoma; a place where businesses could not only access affordable commercial kitchen space, but also accelerate their businesses with a network of mentors.***

The Art of Crunch operates from a commissary kitchen located at 6th and South Oxford Street. The Gourmet Niche supports around 20 other food businesses, including three food carts that carry her products. All preparation and packaging is completed there. These spaces are in high demand in Tacoma, where there are a lot of aspiring food businesses and a shortage of commercial kitchen space. Urban centers offer many advantages for food businesses, including diverse supplier options and proximity to a large customer base.

Hamlin sees an opportunity in the shortage of spaces. She and a partner have ambitions of establishing a food incubator in Tacoma; a place where businesses could not only access affordable commercial kitchen space, but also accelerate their businesses with a network of mentors. An example she pointed to, the Union Kitchen in Washington, DC, has worked with over 500 businesses, created over $250 million of revenue collectively, while opening over 50 storefronts and creating well over 1,000 jobs. Of the companies supported, over 50% are woman- and/or minority-owned (Union Kitchen, ND).



Food manufacturing, including packaging, is completed at the Gourmet Niche commissary kitchen on 6th Avenue. Credit: The Art of Crunch

The vision would allow her and other experienced business owners mentor those who are just starting out. “I would love to be able to reach out to the Rhonda eight years ago, take her by the hand, and say ‘Hey, let’s do it this way. This is how to do it.’ Because I have [learned from] the school of hard knocks, the whole way.”

PROFILE:

FEED COMMODITIES

"Bakeries' by-product? We like to think of it as bakeries for the bovine and their brethren." (Feed Commodities, n.d.)

Feed Commodities, located just off Portland Avenue, is in its 22nd year of operations in Tacoma's Tideflats. The firm purchases surplus from food manufacturers like bakeries and breweries then recycles it into livestock feed for farmers in Eastern Washington and, more recently, Southeast Asia. Their location offers a nexus of existing transportation infrastructure necessary to Feed Commodities' production and distribution channels.

> ***"Years ago we had...this community of businesses down here and what we were doing is we were working together, say hey look, I've got this kind of equipment, I run it this long...to be able to leverage those assets amongst ourselves so I don't go out and buy the same piece o equipment, the guy down the road has if he's not using it all the time."***

Both a recycler and manufacturer, Feed Commodities diverts as much as 6000 tons of food by-products from landfills each month, removing 10,341,905.20 kilograms of greenhouse gases from the atmosphere. According to one source, that is the equivalent of 923,384.39 days of electricity for one household (Watch My Waste, ND). By converting that waste into livestock feed, the process lessens demand on supply chain resources - water, land, and labor – that would be used to grow new feed (Teras & Mikkola, ND).

Feed Commodities' success illustrates how industrial reuse strengthens regional economies while lessening the harms of systems we rely on each day. Synergistic benefits are dependent on clustering manufacturing processes or, at least, ensuring the processes are networked by road and maritime logistics as they are in urban settings.

Grain-based by-products are converted into feed for livestock in Tacoma, Washington. Credit: Feed Commodities

President and CEO Jim Seley also sees opportunity in reviving the practice of equipment sharing between Tacoma's manufacturers. "Years ago we had...this community of businesses down here and what we were doing is we were working together, say hey look, I've got this kind of equipment, I run it this long...to be able to leverage those assets amongst ourselves so I don't go out and buy the same piece o equipment, the guy down the road has if he's not using it all the time." A cooperation at that level has the potential to further localize manufacturing processes; thereby reducing transportation burden created by moving materials offsite at different stages of production.

