

Mixed Use Alternatives for Rainer Beach Economic Development:

Low-Impact Production Businesses

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Degree Project Research Context

This project is the first element of a three-part research paper series conducted with students from the University of Washington Evans School of Public Affairs. All three papers addressed economic development in Rainier Beach and were prepared for the City of Seattle Office of Economic Development and the Department of Planning and Development. The second two papers in the series, Andrea Lehner’s “Using Small Business Technical Assistance to Preserve Diversity in Rainier Beach,” and James Michael Bush’s “Community-Based Business Ownership & Investment,” are not included in this document. However, their contribution to the series’ Project Context is included below.

Executive Summary

This paper investigates the potential for low-impact production businesses, such as small printers, craft workshops, custom woodworkers and other custom manufacturers in the Rainier Beach Neighborhood Planning Area. This line of inquiry is in response to a recent Office of Economic Development study, which found that Rainier Valley retail growth potential is limited and that too much land is currently zoned for retail uses. Therefore, the Seattle Department of Planning and Development neighborhood planning team and the Office of Economic Development (OED) requested an assessment of whether the promotion of low-impact production businesses would provide livable wages for Rainier Beach residents without impacting the residential nature of the neighborhood. This research concludes that the neighborhood would benefit from the creation of low-impact production jobs, although the City would have to be actively involved to overcome market-based challenges to this strategy.

This research found that while land use plans often group these businesses with the larger light industrial sector, recent evidence suggests that changes in technology and regulation have made them more compatible with housing and other commercial uses than in the past. Based on a review of land use and economic development theory, an analysis of the built environment and real estate market in Rainier Beach, and case studies of projects in other communities, this paper concludes that the promotion of low-impact production businesses would likely provide the following benefits to the Rainier Beach neighborhood:

Benefits

- *Jobs close to housing.* Providing employment near residents’ housing would allow them to save the time and money that would have been spent commuting. An increase in walking and biking would also have positive effects on air quality.
- *Increased spending power.* An increase in per capita income could help drive the retail growth desired by community members.
- *Economic diversification.* Expanding the types of businesses in the neighborhood would help it weather industry-specific market changes. For example, industrial rents are much less responsive to changes in the market than are office rents.

- *Living wage jobs for people without four-year college degrees or English proficiency.* This is particularly important, as census data indicates the Rainier Beach planning Neighborhood Planning Area has a high percentage of these groups.

However, such a strategy would also have considerable challenges to overcome, including the following:

Challenges

- *Unaffordable commercial rents.* While Rainier Beach offers rents lower than other parts of Seattle, it has higher average commercial rents than many low-impact production users can pay. Production-oriented businesses can find cheap rents – and protection from residential complaints - in the Ballard and Duwamish Manufacturing and Industrial Centers (MICs) and industrial areas south of Seattle.
- *Lack of market attractiveness.* Rainier Beach has several positive assets for businesses, including easy access to I-5, a light rail station, nearby workforce training centers, cultural diversity, and others. However, other neighborhoods would be more appealing to investors, developers, and business owners due to greater proximity to customer bases such as downtown Seattle, and industrial assets such as SeaTac airport, established production and industrial service businesses. Rainier Beach currently has little appropriate stock to support the growth of low-impact production without new investment.
- *Unclear congruity with city policy.* The Seattle Comprehensive Plan’s Residential Urban Village policy directs City staff’s focus towards retail and residential development in Rainier Beach, while City industrial policy directs industrial development to the MICs. Neither policy would rule out the establishment of low-impact production businesses in Rainier Beach; Residential Urban Village designation allows for commercial growth, the Comprehensive Plan calls for a diversity of job opportunities, and the MICs are primarily intended to separate *high*-impact industries. However, because of the grey area into which these businesses fall (not quite retail, not quite industry), the demands of city-wide priorities, and the other drawbacks discussed here, City staff may be unwilling to pursue this approach.
- *Zoning restrictions.* Zoning in the Neighborhood Planning Area favors retail development, through the imposition of height restrictions, use restrictions, and design requirements.
- *Increased noise, odor, light, or traffic effects.* While successful low-impact production businesses would create jobs for the neighborhood, they would also create greater noise, traffic, and potentially more light and odors than exist today. Thus, if the community believes the impacts outweigh the economic benefits to the neighborhood, they will pressure the businesses to relocate.

These factors pose a serious challenge to promoting production-based businesses. However, there are a number of actions the City should take to promote this business growth while ensuring neighborhood compatibility. These include the following actions.

Recommendations

- *Leverage the neighborhood planning process to develop compatibility standards.* The planning process provides the opportunity to determine what tradeoffs the community is willing to make for economic development, such as tolerable daytime and nighttime noise levels, street frontage appearance, and building height. This information can be translated into performance-based zoning regulations and neighborhood design standards. The formulation of these community standards can also lead to the creation of a neighborhood group to oversee enforcement of the standards. These standards do not have to apply uniformly to the entire Rainier Beach neighborhood; different types of development standards and businesses will be appropriate in the Rainier Avenue corridor, the commercial core, and the station area.

The planning process also provides the opportunity to develop a better understanding of the community members' skills and employment opportunities. This information can be used to target and attract employers, identify gaps to be addressed with workforce skill development, and identify potential entrepreneurs.

The City can improve its chance of success by *providing tangible examples of development options for residents to evaluate*, and *creating a better label for low-impact production jobs*. In order for residents to make decisions about their neighborhoods future, they need to know how small low-impact production businesses would look and feel, without envisioning inaccurate images of "smokestack" industry.

- *Market the Rainier Beach's assets to attract low-impact production businesses.* Using the standards developed by the neighborhood, the City can seek out developers, established businesses, and start-up entrepreneurs to locate in Rainier Beach. The City can publicize the neighborhood's proximity to I-5, its convenient location between downtown Seattle and SeaTac airport, its diverse workforce, and its other assets. The City should *target outreach towards businesses that manufacture niche, high-value added products with short production runs*, which tend to offer better wages.
- *Encourage the construction of neighborhood compatible production facilities.* The City can require site design that minimizes the impact of freight deliveries, and encourage attractive designs by publishing design expectations and/or pre-approved designs, promoting the demand for home furnishing production businesses with retail components, and changing the zoning code to promote higher first floor ceilings and attractive frontages.
- *Promote mixed use compatibility by creating "nuisance disclosures."* By having residents of mixed use projects sign acknowledgements of the presence and importance of non-residential uses, some degree of conflict may be avoided.
- *Create policy to support low-impact production businesses in Rainier Beach.* The City can support the growth of low-impact production businesses by *creating preferential purchasing, directing New Market Tax Credits and other tax credits*, and *directing workforce development* to support Rainier Beach production businesses.

- *Attract a non-profit anchor.* A non-profit partner can offer below market rents and offer technical assistance to small businesses, provide a single point of contact for managing neighborhood compatibility, and provide some of the commercial clustering synergy which is currently not present.

Further Research

Additionally, the City can take the following next steps to better focus its efforts:

- *Develop a better understanding of the dynamics of the MIC.* This research uncovered conflicting information regarding the advantages and disadvantages of locating low-impact businesses outside of the Manufacturing and Industrial Zone.
- *Develop a better understanding of neighborhood skills.* Information on specific skills held by neighborhood residents was not readily available. The City can use the planning process and work with economic development and workforce training organizations to better understand the neighborhood's skills and skill gaps.
- *Develop a better understanding of low-impact production businesses.* While the City has already conducted research on the greater light industrial sector, it could benefit from specifically interviewing more operators of small low-impact production businesses. This would create a better understanding of the businesses' needs. Additionally, a review of B&O and other data would create a better understanding of the regional demand for specific business types.

In addition to the elements discussed above, this paper includes examples of production facilities, and several case studies, which describe Rainier Beach's Alpha Cine relocation from downtown Seattle; Georgetown's Essential Baking relocation from Fremont; Jamaica Plain, Massachusetts' Brewery complex, a conversion of a residentially-located industrial brewery into an incubator for woodworking and food preparation businesses; San Francisco, California's Production, Distribution, and Repair planning analysis; San Francisco, California's La Cocina, a small non-profit food preparation incubator in a residential neighborhood; Boulder, Colorado's Steel Yards, a mixed use development combining housing, retail, and industrial service; and Oakland, California's proposed Mandela Grand, a large mixed-use project in an industrial zone.

Project Context

Purpose

The City of Seattle Department of Planning and Development (DPD), in cooperation with the city's Office of Economic Development (OED), have partnered with the public service clinic at the University of Washington, Evans School of Public Affairs to evaluate potential approaches to economic development for the Rainier Beach neighborhood. At a January, 2010 community meeting in Rainier Beach, the residents emphasized the need for more jobs that match existing community skill sets. Rainier Beach stakeholders (identified as residents, businesses, non-profits, community development entities, and municipal representatives) will begin updating their neighborhood plan this year. The purpose of this report is to provide these stakeholders with information on economic development strategies they may wish to consider as components of the Rainier Beach neighborhood plan. The recommendations in this report are to inform the stakeholders updating the neighborhood plan, and are not meant to be the only economic development strategies to be considered by the City, its partners, or the neighborhood.

Vision

The research and recommendations in each of the three strategic approaches explored in this report are guided by a vision for the community based on values and goals Rainier Beach stakeholders have expressed. In the current Rainier Beach Neighborhood Plan (created in 1999), stakeholders identified their vision for the future:

*"The Rainier Beach community wants to become a pleasant and safe neighborhood. Bringing this about is our challenge and responsibility. The attributes of our area, its diversity and natural beauty, need to be sustained. By setting forth a positive resident- and business- friendly image, we can create an enjoyable, affordable, and prosperous community."*¹

While this vision may be updated during the neighborhood planning process that is to begin this year, the economic development approaches studied in this report are meant to echo the values reflected in this vision by the Rainier Beach community including maintaining the diversity of the neighborhood.

The guiding vision for all three strategic approaches in this report is a:

Culturally diverse and prosperous Rainier Beach where sustainable community economic development approaches foster local new and growing businesses and expand employment opportunities for residents.

¹ "Rainier Beach 2014: A Plan for a Sustainable Future." City of Seattle, March 1999. <http://www.seattle.gov/neighborhoods/np/plans/RBCH/Section3.pdf> Accessed on February 25, 2010. Page 31.

Demographic Context

Rainier Beach is a demographically, culturally, and linguistically diverse Seattle neighborhood. Residents are largely renters, with relatively low incomes, higher rates of unemployment, and fewer years of formal education. While housing costs are lower than the rest of the city, they have risen as much as 30% over the past ten years. Approximately 5,000 people live in the Neighborhood Planning Area.

The following section provides a detailed analysis of these characteristics, although it is difficult to precisely quantify the community's demographics for two reasons. First, the most up-to-date census data is now ten years old and therefore severely outdated. Second, interviews with neighborhood residents and economic development professionals suggested the importance of the broader neighborhood in shaping neighborhood change. Therefore, this section reports data for the Neighborhood Planning Area as well as the surrounding census tracts.² See Figure 1 and Figure 2 for a depiction of these two areas. When possible, census data is accompanied by projections, anecdotal evidence, or real estate data.

² Census Tracts 111.01, 111.02, 117, 118, and 119

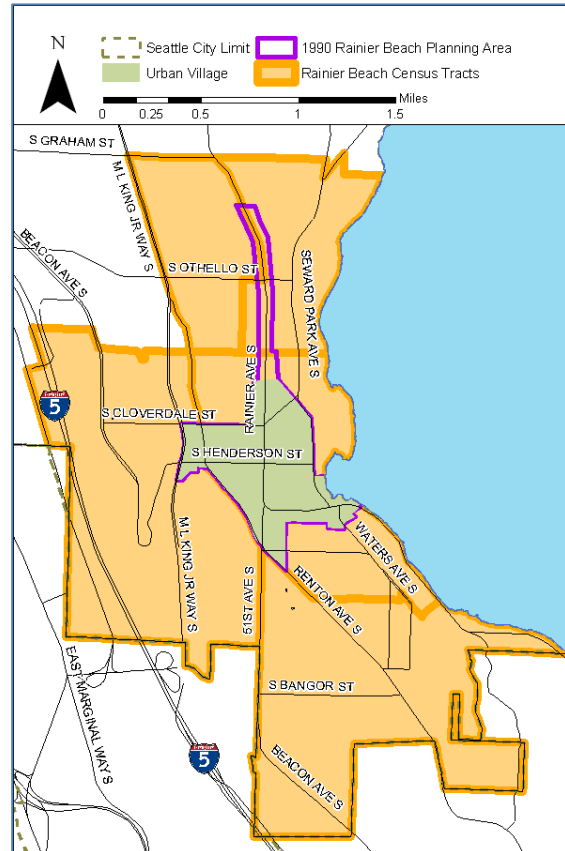
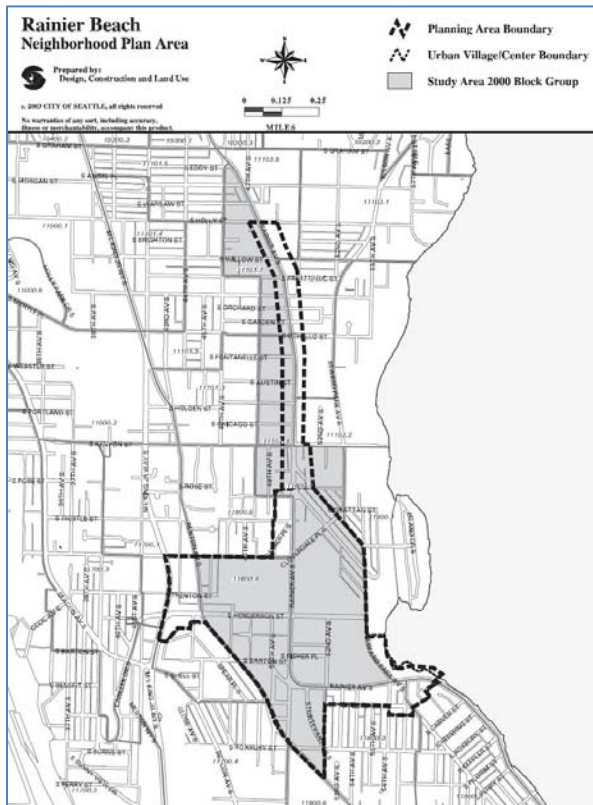


Figure 1: Rainier Beach Neighborhood Plan Area **Figure 2: Rainier Beach census tracts**
 Note the variation between boundaries of Neighborhood Planning Area, Rainier Beach census tracts, and Rainier Beach Urban Village.

Source: Figure 1: City of Seattle Department of Planning and Development, “Rainier Beach Neighborhood Plan Area,” July 13, 2003

Figure 2: Data from WAGDA. Mapped with ArcGIS 9.

Population

In 2000, there were 5,327 people living in the Rainier Beach Neighborhood Plan Area, or about 1% of Seattle’s population. As seen in Table 1 and Figure 3 below, the area had more young residents than the Seattle average; 30% of the Neighborhood Planning Area’s residents were under 18 compared to just 15% citywide.

The Rainier Beach census tracts were home to a total population five times the size of the Neighborhood Planning Area, with similar age demographics. The Puget Sound Regional Council projects that total population in the Rainier Beach census tracts has grown slightly from 28,770 in 2000 to 29,124 today.³

³ Puget Sound Regional Council, “Population and Housing Estimates,” *Puget Sound Regional Council: Getting Ready for the Future*, March 2010, <http://psrc.org/data/pophousing/pophousing-estimates>.

Table 1: Population by age, Rainier Beach and Seattle. Rainier Beach comprises about 1% of Seattle.

Age	Neighborhood Plan Area	Percent of Total	Rainier Beach Census Tracts	Percent of Total	City of Seattle	Percent of Total
Less than 18	1,604	30%	7,392	26%	87,113	15%
Between 18 and 65	3,196	60%	17,806	62%	408,101	72%
65 and older	527	10%	3,572	12%	68,161	12%
Total	5,327		28,770		563,375	

Source: Census 2000 Summary File 3: P8 Sex by Age

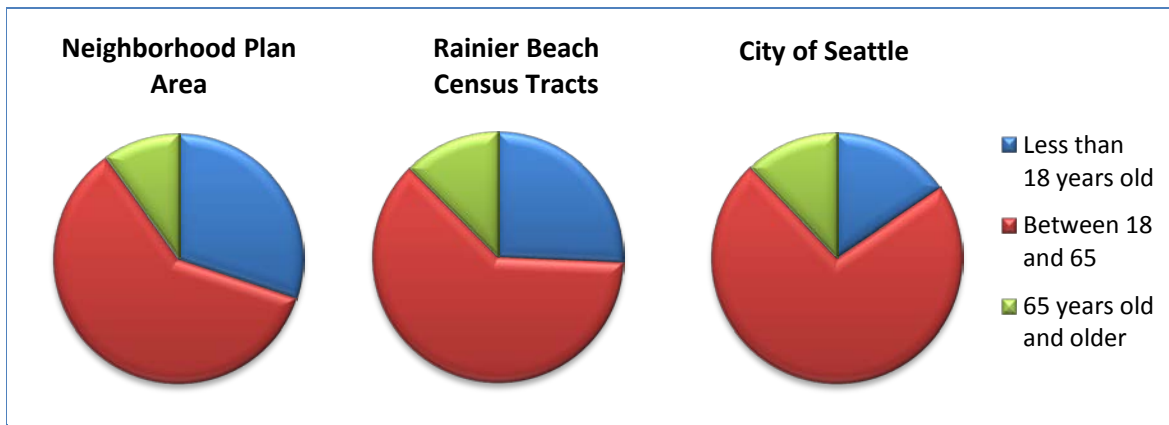


Figure 3: Population by age, Rainier Beach and Seattle.⁴ Rainier Beach has a greater proportion of youth compared to city average.

Wealth: Income & Homeownership

Median income in the Neighborhood Planning Area was approximately \$27,000 per year, about 40% lower than the surrounding neighborhood and the city as a whole (see Table 2 and Figure 4). These differences become more pronounced on a per capita basis due to Rainier Beach’s larger household size. Of course, the measures provided in this section may actually overstate community member’s wealth and employment, given the current economic recession.

⁴ *Census 2000 Summary File 3: P8 Sex by Age* (Washington, D.C.: U.S. Bureau of the Census, 2000), <http://factfinder.census.gov/>.

Table 2: Income, Rainier Beach and Seattle. The Planning Area has a much lower median household income than the city average.

Income	Neighborhood Plan Area	Rainier Beach Census Tracts	City of Seattle
Median household income	\$26,291	\$44,687	\$45,736
Per capita income	\$12,794	\$18,233	\$30,306
Per capita income: older than 16 with earnings only	\$17,223	\$35,166	\$36,133

Source: Census 2000 Summary File 3: P53 Median Household Income in 1999

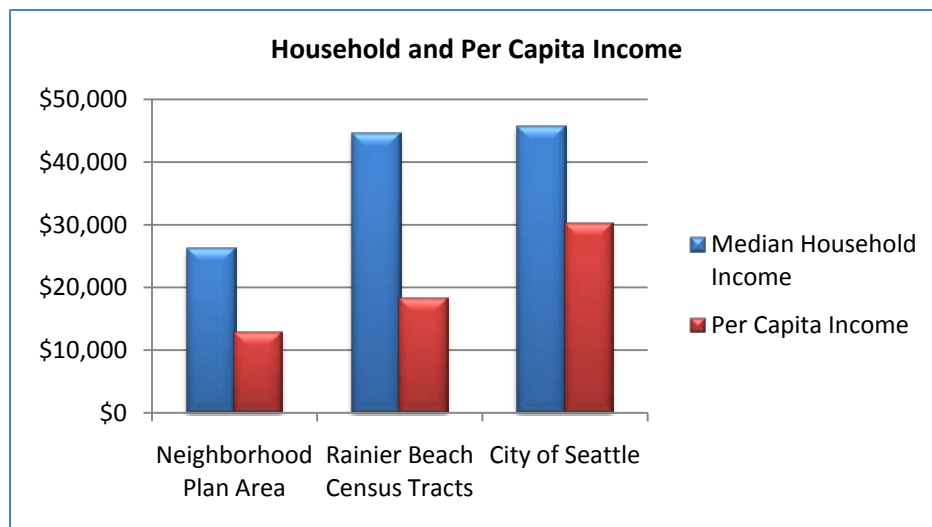


Figure 4: Household and per capita income.⁵ The Planning area has a lower median household income and per capita income than the surrounding census tracts and the city average.

In the Neighborhood Planning Area, half of the people over the age of sixteen (53%) were in the labor force (see Table 3). This was a smaller percentage than greater Rainier Beach (65%) and the city (71%).

Table 3: Size of labor force, Rainier Beach and Seattle. Fewer Planning Area residents were in the workforce.

	Neighborhood Plan Area	Percent of Population	Rainier Beach Census Tracts	Percent of Population	City of Seattle	Percent of Population
People in labor force	2,033	55%	13,860	65%	339,956	71%

Source: Census 2000 Summary File 3: P43 Sex by Employment Status for the Population 16 Years and Over. Data is limited to people over 16 years old.

⁵ *Census 2000 Summary File 3: P53 Median Household Income in 1999* (Washington, D.C.: U.S. Bureau of the Census, 2000), <http://factfinder.census.gov/>.

A greater percentage of the Rainier Beach Neighborhood Planning Area labor force was unemployed than the surrounding census tracts and the city overall. Nearly 10% of the Neighborhood Planning Area residents were unemployed, compared to 7% in the larger neighborhood and 5% citywide (see Table 4 and Figure 5).

Table 4: Unemployment, Rainier Beach and Seattle.⁶ In 2000, Rainier Beach was subject to a greater unemployment rate than the City overall.

	Neighborhood Plan Area	Percent of Labor Force	Rainier Beach Census Tracts	Percent of Labor Force	City of Seattle	Percent of Labor Force
Number of unemployed	202	10%	990	7%	17,342	5%

Source: Census 2000 Summary File 3: P43 Sex by Employment Status for the Population 16 Years and Over. Data is limited to people over 16 years old.

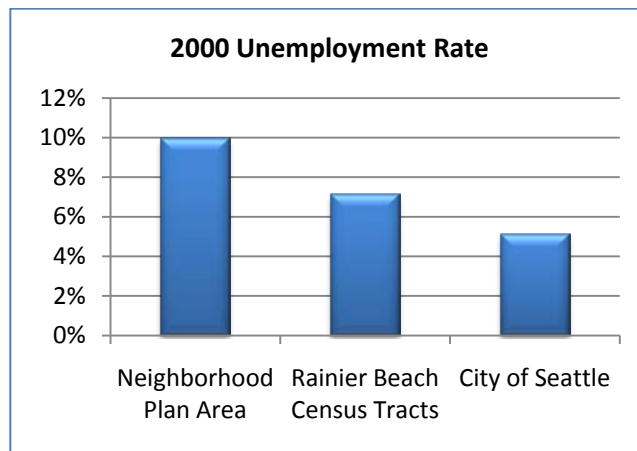


Figure 5: Unemployment rate.⁷ The unemployment rate in the Planning Area was twice that of the City average.

A quarter of the residents of the Neighborhood Planning Area were living below the federal poverty line in 2000 (see Table 5). In contrast, only 12% of people in the greater Rainier Beach neighborhood and the city overall were living below the poverty line. The differences were particularly noticeable among the young, whose 30% poverty rate was twice that of citywide youth; and the old, whose 32% poverty rate was three times that of seniors citywide.

⁶ *Census 2000 Summary File 3: P43 Sex by Employment Status for the Population 16 Years and Over* (Washington, D.C.: U.S. Bureau of the Census, 2000), <http://factfinder.census.gov/>.

⁷ *Ibid.*

Table 5: People living below the poverty line, Rainier Beach and Seattle. Younger and older populations in Rainier Beach had higher rates of poverty than those 18-65.

Age	Neighborhood Plan Area	Percent of Age Group	Rainier Beach Census Tracts	Percent of Age Group	City of Seattle	Percent of Age Group
Less than 18	479	30%	1,342	19%	12,335	14%
18 to 65	632	20%	1,869	11%	45,024	11%
65+	170	32%	300	9%	6,709	10%
Total	1,281	24%	3,511	12%	64,068	11%

Source: Census 2000 Summary File 3: P87 Poverty Status in 1999 by Age

Income levels of those living above the poverty line also lagged behind the surrounding neighborhood and the greater city. Thirty-one percent of Neighborhood Planning Area residents had income levels between one and two times the poverty line (see Table 6 and Figure 6). This was twice the city average and 75% greater than the surrounding neighborhood. Just under half of Neighborhood Planning Area residents had an income greater than twice the poverty line, compared to three quarters of all Seattle residents.

Table 6: Ratio of 1999 income to poverty level, Rainier Beach and Seattle. The percentage of Planning Area residents with incomes more than twice the poverty line was nearly half that of the city average.

Poverty Ratio	Neighborhood Plan Area	Percent of Population	Rainier Beach Census Tracts	Percent of Population	City of Seattle	Percent of Population
Under .50	466	9%	1,431	5%	30,114	6%
.50-1.00	815	15%	2,080	7%	33,954	6%
1.00-1.49	858	16%	2,188	8%	36,088	7%
1.50-1.99	818	15%	2,716	10%	35,755	7%
2.00 +	2,359	44%	19,944	70%	407,287	75%

Source: Census 2000 Summary File 3: P88 Ratio of Income in 1999 to Poverty Level

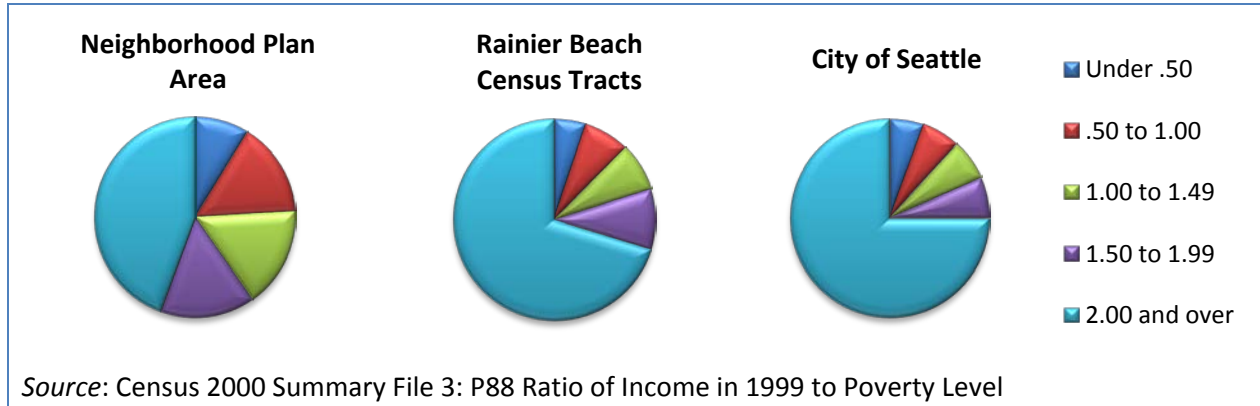


Figure 6: Ratio of 1999 income to poverty level.⁸ Less than half of Rainier Beach Planning Area residents earned more than twice the poverty level, compared to 75% in Seattle overall.

Nearly 75% of the households in the Neighborhood Planning Area lived in rental housing, while only a third of households in the broader area were renters (see Table 7). Additionally, renters in the Neighborhood Planning Area were more likely to live in one-person households; 39% of renters lived in one person households compared to just 15% of homeowners.

Table 7: Home ownership versus renting (by household). A greater percentage of people in the Neighborhood Planning Area were renters.

Rent/Own	Neighborhood Plan Area	Percent of Population	Rainier Beach Census Tracts	Percent of Population	City of Seattle	Percent of Population
Renters	1,295	74%	3,275	34%	133,359	52%
Owners	461	26%	6,253	66%	125,151	48%

Source: Census 2000 Summary File 3: H7 Tenure

In 2000, median rent in the Neighborhood Planning Area was 25% lower than the city average, while median home value was 40% lower (see Table 8).

Table 8: Median rent and home value. Rents and homes were more affordable in Rainier Beach than the rest of the city.

Housing Costs	Neighborhood Plan Area	Rainier Beach Census Tracts	City of Seattle
Median rent	\$498	\$619	\$677
Median home value	\$156,521	\$182,800	\$259,600

Source: Census 2000 Summary File 3: H56 Median Contract Rent (Dollars); Census 2000 Summary File 3: H76 Median Value (Dollars) For Specified Owner-Occupied Housing Units

⁸ Census 2000 Summary File 3: P88 Ratio of Income in 1999 to Poverty Level (Washington, D.C.: U.S. Bureau of the Census, 2000), <http://factfinder.census.gov/>.