PROFILE:

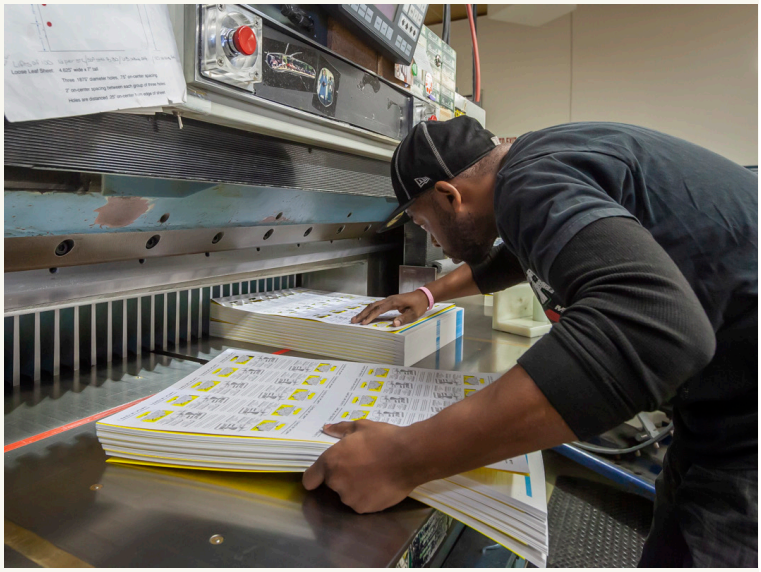
RITE IN THE RAIN

From a 30,000 square foot plant just outside Tacoma's city limits, Rite in the Rain manufactures proprietary, weather resistant notebooks that stand up in the toughest, wettest conditions. The technology was developed in the early 1900s as a solution for the logging industry and has stayed in place ever since - an exemplary of homegrown innovation being perfected in place (Powers, 2012). The ability to expand production as the business scaled over the last 100 years ensured staying power. After setting up in a shared space with Tacoma Printing and Binding Co, inventors Jerry and Mary Darling moved operations to his neighborhood in Browns Point until 1965 when, with the help of a partner, they were able to acquire property in the port.

Rite in the Rain selected their current, Fife location because it provided enough space to evolve the technology into something more efficient and environmentally friendly. By 2000, they had transitioned from a solvent-based manufacturing

Rite in the Rain selected their current, Fife location because it provided enough space to evolve the technology into something more efficient and environmentally friendly. By 2000, they had transitioned from a solvent-based manufacturing facility to being totally water-based, which also means zero-chemical emissions.

facility to being totally water-based, which also means zero-chemical emissions. They also shifted to using soy-based inks in the printing process. New owners undertook a significant industrial recycling program for off-cuts, used print plates and processing liquids. Changes to the international recycling industry have recently made such programs more costly and complicated for US manufacturers. Quality Control and R&D Director John Mattingly says he is hopeful that someday



An employee feeds stacks of coated paper into a notebook cutting machine. Credit: South Sound Business Journal

the system will be repaired; in the meantime, the company remains committed to organizing the production process around sorted materials.

The choice to stay in or near Tacoma has been intentional. Mattingly cites the benefits of clustering with other manufacturers and the suppliers who sustain them, the city's blue-collar culture and affordability for their 60 employees. Acknowledging the view that production is a bygone, dirty process, Director of Marketing Ryan McDonald says "We're a decent sized manufacturer, but we're in no way a business that can't thrive within, you know, walking distance to residential areas. Absolutely." Rite in the Rain has a bright future with hopes to expand into an additional 20,000 square feet. If they had the choice, their next move would be to Nalley Valley.

CASE STUDY:

TOOL GAUGE'S EXPANSION IN TACOMA

The spirit of cooperation between firms and intermediary partners offers support to achieving a company's vision for continuing success. These partnerships also play an important role in expanding the national Smart Growth agenda to include planning for urban industry (Leigh & Hoelzel, 2012, p.100). This case study will examine how public-private collaboration guided the expansion of an innovative, Tacoma-grown manufacturer.

COMPANY DESCRIPTION

Tool Gauge fabricates and supplies custom metal and plastic parts to original equipment makers (OEM) in the aerospace industry out of Tacoma's historic Nalley Valley. Tool Gauge stood out to partners at Impact Washington, the Economic Development Board for Tacoma-Pierce County, and the City of Tacoma for several reasons. The first was a hard-earned reputation for quality among lead customers like Boeing. The second was that they put their employees first. Finally, the family-owned company has a culture of tenacity that has rooted them in the area for over 60 years.

> ***The Economic Development Board for Tacoma-Pierce County (EDB) and Impact Washington, a nonprofit that supports manufacturers throughout Washington, aided Tool Gauge in the application process for the Washington State Department of Commerce's Working Washington grant.***

VISION + CHALLENGE STATEMENT

At the 2017 Aircraft Interiors Expo in Hamburg, Germany, company leadership announced a major expansion to Tool Gauge's facility. This expansion would result in a state-of-the-art fabrication facility designed for cobotics, or collaborative robotics,

Apprentice Raquel Taijito operates a five-axis computer numerical controlled (CNC) machine. Credit: Aerospace Joint Apprenticeship Committee (AJAC)

and additional full-time employees. Retooling Tool Gauge's workforce and strengthening the apprenticeship program were among the top priorities for the expansion project.

Manufacturing apprenticeships offer important opportunity paths for local talent like Raquel Taijito, a Stadium High School student who graduated in 2019 with journey-level certification after two years of employment with Tool Gauge (Ferrell & McKay, 2019). At the time of the announcement, Tool Gauge was powered by 125 full- and part-time employees. The expansion would enable growth to 235 full-time employees.

The new facility also offers a customer lobby with an exhibit of the company's history, additional office and conference space, and the installation of 19 additional machines from Austria and

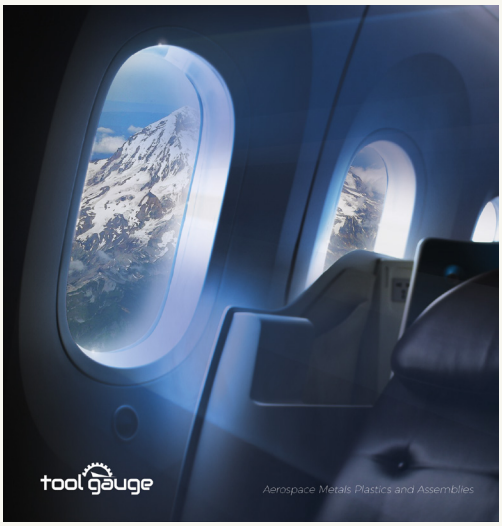
South Korea (McIntosh, 2020). The plan was to double the facility's footprint from 49,000 square feet to around 94,000. The adjacent property, however, was owned by Sound Transit and despite numerous attempts at negotiation, long-term lease was not an option. Fortunately, plans were reconfigured, allowing the expansion to proceed.

SOLUTIONS, AGENCIES + SUPPORT ROLES

Due to tight schedules, the sense of urgency and the production schedules manufacturers run on, community engagement can become a lower priority. A collaborative, public-private network is necessary to performing outreach, ensuring that manufacturers know what resources and opportunities are available to support their continued success. In the case of Tool Gauge, this network allowed leadership to be engaged on multiple fronts with local, state and federal partners.

The Economic Development Board for Tacoma-Pierce County (EDB) and Impact Washington, a nonprofit that supports manufacturers throughout Washington, aided Tool Gauge in the application process for the Washington State Department of Commerce's Working Washington grant. A $125,000 grant was awarded, and the EDB with Impact Washington delivered a comprehensive instructional program to the growing employee base in Lean Enterprise and leadership skills.

To further integration of Lean Enterprise and leadership training into the Tool Gauge's organization following the completion of the successful Working Washington grant, an application for a Job Skills Program (JSP) grant was made and $123,420 was awarded. JSP awards are workforce training grants administered by the State Board of Community and Technical Colleges (SBCTC). In this instance, the grant was administered by Invista Performance Solutions, a collaborative of four local community colleges. Separate though no less important, the



Aerospace Joint Action Committee, statewide, nonprofit aerospace and advanced manufacturing registered apprenticeship program, was also integral.

In addition to assisting with site selection, support is available to ensure that risks are minimized to bring a relocation or expansion project to completion. The city's Planning and Development Services manages lots of building permits, so projects are sometimes assigned a lead in Community and Economic Development. This ombudsman helps to ensure that any challenges in the development process are worked through creatively and quickly.