Housing prices have risen since 2000. According to the real estate website Zillow.com, the median value of a home in the Rainier Beach area is \$292,500, compared to a citywide median value of \$366,900 (see Figure 7).⁹

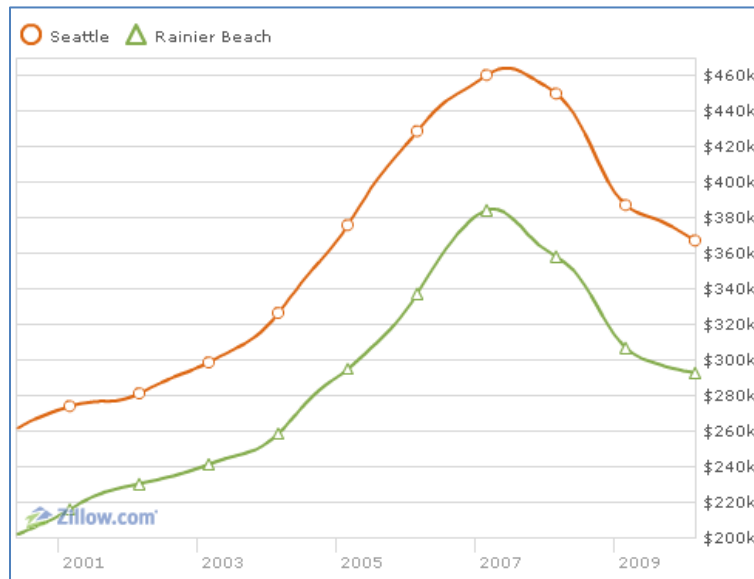


Figure 7: Seattle and Rainier Beach home values.¹⁰ Rainier Beach’s home values have risen over the last ten years, but have remained \$80,000 below the Seattle average.

In 2000, little of the Rainier Beach Planning Area housing stock was recent; fifty percent of the housing was built prior to 1960 (see Table 9). Only 6% of housing was built in the 10 years prior to the census.

⁹ “Seattle Home Prices and Home Values in WA,” *Zillow.com*, May 5, 2010, http://www.zillow.com/local-info/WA-Seattle-home-value/r_16037/#metric=mt%3D34%26dt%3D1%26tp%3D6%26rt%3D8%26r%3D16037%2C251704%26el%3D0.

¹⁰ *Ibid.*

Table 9: Housing stock by year built. Planning Area residents were more likely to live in older buildings.

Build Year	Neighborhood Plan Area	Percent of Housing Stock	Rainier Beach Census Tracts	Percent of Housing Stock	City of Seattle	Percent of Housing Stock
Before 1960	1,288	71%	5,412	55%	26,879	59%
1960 - 1990	418	23%	3,661	37%	84,104	31%
1990 - 2000	110	6%	818	8%	159,553	10%

Source: Census 2000 Summary File 3: H34 Year Structure Built

Race & Language

Race and linguistic data show the area to be very diverse.

Over half of Rainier Beach households speak a language other than English (see Table 10 and Figure 8). Asian/Pacific Island languages are the most common (29%), followed by Spanish (9%), other Indo-European languages (3%), and other languages (13%). Over 40% of the households that speak a language other than English are linguistically isolated (all household members over 14 years old have at least some difficulty with English).¹¹

Table 10: Language spoken in the home, Rainier Beach and Seattle. Note the high ratio of non-English speakers in Rainier Beach.

Language	Neighborhood Plan Area	Percent of Population	Rainier Beach Census Tracts	Percent of Population	City of Seattle	Percent of Population
English	825	46%	5,769	61%	205,381	79%
Spanish	161	9%	545	6%	11,636	4%
Other Indo-European	46	3%	270	3%	14,505	6%
Asian/Pacific Island	525	29%	2,553	27%	23,047	9%
Other	240	13%	376	4%	4,066	2%

Source: Census 2000 Summary File 3: P20 Household Language by Linguistic Isolation

¹¹ *Census 2000 Summary File 3: P20 Household Language by Linguistic Isolation* (Washington, D.C.: U.S. Bureau of the Census, 2000), <http://factfinder.census.gov/>.

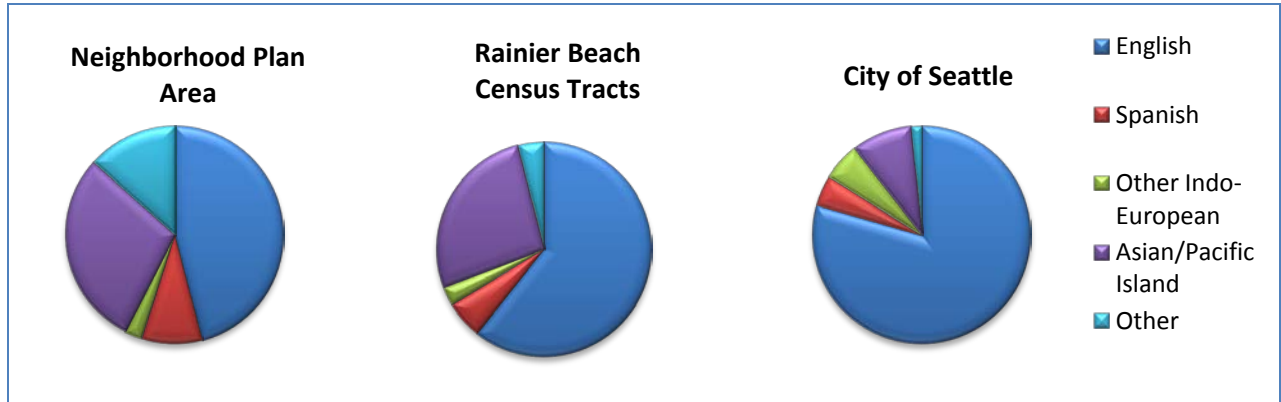


Figure 8: Language spoken in the home, Rainier Beach and Seattle.¹² The Planning Area has a much more diverse range of languages than the city average.

The larger Rainier Beach neighborhood is ethnically diverse; a third of census respondents were Asian, a quarter were Black or African American, and another quarter were White (see Table 11 and Figure 9). In contrast, Seattle overall was thirteen percent Asian, eight percent Black or African American, and seventy percent White.

Table 11: Race, Rainier Beach and Seattle. Note the neighborhood’s racial diversity.

Race	Rainier Beach Census Tracts	Percent of Population	City of Seattle	Percent of Population
White alone	6,730	23%	394,518	70%
Black or African American alone	7,828	27%	46,716	8%
American Indian and Alaska Native alone	181	1%	5,645	1%
Asian alone	10,324	36%	73,849	13%
Native Hawaiian and Other Pacific Islander alone	414	1%	2,514	0%
Some other race alone	959	3%	12,996	2%
Two or more races	2,334	8%	27,137	5%

Source: Census 2000 Summary File 3: P6 Race

Note: The Department of Planning and Development’s report does not provide race and ethnicity data for the Neighborhood Planning Area.

¹² Ibid.

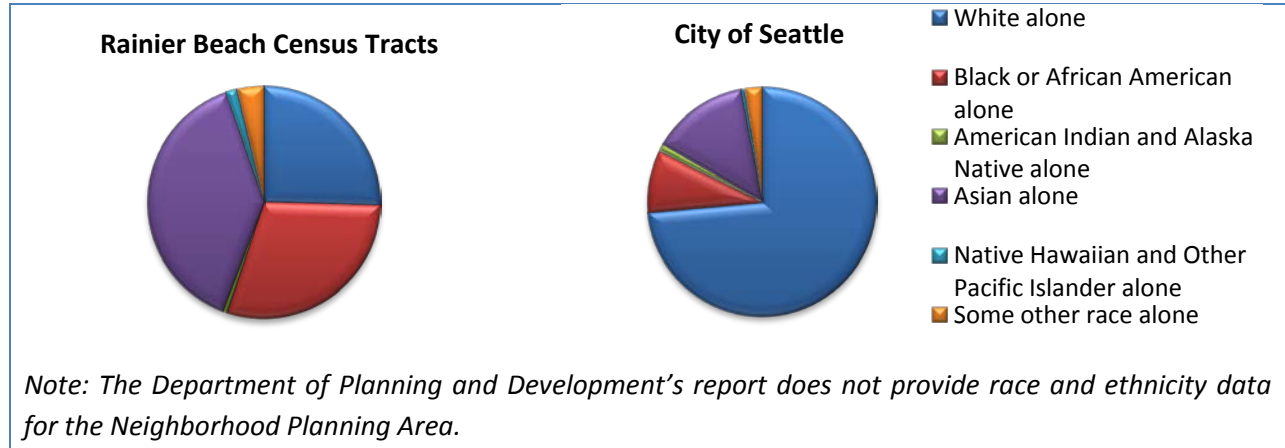


Figure 9: Race, Rainier Beach and Seattle.¹³ The Rainier Beach neighborhood is much more racially diverse than the city average.

Nearly half of Neighborhood Planning Area residents were born outside of the United States (see Table 12). Many were recent immigrants; at the time of the census, nearly 60% of the foreign-born population had emigrated within the last ten years. Within the larger neighborhood, only a third of the residents were foreign born, and of these, only about half had emigrated within the last ten years. In comparison, less than twenty percent of the Seattle population was born outside of the United States.

Table 12: Place of birth, Rainier Beach and Seattle. Note the high percentage of foreign born residents in Rainier Beach compared to the city average

Place of Birth	Neighborhood Plan Area	Percent of Population	Rainier Beach Census Tracts	Percent of Population	City of Seattle	Percent of Population
Foreign Born	2,370	44%	9,565	33%	94,952	17%
US Born	2,957	56%	19,205	67%	468,423	83%

Source: Census 2000 Summary File 3: P21 Place of Birth by Citizenship Status

Education

Rainier Beach residents had completed fewer years of formal education than both the larger neighborhood and the city overall in 2000. Just over 10% of the population had attained a four-year degree or higher, compared to 25% in the Rainier Beach census tracts and almost 50% in the city overall (see Table 13 and Figure 10). In contrast, almost 40% of Rainier Beach residents over the age of twenty-five hadn’t attained a high school degree, compared to 25% in the Rainier Beach census tracts and 10% in the city overall.

¹³ *Census 2000 Summary File 3: P6 Race* (Washington, D.C.: U.S. Bureau of the Census, 2000), <http://factfinder.census.gov/>.

Table 13: Highest level of education. A lower proportion of Rainier Beach’s residents had attained four-year degrees than the city average.

Highest Education Level	Neighborhood Plan Area	Percent of Population	Rainier Beach Census Tracts	Percent of Population	City of Seattle	Percent of Population
No high school completion	1,184	37%	4,587	24%	43,147	11%
High school diploma	969	30%	4,349	23%	62,502	15%
Post high school, no 4-year degree	703	22%	5,553	30%	110,611	27%
4-Year degree +	380	12%	4,309	23%	193,322	47%

Source: Census 2000 Summary File 3: P37 Sex by Educational Attainment for the Population 25 Years And Over

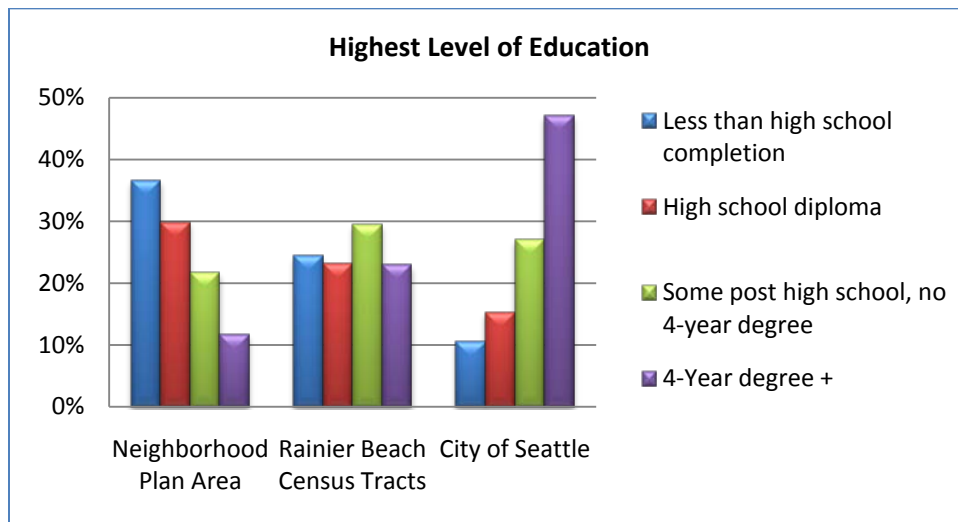


Figure 10: Highest level of education, Rainier Beach and Seattle.¹⁴ Note that Rainier Beach’s distribution of educational attainment was the mirror of the city overall.

Change Over Time

Research conducted in 2009 by Emiko Atherton suggests that poorer Rainier Beach residents are being displaced.¹⁵ The growth of owner-occupied units has outpaced that of rental units, and African

¹⁴ Census 2000 Summary File 3: P37 Sex by Educational Attainment for the Population 25 Years And Over (Washington, D.C.: U.S. Bureau of the Census, 2000), <http://factfinder.census.gov/>.

¹⁵ Emiko Atherton, “Demographics, Development, and Displacement: Gentrification and Displacement in Southeast Seattle 1980-Present” (Degree Project, Seattle, WA: University of Washington, 2009).

Americans, particularly those who rent, have increasingly left the area. However, Atherton’s research noted that the number of East African immigrants in the community was growing.

Atherton’s qualitative research found that residents believed the Rainier Valley has shifted towards middle- and upper-class families, artists, and young people. Residents also believed that the area was becoming increasingly unaffordable.

Geographic Context

Rainier Beach is situated in the very southeast corner of Seattle, just north of Tukwila (see Figure 11). It is the southernmost urban village in Seattle, and located immediately across the I-5 freeway from the Duwamish Manufacturing and Industrial Center (MIC). Due in part to its location near the Boeing Access Road highway entrance, it is possible to travel by car to Boeing Field, Renton, Tukwila, the Port of Seattle, SoDo, and downtown Seattle in less than 15 minutes (see Table 14). As shown in Figure 12, most of the Neighborhood Planning Area is located within 1.5 miles of the highway entrance. However, travel times are likely to be longer for Rainier Beach residents, as Seattle Department of Transportation research suggests they are less likely to own cars, and therefore rely more heavily on transit.¹⁶

The western portion of the Neighborhood Planning Area lies within a half mile of the Henderson Link Light Rail station, which provides access to SoDo, Tukwila, and SeaTac airport within 15 minutes. Figure 13 identifies the location of the light rail station, overlaid with quarter-mile and half-mile buffers to indicate the distance most people are willing to walk to light rail.¹⁷ The north Rainier Avenue portion of the planning area lies outside of the light rail station walking buffers.

¹⁶ City of Seattle Department of Transportation, “Seattle Pedestrian Master Plan: Lower Automobile Ownership Rates,” March 2009, http://www.seattle.gov/transportation/pedestrian_masterplan/docs/Equity%20-%20Car%20Own.pdf.

¹⁷ Stakeholders Committee, Envision Midway Collaborative Planning Project, *Overview of High-Capacity Transit Station Location Criteria* (State of Washington, City of Kent, and City of Des Moines, n.d.), 1, <http://www.envisionmidway.com/Documents/Transit%20Oriented%20Development.pdf>.

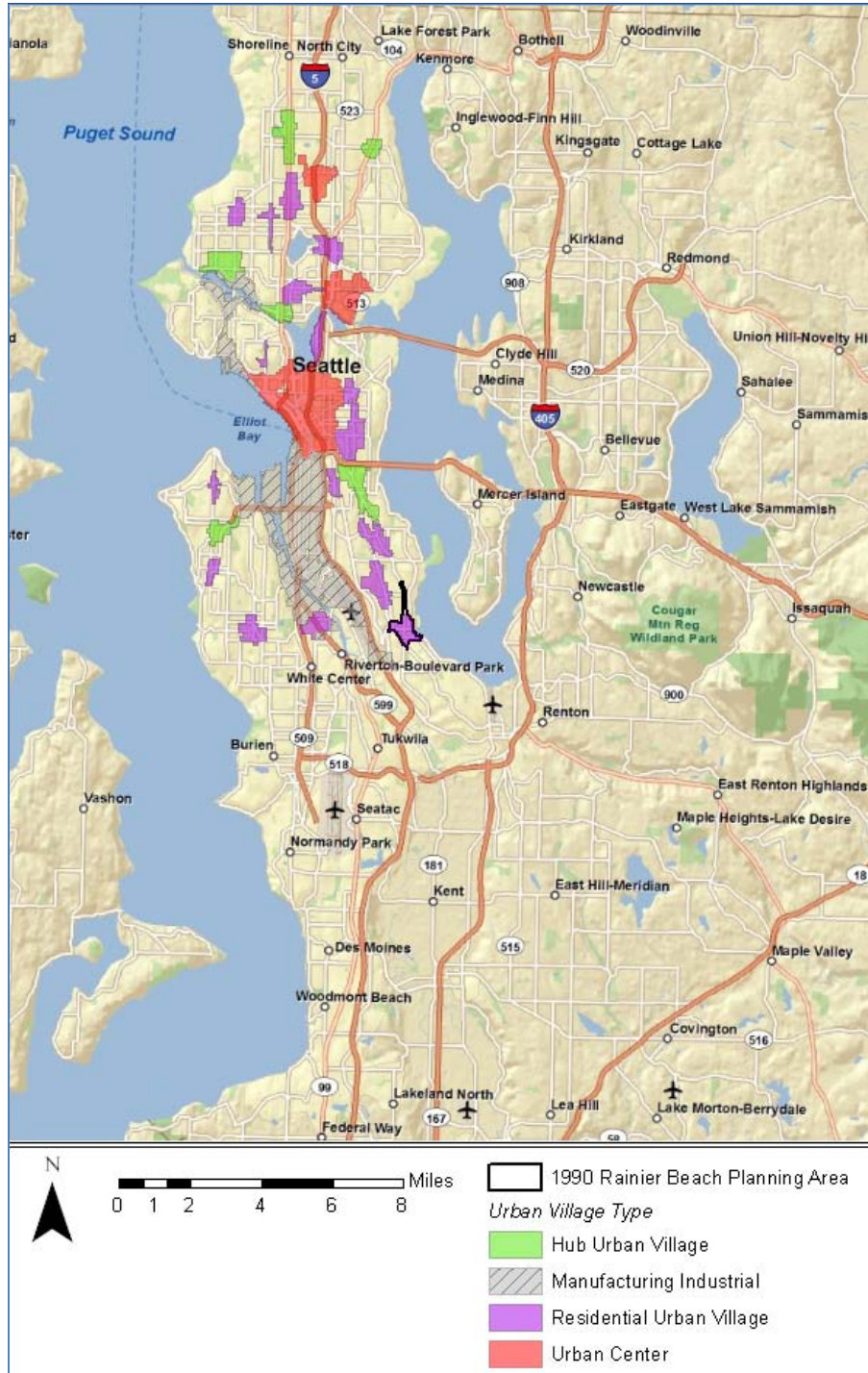


Figure 11: Rainier Beach regional context. Note proximity to Duwamish Manufacturing and Industrial Center, Boeing and SeaTac airports, and cities of Tukwila and Renton

Source: Data from Washington State Geospatial Data Archive (WAGDA) and Environmental Systems Research Institute, Inc. (ESRI). Mapped with ArcGIS 9.

Table 14: Distances and approximate travel times from Rainier Beach

Location	Road Distance	Travel Time (Auto)	Travel Time (Fastest Transit)
Boeing Field	4 miles	9 minutes	45 minutes by bus
Renton	4 miles	8 minutes	15 minutes by bus
Tukwila	6 miles	9-15 minutes	9 minutes by light rail
Port of Seattle	6 miles	15-20 minutes	60 minutes by bus
Seattle SoDo	8 miles	12 minutes	15 minutes by light rail
Seattle Downtown (Westlake)	10 miles	14 minutes	25 minutes by light rail
SeaTac Airport	11 miles	15-30 minutes	11 minutes by light rail
Kent	15 miles	18-25 minutes	46 minutes by bus
Bellevue	15 miles	22-35 minutes	50 minutes by bus
Redmond	21 miles	29-60 minutes	85 minutes by bus
Everett	38 miles	40-80 minutes	96 minutes by bus

Source: Road Distance and Auto Travel Time: Google Maps
 Bus Travel Time: Metro Trip Planner, using trip arrival times of Monday, 8 a.m.¹⁸
 Link Light Rail Travel Time: Link Light Rail¹⁹

Note: Estimated travel times are calculated from Henderson & Rainier Avenue, and do not include walking time to light rail station (8-10 minutes).

¹⁸ King County, "Trip Planning," n.d., http://tripplanner.kingcounty.gov/cgi-bin/itin_page.pl.

¹⁹ Sound Transit, "Sound Transit: Link Light Rail (Central Link) Schedule," *Sound Transit*, February 6, 2010, <http://www.soundtransit.org/Riding-Sound-Transit/Schedules-and-Facilities/Central-Link-Light-Rail.xml#time>.

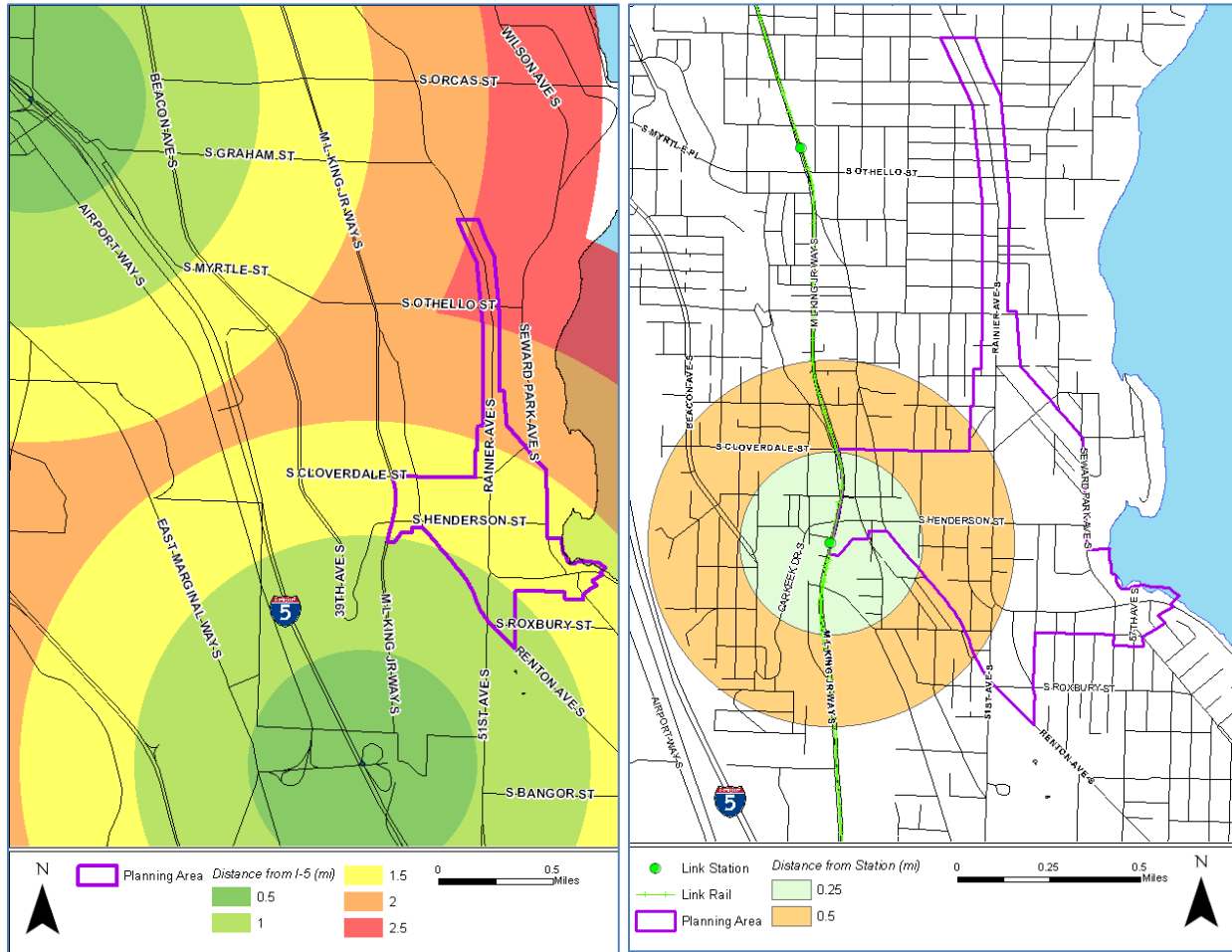


Figure 12: Distance from I-5 freeway access

Figure 13: Rainier Beach Neighborhood Planning Area and light rail walking areas

Note that most of Rainier Beach is within 1.5 miles of highway access, but that much of the neighborhood is outside of the ½ mile walking area.

Source: Data from WAGDA. Mapped with ArcGIS 9.

Historical Context

The Rainier Beach area has undergone periodic development for over 150 years. The Duwamish Tribe and the hah-chu-ahbsh or the “lake people” lived on Pritchard Island and stayed connected to other camps by establishing a trail through today’s Rainer Valley to Elliot Bay.²⁰ This trail was used by the indigenous tribes until they were removed to reservations by the Treaty of Point Elliot in 1855.²¹

²⁰ David Wilma, “Seattle Neighborhoods: Rainier Beach -- Thumbnail History,” *HistoryLink.org*, March 21, 2001, http://www.historylink.org/index.cfm?DisplayPage=pf_output.cfm&file_id=3116.

²¹ *Ibid.*

In 1891, the trail was used as the main corridor for the region's interurban railway, the Rainier Avenue Electric Railway, later named the Seattle and Renton Southern Railway (SR&S) (see Figure 14).²²



Figure 14: Railway²³

The railway provided the opportunity for people to invest in and develop property around train stations. Today, Rainier Avenue is the home to Southeast Seattle's main street neighborhoods Rainier Beach, Hillman City, and Columbia City, which provide evidence of where the train traveled. The historical buildings from this era serve as the foundation for much of the area's current development. The SR&S connected the Rainier Valley's neighborhoods until 1937 and today Rainier Avenue still serves to connect Southeast King County with downtown Seattle.

Much of the diversity discussed above can be attributed to several periods of immigration; today Rainier Beach has seen high levels of immigration from several East African countries including; Ethiopia, Eritria and Somalia. Southeast Seattle has historically been home to some of Seattle's most affordable property, which provides many newcomers the opportunity to become home and business owners. In order to protect and maintain the diverse character of Southeast Seattle and Rainier Beach, the City of Seattle and non-profit organizations have grown increasingly active in recent history. The Department of Neighborhoods was established in 1988 and worked with the community organizations to encourage and promote the values of diversity and the power of neighborhood.²⁴

²² Walt Crowley, "Seattle Renton & Southern Railway -- King County's First True Interurban," *HistoryLink.org*, October 17, 1999, http://www.historylink.org/index.cfm?DisplayPage=output.cfm&file_id=1756.

²³ Ibid.

²⁴ Andrew Gordon, Hubert Locke, and Cy Ulberg, "Chapter 10: Ethnic Diversity in Southeast Seattle," *Cityscape: A Journal of Policy Development and Research* 4, no. 2 (1998): 204.

Current Events

In recent years, the introduction of Sound Transit's light rail has brought focus to many Southeast Seattle neighborhoods like Rainier Beach. Many planners and local politicians believed that the area would benefit greatly from the community development activities and infrastructure investments tied to Light Rail. Former Mayor Norm Rice recalled in a 2001 interview, "To deprive the Rainier Valley of a light-rail system to get to jobs and other opportunities was very big in my mind."²⁵ The passage of Sound Move, in 1996, was originally not accepted by many southeast Seattle residents or the city as a whole. However, it did serve as a stimulus to bring the community's stakeholders together to begin revitalization efforts in southeast Seattle. The following section describes projects and initiatives that have been completed in Rainier Beach including: Southeast Seattle Action Agenda (SESAA), ongoing neighborhood planning, Link Light Rail, and other facility and infrastructure investments.

Southeast Seattle Action Agenda

Rainier Beach is one of the communities addressed by the SESAA. The SESAA was introduced in the summer of 2004 by the Seattle Department of Planning and Development in an effort to ensure that residents and businesses benefit from public investments in Light Rail. Southeast Seattle is recognized for its racial, cultural and economic diversity. The SESAA was established as a tool for businesses and residents to work together to establish direction for public investment and have identified this as a vision for all of southeast Seattle:

Southeast Seattle is a vibrant community where: racial, cultural and economic diversity is embraced and preserved; immigrants are welcomed; all residents have access to economic and educational opportunities, housing, and cultural and recreational amenities; and the economic benefits generated by public and private investments are shared with current residents, businesses and community institutions.²⁶

In November of 2005, the final Southeast Seattle Action Agenda report was finalized and provided direction for current and future City of Seattle Investments and included the following community goals: 1) Business and Job Creation, 2) Physical Development, 3) Education and Workforce Development, 4) Public Safety, and 5) Arts, Culture and Public Space.²⁷

Neighborhood Planning Process

In 2010, the City of Seattle will begin to update the Rainier Beach neighborhood plan. The Rainier Beach Neighborhood 2014 Plan was originally adopted in 1999 after several years of work by the residents, business owners, city staff, community development entities and non-profits. Participants identified

²⁵ Susan Kelleher, "Distorted facts led to Rainier rail route," July 16th, 2001, Seattle Times. <http://community.seattletimes.nwsourc.com/archive/?date=20010716&slug=rail16m>.