Public-private partnerships have significant impact, bringing jobs and more opportunities to the city's residents. Washington has a national reputation for accountability; the state has been noted for its tight scrutiny and careful stewardship of public assets like workforce grants and tax incentives (Corporation for Enterprise Development, 2002). Localized economic development intermediaries assist with vetting projects to ensure that public investment is used wisely to expand opportunities for Pierce County's residents.

CONCLUSION

The input gathered during interviews substantiates prior research on the value of manufacturing in urban centers. Land conversion is a viable threat as these businesses rely on a dense fabric of small- and mid-size firms in the overall supply chain. Stigmas surrounding the nature of production are no longer valid. Processes are safer and cleaner than in the past, increasing the viability of industry careers. Manufacturers take pride in the places they operate and are eager to be a part of the community's success. They invest in workforce development and desire a high quality of life for their employees.

Researchers have noted the omission of manufacturer's voices from TOD and Smart Growth planning. Firms sense that they are missing important conversations and would like to be a part of them. Bringing their perspectives to long-range planning processes benefits the community by addressing issues with more comprehensive solutions. Increased visibility and awareness also help small- and mid-size production businesses, whose success is necessary to the innovation cycle.

By examining the role manufacturers will play in initiatives like Washington Maritime Blue, PSRC's Amazing Place, Tacoma Made and industrial reuse, we can be better prepared to advance opportunities in onshoring, automation, and innovation for the city's residents.

By examining the role manufacturers will play in initiatives like Washington Maritime Blue, PSRC's Amazing Place, Tacoma Made and industrial reuse, we can be better prepared to advance opportunities in onshoring, automation, and innovation for the city's residents. Inviting them to the process can reveal any shortcomings of current regulatory frameworks and incentives, then advance those messages to state and national agencies to ensure tools are designed for mutual success.

APPENDIX A

This research was made possible by the following, who generously shared their insight and time.

Pat Beard,
*Business Development Manager**
City of Tacoma Community and Economic Development

Gloria Fletcher,
Business Development Manager
City of Tacoma Community and Economic Development

Rhonda Hamlin,
Founder
The Art of Crunch

Gwen Kohl,
Co-Founder
Money Moxy

Geoff Lawrence,
*Account Executive for the South Sound and Peninsula Region**
Impact Washington

John Mattingly,
Quality Control and R&D Director
Rite in the Rain

Ryan McDonald,
Director of Marketing
Rite in the Rain

Maddie Merton,
*Vice President of Business Retention and Expansion***
Tacoma-Pierce County Economic Development Board

Meredith Neal,
Economic Development Manager
City of Puyallup

Jim Seley,
President
Feed Commodities

* These subjects participated in a roundtable discussion on Tool Gauge's expansion and were not individually interviewed.

** Maddie Merton participated in both the roundtable discussion and in an individual interview.

ADDITIONAL ACKNOWLEDGEMENTS:

While data was not included from our conversations, Margo Bergman at the Milgard Center for Business Analytics and Jordan Rash at Sound Transit, also offered their time to this research.

INTERVIEW QUESTIONS

1. What are some of the benefits for manufacturers to operate in Tacoma, especially in an urban center?

2. What are some of the challenges faced by manufacturing businesses in Tacoma?

3. Is there an adequate support system to attract new manufacturing businesses or help existing businesses to expand? Do you see any missed opportunities in this regard?

4. Have you been involved in any of the transportation planning for the Sound Transit Tacoma Dome Link Extension station areas in the Eastside and Dome District? Do you have any comments on that in relation to manufacturing space?

5. What would you like local planners and residents to know about the manufacturing business community in Tacoma?

6. Can you think of any data, research, support programs, or other resources that might help improve the experience of manufacturing or enhance the manufacturing business community in Tacoma?

7. Do you have other contacts you think would be beneficial to speak with?

8. What was the Made in Tacoma project? How did it get started, who was involved, and what is happening with it now? Are you aware of any other similar projects underway in Tacoma?