²⁶ "Southeast Seattle Action Agenda," *Office of the Mayor Greg Nickels*, n.d., <http://www.seattle.gov/archive/nickels/issues/sesaa/>.

²⁷ Ibid.

three key strategies including: enhancing Henderson Street transportation improvements, revitalizing the commercial core, and increasing community education.

Today each of these key strategies and additional activities has been addressed with varying degrees of success and several are currently ongoing. In addition, the Rainier Beach neighborhood plan is one of three neighborhood plans that the City of Seattle has selected to update in 2010. The City of Seattle will bring residents, businesses, community development entities and non-profits to establish the direction of Rainier Beach Neighborhood update process.

Central Link Light Rail

In May 1996, the 10 year Sound Move Project was approved by voters in King, Snohomish and Pierce counties. The primary element of the project, Central Link Light Rail, began carrying riders from SeaTac Airport to downtown Seattle in 2009. Construction has now begun to extend the line to the University District in 2016. Voters in 2008 approved Sound Transit 2, which will continue the line to north to Northgate, south to Federal Way, and east to Redmond. These expansions should be complete by 2030. Rainier Beach, once isolated in Southeast Seattle, will become increasingly connected to the rest of the region.

The Rainier Beach station is the first Seattle station on Central Link from SeaTac airport (see Figure 15). Residents will have the opportunity to take advantage of an improved transit system and businesses will have the opportunity to cultivate relationships with expected daily ridership of over 26,000 by the end of 2010 and 45,000 by 2020.²⁸ The Rainier Beach Station is located approximately one half mile away from the Rainier Beach main commercial node, on Martin Luther King Jr., Way and South Henderson St. Consensus among transit planners estimate that people are willing to walk between a quarter and one half mile, five to fifteen minute leisurely walk, to a transit station.²⁹ This places many of the Rainier Beach businesses beyond the point where they will benefit from the stations location and will have to rely on additional measures to draw customers and employees to and from the Rainier Beach Station.

²⁸ "Regional Transit System Planning," *Sound Transit*, n.d., <http://soundtransit.org/Projects-and-Plans/System-Planning-and-History.xml>.

²⁹ Gwen Chisholm. "Transit-Orientated Development and Joint Development in the United States: A Literature Review." *Research Results Digest*, Oct. 2002, Nu. 52, Transit Cooperative Research Program, Sponsored by the Federal Transit Administration. http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rrd_52.pdf.



Figure 15: Link light rail³⁰

The City of Seattle, King County and Sound Transit have worked with residents and businesses to ensure that the Rainier Beach Station is an asset to the community. The station includes art elements, well kept landscaping and well suited architectural features. In addition, one goal of the Rainier Beach Station was to create a centerpiece for an attractive pedestrian-orientated corridor that connects the station to Rainier Avenue that mitigates the disadvantages of distance to Rainier Beach’s business district.³¹

³⁰ Sound Transit, “Sound Transit: Link Light Rail (Central Link) Schedule,” *Sound Transit*, February 6, 2010, <http://www.soundtransit.org/Riding-Sound-Transit/Schedules-and-Facilities/Central-Link-Light-Rail.xml#time>.

³¹ Seattle Department of Neighborhoods. “Southeast Sector 2004 NPI Priority Report: Rainier Beach.” http://www.cityofseattle.net/neighborhoods/npi/PriorityReports/2004/PriorityReport_Rainier.pdf.



Figure 16: Henderson Station

Other Facility and Infrastructure Investments

Seattle Schools: The Seattle School District has invested heavily in the school facilities in Rainier Beach’s core, including the complete renovation of Dunlap Elementary, which was originally built in 1904 and re-opened in 2000.³² Southshore K-8 recently re-opened in the 2009 – 2010 school year. Southshore is a newly constructed school connected to Rainier Beach Community Center and includes both education and community use space. In addition, Rainier Beach High School completed its modernization project in the summer of 2008, which updated the entire building, focusing on the library, science and culinary program spaces. Finally, Southlake High School was completed in the fall of 2008 and is a small school that is focused on creating a family environment that supports the general population and teenage parents. Renovations of these school facilities were funded through Building Excellence school levies.

Parks & Community Centers: The City of Seattle owns and operates several parks facilities in the Rainier Beach urban village including Seattle Public Libraries and Seattle Parks. The Rainier Beach Community Center and Pool is on the block of Rainier Avenue South and Henderson Street and is connected to Southshore K-8. A new community center and pool is currently in the design process at its current location and is expected to be concluded in fall 2010. The Southeast Athletic Complex is one of four complexes owned by the school district and managed by Seattle Parks and includes several soccer / football fields, track, softball / baseball fields. Beer Sheva Park and the Atlantic City boat ramp are Parks Lakefront properties at Henderson Avenue and Lake Washington Boulevard. Seattle Parks provides residents of Southeast Seattle access to facilities, programs and open spaces that meet the neighborhood’s needs.

Transportation Improvements: Residents and businesses in Rainier Beach have worked to make Seattle more pedestrian and bicycle friendly. As a part of the Transit Strategic Plan, the Seattle Department of Transportation completed the Southeast Seattle Transportation Study (SETS), which built upon existing

³² “Building for Learning - Seattle Public Schools Histories, 1862-2000,” *Seattle Public Schools*, n.d., <http://www.seattleschools.org/area/historybook/index.dxml>.

studies to provide a roadmap to achieve the following objectives: 1.) Improve safety for all travelers, 2.) Support existing businesses by providing good access for customers arriving by transit, car, foot and bicycle, 3.) Support the transition of the retail district from an auto-orientated center to a pedestrian friendly urban village, and 4.) Ensure access to light rail for area residents.³³

The existing development in the Rainier Beach Urban Village is focused on meeting the needs of patrons driving automobiles, while Rainier Beach has one of the lowest automobile ownership rates in the city.³⁴ The city has committed resources to help transform Rainier Beach into a transportation hub for southeast Seattle. The Rainier Beach core is one of the most dangerous areas for pedestrians in Seattle and the SETS study has developed plans to create a more walkable community connecting the neighborhood schools, library, community center, pool and parks.

Several notable transportation improvements have been completed to improve pedestrian access to the core of Rainier Beach. The addition of the Central Link Light Rail also resulted in improvements to Henderson Street with wider sidewalks, new bike lanes and better crosswalks. In addition, in 2007, the Chief Sealth Trail was completed; connecting Rainier Beach to Central Beacon Hill with Southeast Seattle's only fully separated bike, pedestrian, and wheelchair path.³⁵

³³ Seattle Department of Transportation, "Southeast Transportation Study (SETS)," *Department of Transportation*, n.d., http://www.seattle.gov/transportation/ppmp_sets.htm.

³⁴ Ibid.

³⁵ Seattle Department of Transportation, "Chief Sealth Trail," *Department of Transportation*, November 29, 2007, http://www.seattle.gov/transportation/ppmp_sets.htm.

Research Introduction

This research was conducted at the request of the Seattle Department of Planning and Development neighborhood planning team and the Office of Economic Development (OED) to explore options for economic development in Rainier Beach in preparation for the upcoming neighborhood planning process. Much of the planning and economic development work in Rainier Beach has focused on affordable housing and retail development. This project differs in that it evaluates the potential for non-retail jobs-creation.

Members of the community have expressed a desire for a greater quantity of retail businesses, such as specialty food vendors, household good sellers, and coffee shops. The planning code attempts to address this by zoning for significant amounts of neighborhood commercial uses in addition to multi-family and civic uses. However, a recent report commissioned by OED indicates that retail development will not grow in the Rainier Valley for some time because the retail market is saturated. The report suggests that the area is currently *over* zoned for retail; the amount of land needed to fulfill the market-determined demand is smaller than the amount of land zoned for retail use. This may be contributing to the dispersion of retail throughout the valley, which in turn is creating a lack of retail synergy and underutilized or empty storefronts. One solution proposed by the study is to focus retail development in limited nodes to create concentrated shopping “destinations.” Shopping nodes offer a wider variety of goods to shoppers in one easy location, which stimulates additional spending. These nodes would allow shoppers to meet more of their needs within the neighborhood, and potentially draw shoppers from other neighborhoods, thereby increasing spending in the Rainier Valley.

The findings of the retail strategy study generate two related questions: *“if retail growth is limited, what types of businesses have growth potential?”* and *“if retail growth is concentrated in nodes, what should be developed on the remaining commercial land?”* In order to answer these questions, this paper evaluates one potential development strategy, the promotion of low-impact production businesses such as woodworking, fashion design, and very small-scale custom manufacturing. The primary goal of this strategy would be to create jobs and provide new sources of income, not to provide goods and services.

In order for such a strategy to benefit the community, it must attract businesses that provide jobs suited to residents’ skill sets, that are compatible with a residential neighborhood, and that will provide long-term economic stability. These criteria are discussed below.

Benefits Should Accrue to the Neighborhood

As noted in the review of Rainier Beach’s demographics, a substantial portion of the neighborhood is comprised of lower-income residents, recent immigrants, non-English speakers, and people with fewer years of formal education. Many employment opportunities open to the general population will therefore not be accessible to significant portions of the neighborhood. Therefore, this paper assesses whether low-impact production businesses are likely to contribute to the economic stability of current neighborhood residents by providing employment or business ownership opportunities.

The current recession highlights the importance of generating employment for these communities. Immigrants have been particularly impacted, as they tend to be younger, have fewer years of education, have only recently entered the labor force, be overrepresented in vulnerable industries, be less connected to social safety net services, and be dedicating a portion of their income to families in their country of origin.³⁶ Research by the Henry J. Kaiser Foundation indicates that communities of color are also more likely to struggle in the face of recession. Nationally, these community members are more likely than White counterparts to work in employment sectors with the highest unemployment rates, have trouble getting a good job or a raise, and have trouble paying for food, housing, and medical care due to the economic downturn. The tendency for communities of color to have less accumulated wealth also makes them less able to weather extended downturns.³⁷ Additional data from the U.S. Census Bureau suggests that the poor of all races are disproportionately susceptible to economic shifts, as many had not recovered from the 2002 recession by the time the 2006 recession began.³⁸

Businesses Should be Compatible in a Residential Neighborhood

As noted in Geographic Context, Rainier Beach is a residential urban village. As detailed in the City's comprehensive plan, the goal of residential urban villages is to:

Promote the development of residential urban villages, which function primarily as compact residential neighborhoods providing opportunities for a wide range of housing types and a mix of activities that support the residential population.³⁹

In order to support this goal, the Comprehensive Plan employment strategy is to:

Allow employment activity in residential urban villages to the extent that it does not conflict with the overall residential function and character of the village, provided that a different mix of uses may be established through an adopted neighborhood plan.⁴⁰

This is reflected in the current zoning, which is a mix of multi-family housing and neighborhood commercial, surrounded by single family homes. As noted above, this mix of uses is established in part by the neighborhood planning process; determining what constitutes an appropriate balance of economic production and residential comfort is largely a matter of community preference.

³⁶ Demetrios G. Papademetriou and Aaron Terrazas, *Immigrants and the Current Economic Crisis: Research Evidence, Policy Challenges, and Implications* (Washington, DC: Migration Policy Institute, January 2009), iii, http://www.migrationpolicy.org/pubs/lmi_recessionJan09.pdf.

³⁷ Julia Berndt and Cara James, *Race, Ethnicity Health Care Issue Brief: The Effects of the Economic Recession on Communities of Color* (Menlo Park, CA: The Henry J. Kaiser Family Foundation, July 2009), 1, <http://www.kff.org/minorityhealth/upload/7953.pdf>.

³⁸ Jon Hurdle, "Poor Still Suffering From Last Recession," *Reuters*, January 23, 2008, <http://www.reuters.com/article/idUSN2241431020080123>.

³⁹ City of Seattle, *Seattle's Comprehensive Plan: Toward a Sustainable Seattle* (City of Seattle, March 1999), 1.20, http://www3.cityofseattle.net/DPD/static/Urban%20Village%20element_LatestReleased_DPDP016169.pdf.

⁴⁰ Emphasis added; *Ibid.*, 1.21.

While each neighborhood may have different preferences as to land use mixes, the societal definition of residential compatibility has changed over time. While compatibility has traditionally been very narrowly defined in American land use history, more recent theory from the smart growth and New Urbanism movements have suggested that diverse land uses are more compatible than previously thought.⁴¹ Many developments now mix single family and multifamily housing, office with retail or industrial uses, or housing with retail – often in the same neighborhood, and occasionally in the same building. As urban planning author Donald L. Elliot describes it:

...many forms of retail, commercial, and (at least) light industrial uses can be substituted for one another with few, if any, adverse land use impacts on surrounding areas. And there is no inherent reason why most commercial, institutional, and residential uses need to be separated as long as the scale of the uses is compatible.⁴²

This paper uses this theory to review the benefits and disadvantages to land use mixing and evaluates whether low-impact production businesses are compatible in a residential setting.

Businesses Should be Economically Sustainable

In order to be economically sustainable, economic development strategies should target jobs that are both regionally and locally appropriate. To determine whether low-impact production businesses are regionally appropriate, this paper evaluates whether they are included in high-growth sectors identified by regional economic development agencies.

To determine whether low-impact production businesses are locally appropriate, this paper identifies the neighborhood's assets, such as the light rail station, proximity to major employment centers, neighborhood diversity, low rents, and others and evaluates whether low-impact production businesses would use these assets to thrive. Businesses that rely on these assets will be more economically tied to the neighborhood and more willing to make long-term investments.

Research Question

This paper applies the three criteria of neighborhood skill set matching, residential neighborhood compatibility, and long term economic stability to one potential economic development strategy, the promotion of low-impact production businesses. Low-impact production businesses include garment design and manufacturing, event production and catering, food processing, construction and landscaping contracting, printing and graphic design, furniture making, metal and jewelry working, and

⁴¹ Jill Grant, "Encouraging Mixed Use in Practice," in (presented at the International Planning Symposium on Incentives, Regulations, and Plans – The Role of States and Nation-States in Smart Growth Planning, National Center for Smart Growth Research and Education, University of Maryland with the Habiforum Foundation, The Netherlands and Maryland Department of Planning, 2004), http://www.smartgrowth.umd.edu/InternationalConference/ConferencePapers/Grant_MixedUsePractice_DateNA.pdf.

⁴² Donald Elliott, *A Better Way to Zone: Ten principles to create more livable cities* (Washington DC: Island Press, 2008), 33.

film and sound production. These businesses are often lumped in with traditional “smokestack” industry and segregated from housing and retail. However, the evidence suggests that changes in technology and the enforcement of federal and state environmental legislation such as the Clean Air Act and the Clean Water Act have made these businesses more compatible with other uses than in the past.⁴³

Like the broader light industrial sector, these low-impact businesses provide jobs that are, on average, well-paying and available to people without four-year degrees. However, like all land uses, they affect and are affected by their surroundings. This paper evaluates the extent to which low-impact production businesses produce noises, vibrations, and traffic; and how neighborhoods can determine what is livable. Additionally, while these businesses are believed to be economically sustainable on a regional level, this paper evaluates whether they would be sustainable in Rainier Beach.

In short, this research attempts to answer the following questions:

- What is the potential for developing low-impact production commercial businesses that are compatible with the residential nature of Rainier Beach?
- How would easing the strict separation of land uses effect economic and environmental equity?
- What are Rainier Beach’s assets, and would low-impact businesses leverage them?
- What do low-impact production businesses need to be successful?
- What do low-impact businesses look like, and where (if anywhere) would they be appropriate in Rainier Beach?
- How can the city promote these businesses?
- How can the neighborhood determine the appropriate balance of land uses?

Methodology

This report synthesizes data from a literature review, interviews, observation of the neighborhood’s urban form, and Seattle zoning data.

Literature reviewed addressed land use and economic development theory, economic development strategies of city agencies, project-level applications throughout the country, and common needs of production-oriented businesses. A description of Rainier Beach’s attributes was created from census data, zoning data, GIS-data, and interviews. Regional workforce and industry data was obtained through a review of City and non-profit policy papers and reports. Rent data was derived from CoStar retail, industrial, and office reports. Interviews were conducted with economic development professionals in Seattle and other cities, real estate developers and architects, and local business owners.

This information was used to construct five case studies and two “mini-case studies”, which illustrate the benefits and challenges of focusing economic development on low-impact production industries. This approach was used because quantitative data on the intentional mixing of production and residential uses is relatively rare. The case studies are an attempt to study the phenomenon in context

⁴³ Ibid., 69.

and to identify the similarities and differences in approaches across projects.⁴⁴ The following case studies are included at the conclusion of this report:

- Rainier Beach’s Alpha Cine relocation from downtown Seattle
- Georgetown’s Essential Baking relocation from Fremont
- Jamaica Plain, Massachusetts’ Brewery complex, a conversion of a residentially-located industrial brewery into an incubator for woodworking and food preparation businesses
- San Francisco, California’s Production, Distribution, and Repair planning analysis
- San Francisco, California’s La Cocina, a small non-profit food preparation incubator in a residential neighborhood
- Boulder, Colorado’s Steel Yards, a mixed use development combining housing, retail, and industrial service
- Oakland, California’s proposed Mandela Grand, a large mixed-use project in an industrial zone

The data was synthesized to provide recommendations to the City on how to determine the appropriate amount of low-impact production businesses, how to control their impacts, and how to promote their growth. Additionally, the findings are used to identify areas that might be suitable for low-impact production businesses. In order to make this report useful from a neighborhood planning perspective, illustrations have been provided whenever possible, with a particular focus on local examples.

Land Use Theory

The Rainier Valley Retail Strategy study’s finding that additional retail development is unlikely in the near future, given the current population growth trends, leaves the community with two key options to consider if it wants to see new development:

1. Increase the number of residents in the area, thereby increasing retail demand.
2. Pursue other types of commercial development, thereby increasing the community’s income and spending power.

Focusing development on residential growth is favored by several community organizations and by City policy.⁴⁵ Land around the Henderson light rail station has therefore been zoned up to 65’ tall to encourage larger residential structures.⁴⁶ This strategy is not universally accepted; some Rainier Beach residents have resisted increases in density in the past.⁴⁷

⁴⁴ Robert K. Yin, “The Case Study Crisis: Some Answers,” *Administrative Science Quarterly* 26, no. 1 (March 1981): 59.

⁴⁵ City of Seattle, *Seattle’s Comprehensive Plan*, 1.3; Marshall Foster (Director of Planning, Seattle Department of Planning and Development), interview, April 23, 2010; Pat Chemnick (Economic Development Director, SEED), interview, April 15, 2010.

⁴⁶ *Seattle Municipal Code*, 23.61.002, 2001.

⁴⁷ Pat Chemnick (Economic Development Director, SEED), interview.

The second strategy, and the subject of this project, requires an increase in the mix of uses in the Rainier Beach neighborhood. As a background for discussing the impact of that strategy, we review the history, rationale, and effects of land use separation.

Land Use History

Pre-zoning

Prior to the industrial revolution, work and home were considerably comingled; people tended to live in the same building as their small shop.⁴⁸ However, as coal-based industry began producing heavy air pollution, people wanted to live as far away from employment centers as possible. Early planners began considering how to balance the benefits of economic production with the desire for livable housing. The work of Ebenezer Howard in the early 1900s was particularly influential. His garden city movement envisioned new, moderately-sized, wholly contained communities. His plans called for a coarse grain of housing and industry which would create comfortable residential communities separated from industry. Later developers and planners focused on the separation element of Howard's theories rather than his call for complete communities. This contributed to the growth of residential suburbs. Outward sprawl was exacerbated by introductions of new technologies: the streetcar, commuter trains, and private automobiles shortened the travel time from work to home; elevators, air conditioning, and improved building technologies made it possible to build skyscrapers in the city center, driving up land costs in the city centers and pricing out less lucrative uses.

Introduction of Zoning

In 1916, New York City became the first city to adopt a major zoning ordinance.⁴⁹ The code expanded existing light and air building regulations to include setbacks, height limits, and three use zones: residential, commercial, and industrial.⁵⁰ The separation of land uses was increasingly codified in zoning codes during the 1920s and 1930s. The most significant legal support of these codes was the 1926 *Euclid v. Ambler* Supreme Court decision. In this case, the court established that zoning was a form of nuisance control and therefore a reasonable exercise of police power. In this context, the ruling is more relevant for the court's findings on what constituted a nuisance; the court held that even small amounts of multifamily housing could be a "mere parasite".⁵¹ This narrow definition of compatibility, and negative perception of anything other than single family development, was repeated in subsequent court decisions.

Other public policy decisions intensified the changes brought about by the adoption of zoning. The National Housing Act of 1934 led to the practice of "redlining," or limiting housing opportunities by race.⁵² The 1944 G.I. Bill guaranteed mortgages to veterans, providing the capital needed to purchase

⁴⁸ Grant, "Encouraging mixed use."

⁴⁹ Elliott, *A Better Way to Zone*, 9.

⁵⁰ *Ibid.*, 10.

⁵¹ *Village of Euclid, Ohio V. Ambler Realty Co.*, 272 U.S. 365 (1926).

⁵² Gregory D. Squires, *From Redlining to Reinvestment* (Temple University Press, 1992), 5.

homes outside of the City.⁵³ The 1956 Federal-Aid Highway Act funded the transportation infrastructure to allow easy vehicular access between residential suburbs and urban jobs - for those who could afford automobiles and suburban housing.⁵⁴

Efforts to Reintroduce Land Use Mixing

More recently, the strict separation of land uses has been called into question. Diversity, of both people and land uses, began to be seen as the key to a city's vitality. Allan Jacobs and Donald Appleyard argued that diversity and integrated activities were the "urban fabric for an urban life," Jane Jacobs called diversity the most important element of a healthy urban life, and Lewis Mumford argued that zoning decisions had limited the city's "interplay of capacities and functions".⁵⁵ Economists have argued that diverse regions are better able to promote new ways of thinking, to increase a city's tax base, and are correlated with lower unemployment and greater stability.⁵⁶

The Canadian urban planner Jill Grant classifies land use mixing into three types:

1. increasing intensity of land uses - e.g., mixing housing types
2. increasing diversity of uses - e.g., mixing commercial with residential
3. integrating formerly segregated uses - e.g., allowing light industry in residential areas⁵⁷

The first type, mixing the intensity of land uses, is becoming increasingly common. One example of this is found in the HOPE VI New Holly project in Seattle's Othello neighborhood, which replaced one- and two-story wood frame buildings with a mix of single-family homes, townhomes, and apartments. The units range from one to five bedrooms and house a range of socioeconomic groups.

The second type of land use mixing, increasing the diversity of uses, is seen less frequently. This type of mixing is a key element of the Seattle Urban village concept. It is more often seen in large redevelopment projects, and is exemplified by the Northgate Thornton Place project, which combines condominiums, apartments, and senior housing with retail and a cinema.⁵⁸ On a smaller scale, it is reflected in Seattle's Neighborhood Commercial (NC) zoning, which allows neighborhood-serving retail to be integrated with housing.

The third form of mixing, integrating formerly segregated uses such as light industry and housing, is a much rarer phenomenon. One example is found in the City of Bellingham, Washington's waterfront redevelopment plan, which calls for integrating public parks and promenades, homes, major institutions, educational services, retail services, and light industry all in the same project. In the past, each one of these uses might have been limited to its own discrete part of town.

⁵³ Glenn Eric Singleton and Curtis Linton, *Courageous Conversations About Race* (Corwin Press, 2006), 163.

⁵⁴ Squires, *From Redlining to Reinvestment*, 7.

⁵⁵ Emily Talen, "Design That Enables Diversity: The Complications of a Planning Ideal," *Journal of Planning Literature* 20, no. 3 (February 1, 2006): 236.

⁵⁶ *Ibid.*, 238.

⁵⁷ Grant, "Encouraging mixed use," 9.

⁵⁸ Grant, "Encouraging mixed use," 10; "Connect the Dots," *Thornton Place*, n.d., <http://www.thornton-place.com/index.html>.

The challenge is to determine which uses are truly compatible. As Grant points out, our definitions of “compatibility” differ across time and cultures. For example, in some Asian cultures a much wider range of uses (such as production space and housing) are accepted in close proximity than in the United States.⁵⁹

Advantages and Disadvantages to Land Use Mixing

Mixing land uses has a variety of advantages and disadvantages on social, environmental, and financial dimensions. This report focuses on three aspects: health, industrial job protection, and equity.

Health

Zoning is intended to keep people away from the harmful effects of intense land uses. Living close to extremely noxious uses, such as waste transfer facilities, is associated with an increase in respiratory diseases. Likewise, living near high noise levels is associated with disturbed sleep, reduced concentration, disrupted communication, and, in some studies, increased blood pressure.⁶⁰ Noises can also lead to community annoyance which develops into stress. This annoyance is greater for loud noises (ex. airplane take-offs), late-night or early morning noises, long-lasting noises (ex. highway traffic), noises that start or stop suddenly, high or low frequencies, noises that are believed to be unassociated with important economic activities, and noises which are perceived to be avoidable.⁶¹ Note that noise impacts are not simply a function of volume; perception and predictability play an important role in community reception.

These effects should be taken into account when attracting businesses, designing buildings, and creating operating standards. Community agreements, monitoring, operating standards, and other measures can restrict unpleasant noises and increase predictability. Both the U.S. Department of Housing and Urban Development and the U.S. Bureau of Transportation Statistics publish guidelines that indicate when mitigation measures are needed and translate acoustic guidelines for community members (See Figure 17).⁶² Extra mitigation measures should be taken near particularly vulnerable populations, such as schoolchildren and hospital patients.⁶³

⁵⁹ Grant, “Encouraging mixed use,” 10.

⁶⁰ Birgitta Berglund, Thomas Lindvall, and Dietrich H. Schwela, “Guidelines for Community Noise,” *World Health Organization*, 1999, <http://www.who.int/docstore/peh/noise/guidelines2.html>.

⁶¹ Ibid.

⁶² Environmental Planning Division, Office of Environment and Energy, *The Noise Guidebook* (Office of Community Planning and Development, U.S. Department of Housing and Urban Development, 1991), <http://hud.gov/offices/cpd/environment/training/guidebooks/noise/>; Carl E. Hanson, David A. Towers, and Lance D. Meister, *Transit Noise and Vibration Impact Assessment* (Office of Planning and Environment, Federal Transit Administration, U.S. Department of Transportation, May 2006), http://www.fta.dot.gov/documents/FTA_Noise_and_Vibration_Manual.pdf.

⁶³ Berglund, Lindvall, and Schwela, “Guidelines for Community Noise.”

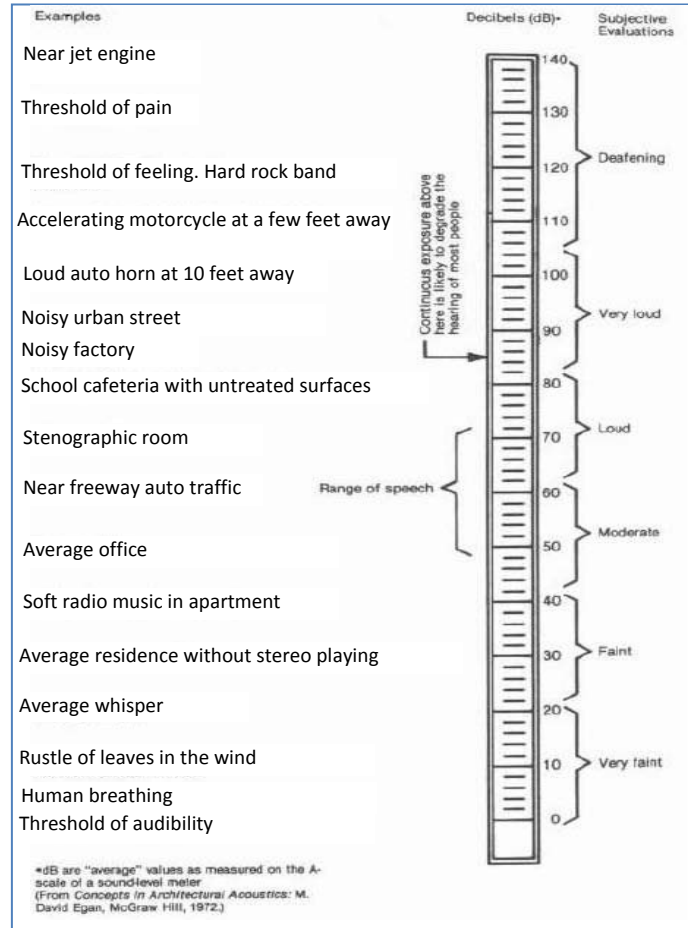


Figure 17: Example of noise chart for community use.⁶⁴ Note that examples should be relevant to the community; examples such as "stenographic room" as above would not be relevant.

Conversely, there are also health consequences to land use separation. Increased separation of jobs and housing is associated with sprawling development and auto-oriented travel, which are in turn associated with air pollution, respiratory disease, auto accidents, obesity, cardiovascular and diabetic illnesses, and stress.⁶⁵ Increasing the availability of jobs in the Rainier Beach could improve residential health, provided that the health impacts of the businesses are mitigated.

Protection of Industrial Jobs

While zoning is often treated as a way to protect residential developments from the harmful effects of heavy industrial businesses, it also functions as a way to protect industrial businesses from the effects of non-industrial encroachment. Industrial users have traditionally required large amounts of land for one or two story buildings due to the efficiency of horizontally arranged production space and the large size and weight of materials. In contrast, other building types, such as offices, can build vertically and therefore accommodate more productive uses per square foot of land. This makes the land much more

⁶⁴ Environmental Planning Division, Office of Environment and Energy, *The Noise Guidebook*, 1.

⁶⁵ Howard Frumkin, "Urban Sprawl and Public Health," *Public Health Reports* 117, no. 3 (June 2002): 201-217.

valuable on a square footage basis. Therefore, if zoning does not keep non-industrial uses out of industrial areas, land prices will rise and pressure industrial users to relocate to the municipal periphery.

More importantly for this research, industrial uses can create nuisances. Legally, a nuisance is an interference with a person's enjoyment and use of his land.⁶⁶ Land use law has held that businesses can be forced to relocate when they create a nuisance for residential dwellers, even when the non-industrial use “comes to the nuisance,” or moves close to an existing industrial business.⁶⁷ While a business forced to relocate may be compensated by the non-industrial land owner, the risk of being accused of creating a nuisance and being forced to relocate provides an incentive for industrial businesses to locate near other industrial businesses.

Both rent- and nuisance-driven industrial displacement lead to the sprawl discussed above. Additionally, industrial businesses may not be able to survive high rents and displacement disruptions, leading to the loss of industrial jobs. As will be discussed more thoroughly later, industrial jobs tend to be a disproportionate source of income for people without higher educational attainment.

The preservation of industrial land has been of particular importance to the City of Seattle, because of the strategic importance of the port.⁶⁸ The deep-water port is a powerful asset to Seattle’s role in international trade, and to its growing role in cruise tourism.⁶⁹ However, it is located very close to the central business district, which generates some of the highest commercial rents in Seattle.⁷⁰ Downtown business’ search for affordable office space and the challenge of delineating industrial and non-industrial activities in modern business development have made it increasingly difficult to prevent industry from being priced out of port access.

Promoting the growth of low-impact production work in Rainier Beach must then be carried out in such a manner that residential areas are protected from nuisances, that production-oriented businesses are assured that they won’t be forced out because of rents or complaints, and that does not diminish the effectiveness of the industrially-zones.

Equity

In many ways, low-income and minority communities have suffered disproportionately from the separation of land uses. Locally unwanted land uses (polluting infrastructure such as incinerators, recycling centers, and sewage treatment centers) are often concentrated in a limited number of neighborhoods. This occurs particularly in manufacturing and low-income neighborhoods, where the

⁶⁶ Farlex, Inc., “Nuisance,” in *the Free Online Law Dictionary*, n.d., <http://legal-dictionary.thefreedictionary.com/nuisance>.

⁶⁷ *Spur Industries, Inc. v. Del E. Webb Development Co.*, 494 P. 2d 701 (Arizona 1972).

⁶⁸ Roque Deherrera (Business Services Manager, Seattle Office of Economic Development), interview, April 22, 2010; Marshall Foster (Director of Planning, Seattle Department of Planning and Development), interview.

⁶⁹ Trade Development Alliance of Greater Seattle, “Center of Distribution and Logistics,” n.d., <http://media.seattletradealliance.com/Industry/Distribution&Logistics.pdf>.

⁷⁰ *The CoStar Office Report: Third Quarter 2009: Seattle/Puget Sound Industrial Market* (Bethesda, MD: CoStar Group, n.d.).

poor live and work.⁷¹ For example, research by Juliana Maantay found that 87% of people living within one-half mile of such noxious uses in the Bronx are people of color.⁷²

Furthermore, research by Raymond Burby and Denise Strong found that compared to whites, minority communities are more concerned over the effects of pollution, and that this leads to a greater perception of a decreasing quality of life.⁷³ Burby and Strong speculated that this was related to a history of racial discrimination and a lack of control over living environments.

Greater separation of housing and employment is also believed to contribute to sustained poverty. The spatial-mismatch theory asserts that poorer communities live in center city neighborhoods, while job growth occurs elsewhere, primarily in suburban environments.⁷⁴ Land use policies that promote or allow sprawl – for example, by rigidly denying multifamily housing in suburbs or limiting the number of jobs available in a neighborhood – exacerbate this concentration of poverty. The poor must then spend more of their income on transportation to access jobs, which limits their mobility options and decreases their ability to build wealth.⁷⁵

Providing low-impact production jobs in the neighborhood might therefore lessen the spatial-mismatch and improve equity by providing employment opportunities close to where people live. If residents could take transit, bicycle, or walk to their jobs, they would spend less time and money traveling to other job centers. As the next section discusses, office and retail jobs might not provide the opportunities or income that production jobs would.

It should be noted that some interviewees suggested that promoting low-impact production uses outside of the industrial zone could lessen the effectiveness of the MIC by decreasing synergy and lessening the political will to enforce the industrial zoning.⁷⁶ If this is true, promoting low-impact production uses outside of the MIC could have overall negative effects on equity, as ethnic minorities and people with lower levels of education rely heavily on industrial jobs for their livelihood. However, this research did not delve deeply into parcel use or availability in the MIC. There are indications that there may be feasible space for small low-impact production businesses in the MIC; half of the parcels in most MIC neighborhoods are less than 22,600 square feet, and additional space may be available from

⁷¹ Tom Angotti, “Residential Segregation,” *Gotham Gazette*, May 2004, <http://www.gothamgazette.com/article/landuse/20040519/12/984>.

⁷² Juliana Maantay, “Race and Waste in the Bronx: Who is Impacted by Solid Waste Transfer Stations?,” (originally published in *Planners Network* #145, January-February 2001), *Lehman College*, January 2001, http://www.lehman.cuny.edu/deannss/geography/race_and_waste_adjusted.htm.

⁷³ Note, unlike most variables, Burby and Strong’s study found that Blacks were less concerned over the impacts of noise pollution than white respondents; Raymond Burby and Denise Strong, “Coping with Chemicals: Blacks, Whites, Planners, and Industrial Pollution,” *Journal of the American Planning Association* 63, no. 4 (1997): 469.

⁷⁴ Gregory D. Squires and Charis E. Kubrin, “Privileged Places: Race, Uneven Development and the Geography of Opportunity in Urban America,” *Urban Studies* 42, no. 1 (January 1, 2005): 47-68.

⁷⁵ Devajyoti Deka, “Social and Environmental Justice Issues in Urban Transportation,” in *The Geography of Urban Transportation*, 3rd ed. (New York: The Guilford Press, 2004), 336.

⁷⁶ Roque Deherrera (Business Services Manager, Seattle Office of Economic Development), interview.

larger businesses who stabilize their cash flow by subleasing to small businesses.⁷⁷ Conversely, promoting low-impact production businesses outside of the MIC could lower demand for land and therefore lower rents for general industrial businesses.⁷⁸ Future research will be needed to clarify the interaction between the MIC and low-impact production businesses.

Other Benefits of Land Use Mixing

Finer-grained mixing of land uses can have a positive effect on safety. Low-impact production businesses would provide more daytime “eyes-on-the-street” than vacant retail or residential-only development. This 24-hour presence can reduce crime, which frequently arose as an issue in interviews.

Similarly, it can provide some land efficiencies. While low-impact production uses require more building space per worker than office uses (500 square feet per worker vs. 300 square feet per worker)⁷⁹, residential users could empty industrial parking spaces during the evening.⁸⁰ Likewise, mixing commercial and residential uses can make more efficient use of other infrastructure, as they tend to use roads and pipes at different times of the day.⁸¹ A diversity of land uses can lead to a more interesting living environment.

Economic Development Strategies

Jobs-Housing Mismatch and Place-based Strategies

As discussed above, the spatial-mismatch theory suggests that one cause of poverty is the physical separation between the poor and employment. Thus, place-based strategies seek to overcome or eliminate the spatial mismatch by either dispersing low-skilled minorities to live in job-rich areas, improving transportation options between the poor and jobs, or, as in this study, bringing appropriate jobs to the urban poor.⁸² In her review of social and environmental justice issues, Deka describes bringing jobs to poor areas as a “Herculean task,” whose efforts have had little success due to the strength of the opposing market forces.⁸³ However, other theorists such as Michael Porter, a Harvard economist, suggest that place-based strategies are needed “as a complement to (not a substitute for)

⁷⁷ *Seattle's Industrial Lands: Background Report* (City of Seattle Department of Planning and Development, May 2007), 26-35.

⁷⁸ The Pratt Institute Center for Community and Environmental Development, *Making it in New York: The Manufacturing Land Use and Zoning Initiative, Vol. 1*, June 25, 2001, 5, <http://mas.org/images/media/original/VOL1.PDF>.

⁷⁹ City and County of San Francisco Planning Department, *Community Planning in the Eastern Neighborhoods Rezoning Options Workbook: Draft* (San Francisco, CA: City and County of San Francisco, February 2003), 8, <http://www.sf-planning.org/Modules/ShowDocument.aspx?documentid=3649>.

⁸⁰ Elliott, *A Better Way to Zone*, 27.

⁸¹ *Ibid.*

⁸² Deka, “Social and Environmental Justice Issues in Urban Transportation,” 337.

⁸³ *Ibid.*

the many programs designed to increase human capital and meet the basic human needs of disadvantaged populations.”⁸⁴

Competition

A review of the community’s assets suggests that it has strengths that would support the creation of low-impact production businesses (see Table 15). These assets were identified from a literature review and interviews with economic development agencies, and could be expanded through the neighborhood planning process. They generally fall under categories that Porter believes represent the competitive advantages of poorer neighborhoods: strategic location, integration with regional clusters, unmet local demand, and human resources.⁸⁵

Table 15: Rainier Beach assets

Asset	Notes
Light rail	<p>The light rail should make it easier for shoppers and employees to move between Rainier Beach and the region.</p> <p>Traffic congestion could be eased for freight vehicles, to the extent that commuters choose to use the light rail rather than drive.</p> <p>The light rail focuses City investment in the region, which may lead to a willingness to try new approaches, such as using walk-all ways intersections to increase pedestrian safety and smooth freight delivery.</p> <p>Light rail could present a challenge to creating local jobs for local residents in that it makes it easier for more skilled workers from other parts of the city to access Rainier Beach.</p>
Other government investment	<p>In addition to the light rail investment, the City has other resources dedicated to the area. These include:</p> <ul style="list-style-type: none"> • Southeast Transportation Study • Office of Economic Development attention (e.g. the Rainier Valley Retail Strategy study, financing for the Healthy Food Economic Incentive Program)⁸⁶
Presence of established businesses	<p>As discussed in the attached paper on technical assistance, a number of established businesses already exist in the neighborhood. This provides an opportunity for new businesses to</p>

⁸⁴ Michael Porter, “New Strategies for Inner-City Economic Development,” *Economic Development Quarterly* 11, no. 1 (1997): 11.

⁸⁵ *Ibid.*, 13.

⁸⁶ City of Seattle Office of Economic Development, “Healthy Food Economic Incentive Program,” n.d., <http://www.rbcoalition.org/wp-content/uploads/2010/04/HealthyFoodBusinessIncentiveProgramFlyer.pdf>.

	<p>leverage their expertise and buying power.</p> <p>For example, the presence of successful restaurants could contribute to the success of a culinary prep center.</p>
Proximity to the Duwamish Manufacturing and Industrial Center	Proximity to the Duwamish MIC could lead to synergy of manufacturing expertise. Larger Duwamish companies could purchase supplies and services from Rainier Beach businesses
Proximity to the Port	The Port provides easy access to global shipping, and provides a number of businesses that need suppliers and subcontractors.
Proximity to I-5 highway	Rainier Beach’s proximity to the freeway, particularly in the southwest corner of the neighborhood could facilitate regional freight delivery. As will be discussed in this report, access is critical for small businesses.
Proximity to Lake Washington	Rainier Beach’s proximity to Lake Washington, combined with its parks and other greenspace, provide a pleasant visual environment. This can be an asset to businesses that need to meet clients at their place of business.
Cultural diversity	<p>Rainier Beach community members represent a number of cultures; the Rainier Valley is often cited as the most diverse zip code in the nation. This cultural diversity presents several potential competitive advantages to the community, including:</p> <ul style="list-style-type: none"> • Increased creativity and exchange of ideas⁸⁷ • Demonstrated entrepreneurial character. Immigrants’ willingness to relocate to the U.S. to seek a better life may show a willingness to take on risk for financial security. • Increased consumption and production of culturally specific niche goods • Potential draw for employers looking to locate to an area with a vibrant cultural life. • There is some evidence that employers prefer to hire recent immigrants. Porter reported a high level of satisfaction among employers of immigrant workers.⁸⁸
Arts groups	Arts groups such as SouthEast Effective Development’s SouthEast

⁸⁷ Steve Inskeep, “Studies: Diversity Spurs Workplace Creativity,” *National Public Radio*, January 15, 2007, <http://www.npr.org/templates/story/story.php?storyId=6858215>.

⁸⁸ Porter, “New Strategies for Inner-City Economic Development,” 16.

	Seattle Arts Council can enhance the community's creative production. ⁸⁹ Highly specialized niche products can be a key for small business production.
Youth	Interviewees stated that the large number of youth in Rainier Beach is perceived as a hindrance to business development. However, because much of the light industry workforce is nearing retirement, an abundance of potential young workers and apprentices could be of value to low-impact production businesses.
Access to capital	<p>Businesses choosing to locate in the Rainier Valley have access to certain types of capital that other business do not. For example, the Ballard Organic Soap company relocated to the Rainier Valley because the RVCDF offered financing while private banks did not.⁹⁰</p> <p>As an approved area for New Market Tax Credits, the Rainier Valley offers a tax incentive to businesses of all kinds to make the Rainier Valley their home.⁹¹</p> <p>Other capital sources are tied to the resident's demographics rather than their location. For example, the Refugee Resettlement Office's Jump Start Fund makes microloans available to refugee entrepreneurs.⁹²</p>
Projected population growth	The introduction of transit oriented development around the Henderson station could be a boon for businesses. As discussed in the Office of Economic Development Retail Strategy study, these new residents will need new furniture and other home furnishings. ⁹³ Businesses that have a retail component should be able to capture some of this new spending power.
Workforce training agencies	<p>A number of nonprofit groups in the region provide job training, leading to the potential for new, skilled workers. Among these are:</p> <ul style="list-style-type: none"> • South Seattle Community College's Puget Sound Industrial

⁸⁹ Ann Markusen, "Longer View: Targeting Occupations in Regional and Community Economic Development," *Journal of the American Planning Association* 70, no. 3 (2004): 253.

⁹⁰ "Vibrant Community Attracts Organic Soap Company," *Rainier Valley Community Development Fund*, n.d., http://www.rvcdf.org/success_stories_ballard.php.

⁹¹ City of Seattle Office of Economic Development, "City establishes \$40 million financing program to spur growth in Seattle neighborhoods," May 3, 2010, http://www.cityofseattle.net/economicdevelopment/pdf_files/Release%20-%20NMTC%20Program%205-3-10.pdf.

⁹² Refugee Resettlement Office, "Jump Start Fund: Building Strong Communities Through Micro-Lending," *Jump Start Fund*, n.d., <http://www.jumpstartfund.org/>.

⁹³ Community Land Use and Economics Group, LLC, *Retail Development Strategy for Rainier Valley* (Arlington, Virginia: City of Seattle Office of Economic Development, December 2009), <http://www.seattle.gov/economicdevelopment/pdfs/Retail%20development%20strategy%20for%20Rainier%20Valley%20-%20final%20report.pdf>.

	<p>Excellence Center - supports workforce training and apprenticeships for high-demand occupation careers in the Duwamish corridor</p> <ul style="list-style-type: none"> • The Technology Access Foundation – provides technology training for underserved children of color • Refugee Women's Alliance & Refugee Federation Service Center - helps adult refugees and immigrants gain language and vocational skills • Casa Latina – connects new Latino immigrants with education and employment opportunities • Asian Counseling and Referral Service – provides training and support to Asian Pacific Americans in King County • South Seattle Community College – offers vocational training in Automotive Technology, Computer Aided Drafting & Design Technology, Culinary Arts, Welding Fabrication, and more • Renton Technical College’s Construction Center of Excellence – offers educational training for the construction career pathway
<p>Business assistance agencies</p>	<p>A number of business assistance agencies are available in the region. These are discussed in more detail in the attached paper on technical assistance.</p> <ul style="list-style-type: none"> • Washington Manufacturing Services - provides business owners with manufacturing solutions including, technology transfer, LEAN manufacturing services and quality improvement techniques of small and medium sized manufacturers • Community Capital Development – provides financial services and education, entrepreneurial and business incubator services including women and minority business services • Burst for Prosperity – provides assistance to small businesses and develops career pathways for low-income individuals. • Center for Advanced Manufacturing Puget Sound - collaborates with manufacturers and supply chain partners; pursues skill training for workers
<p>Low rents</p>	<p>While low rents may be temporary or “illusory”⁹⁴, they do encourage businesses to locate to the area. Additionally, they may</p>

⁹⁴ Porter, “New Strategies for Inner-City Economic Development,” 13.

encourage local entrepreneurs to move their businesses from their garage to larger space.

Moreover, low residential rents make it easier for employers to pay a living wage, since their worker's housing and transportation costs are lower. Industrial employers have noted that it is hard for their employees to afford the cost of living in Seattle.

Cluster Theory

One method of targeting jobs for economic development is to use a cluster analysis to determine growing sectors. Clusters are geographically dense groupings of firms in related industries; agglomeration of economies causes certain types of firms to locate near suppliers or customers, attaining greater competitive strength and displaying higher rates of innovation than firms located outside these clusters.⁹⁵ The strategy identifies clusters of industries and occupations to target based on capturability, high relative employment growth rates, connectivity across industries, fit with underemployed workforce groups, and potential for entrepreneurship.⁹⁶ Targeting provides the additional benefit of helping to focus workforce development training.

However, if a job-creation strategy is to succeed in Rainier Beach, it needs to match the skill-set of the Rainier Beach residents. Unfortunately, the precise nature of the community's skill-set is unknown. The economic development professionals and City of Seattle staff interviewed for this research were unaware of large-scale data that would indicate where community members worked. However, information may be available for the members of the community who reside in low-income housing. As a condition of housing, these residents are required to submit employment verification, which indicates where their employer is located. Additionally, graduates of nearby workforce training program, such as the Puget Sound Industrial Excellence Center, may have identifiable skills. Future research could work with these organizations to determine where graduates of career track programs live. The neighborhood planning process will also provide an opportunity to learn about the location and types of jobs directly from residents.

In the absence of Rainier Beach-specific data, this research relies on the socioeconomic status indicated by 2000 census data and confirmed by interviews with neighborhood service providers. In other words, the jobs that are created must be open to workers who have lower English skills and lower levels of education than the general population). However, many positions that are available to this group of workers do not provide livable wages. For example, attracting fast food employers might result in an increased number of jobs, but would provide only marginal access to income or benefits. Instead, job attraction should focus on "middle-wage" jobs. The Seattle Jobs Initiative established two criteria for middle-wage jobs: they must have a median wage of at least \$17 per hour (in 2004), and less than 40%

⁹⁵ "Definition of Economic Clusters," *UW Evans School of Public Affairs Community Vitality Project*, n.d., <http://cvp.evans.washington.edu/?p=839>.

⁹⁶ Capturability refers to the extent to which industries are unevenly distributed across the U.S.; Markusen, "Longer View," 256.

of the positions can be currently held by people with a bachelor's degree or higher.⁹⁷ On an annual basis, assuming full time employment, this is equivalent to \$35,360. In 2004, these jobs accounted for 22.3% of the King County workforce.⁹⁸

Cluster Analysis Applied to Rainier Beach

The low-impact production jobs discussed in this paper are a small subset of the “Production, Distribution, and Repair” (PDR) cluster. This cluster was identified by the City of San Francisco, and is discussed in more detail in the San Francisco PDR Case Study. PDR jobs are a part of the larger light industry sector and overlap with related sectors. This nested relationship is shown in Figure 18. This section discusses the PDR, light industry, and related sectors which contain low-impact production jobs, and then concludes by examining the contrast between the region's top long-term growth industries and middle-wage job opportunities.

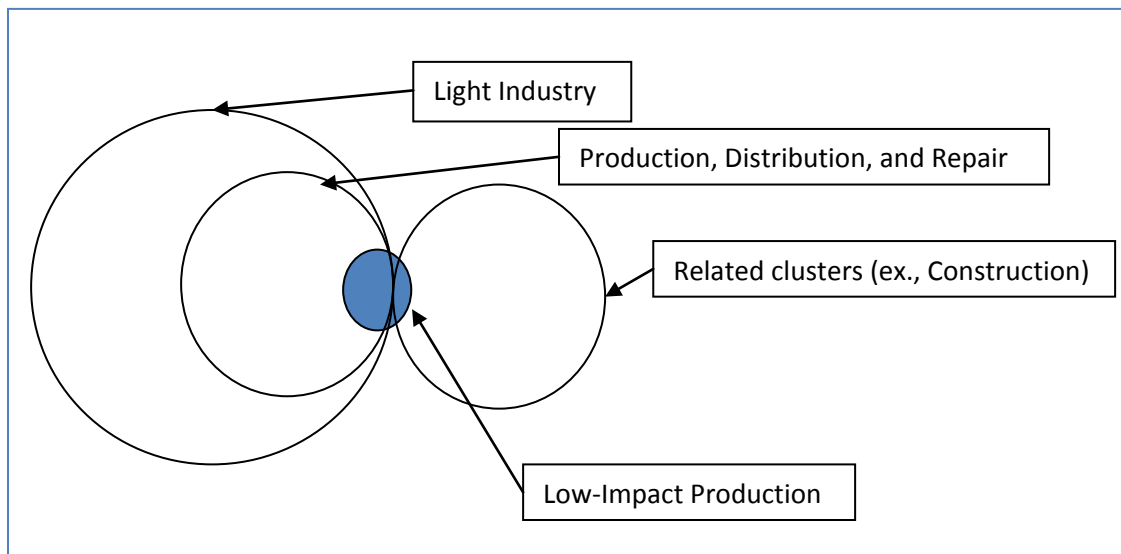


Figure 18: Industrial classifications diagram (not to scale). Low-impact production jobs form a small part of light industry.

In his work studying the comparative advantage of neighborhoods like Rainier Beach, Porter identified advantageous clusters that overlap significantly with those discussed in this section. Porter's clusters include “food processing and distribution, printing and publishing, light manufacturing, recycling and remanufacturing, business support services for corporation, and entertainment and tourist attractions.”⁹⁹

⁹⁷ Paul Sommers, Mark Gardner, and Juliet Scarpa, *Skills Required: Preparing Puget Sound for Tomorrow's Middle-Wage Jobs* (Seattle Jobs Initiative, March 3, 2008), 2,

<http://www.seattlejobsinitiative.com/policy/publications/documents/SJIMWJReport07242008.pdf>.

⁹⁸ Ibid.

⁹⁹ Porter, “New Strategies for Inner-City Economic Development,” 13.

Production, Distribution, and Repair

Beginning in 2000, the City of San Francisco conducted a detailed analysis of their light industrial lands. San Francisco refers to the industrial users of these lands as “production, distribution, and repair businesses to avoid the “smokestack” connotation of the term “light industry”. This cluster has less of a focus on manufacturing than the OED industrial cluster, and more on smaller firms that support the city’s other economic drivers. One challenge to understanding the cluster is that it can seem like a “random collection of light industries,” because it is often “defined by what it is not: office...large retailers, housing, [and heavy manufacturing].”¹⁰⁰ Ultimately, the city decided that seventy percent of PDR uses were incompatible with residential uses because of the level of truck traffic required. However, there remaining businesses within the cluster would be compatible. PDR businesses include:

Businesses that produce goods:

- Fashion/garment design manufacture
- Event production and catering
- Construction and landscaping contractors
- Printers, designers, photographers, graphic designers
- Food processing
- Manufacturers of furniture, specialty fixtures, custom wood, and metal work, jewelry, machinery
- Film producers and sound recording

Businesses that move goods, people, or information:

- Delivery services: messengers, airport shuttle vans, taxis, limousines, trucks
- Food and beverage wholesalers and distributors serving groceries stores, restaurants, hotels
- Wholesalers and retailers of furniture, flowers, equipment, appliances, food & beverages, jewelry, machinery
- Interior design and showrooms
- Construction storage
- Building material suppliers
- Self storage and moving companies
- Storage of essential equipment and materials, shipping & handling, and trucking

Businesses that repair goods:

- Repair shops for cars, trucks, and small boats
- Repair shops for equipment, appliances, and furniture

¹⁰⁰ Aimee Lewis Strain and Sharon Simonson, “Eastern Neighborhood Plan Materializes: New plan, a Decade in the Making, Creates Rules, Seeks to Preserve Fading Light Industry,” *The Registry: The Bay Area Real Estate Journal*, April 2009, 14.

- Business and home repair services¹⁰¹

These businesses can be further broken down into “light”, “medium”, and “core” PDR categories.

Characteristics of Light PDR

Light PDR work is generally limited to repair and service businesses that provide direct services to neighborhood residents and businesses, such as:

- auto repair
- small catering services
- graphic design
- small radio stations
- small messenger operations

These businesses are relatively small, using only about 450 square feet, and requiring loading requirements similar to retail stores (see Figure 19). While these businesses are compatible with residential uses, they cannot compete for space as effectively as similarly-sized retail.¹⁰²



Figure 19: Examples of Light PDR workspace.¹⁰³ Note the small space and equipment needs.

Characteristics of Medium PDR

Medium PDR businesses are more production and distribution focused than light PDR. They include:

- printers and publishers

¹⁰¹ City and County of San Francisco Planning Department, *Industrial Land in San Francisco: Understanding Production, Distribution, and Repair*, July 2002, 17-18, <http://www.sf-planning.org/Modules/ShowDocument.aspx?documentid=4893>.

¹⁰² City and County of San Francisco Planning Department, *Community Planning in the Eastern Neighborhoods*, 7.

¹⁰³ *Ibid.*, 6-7.

- showrooms
- landscaping and horticultural services
- film producers
- caterers
- custom woodworkers and furniture makers
- jewelry wholesale
- appliance repair
- plumbing supply

Such businesses require more space than light PDR, but generally need less than 10,000 square feet, or about 500 square feet per worker. This space is used for storage, processing, and to accommodate large equipment such as cutting tables and benches, sound mixing equipment, sewing tables, projectors, welding machinery, and drill presses (see Figure 20). These large items lead to a need for ground floor and sometimes warehouse space. Unlike light PDR, these users require moderate levels of trucking activity, either daily or weekly shipping or receiving. However, attractive business space is important, as they have more interaction with customers in their own buildings. Loading and other noise issues require special consideration in residential areas.¹⁰⁴



Figure 20: Medium PDR workspaces.¹⁰⁵ These spaces are spacious enough to accommodate large equipment and storage.

Characteristics of Core PDR

Core PDR businesses are the most intensive of the PDR businesses. These include:

- small trucking operations

¹⁰⁴ Ibid., 7-8.

¹⁰⁵ Ibid., 7.

- apparel manufacturing
- distribution centers for produce, canned food, vegetables, meat, seafood, and flowers
- suppliers of materials used in the construction industry-lumber, pipes, large equipment rentals, and electrical
- large showrooms
- paper manufacturing
- large publishing operations

They often require outdoor work and storage space, leading to an increase chance of noise and odors and less likeliness of being neighborhood compatible. These businesses require the largest buildings, averaging 600 feet per employee (see Figure 21). Finally, these uses often have the largest freight needs, employing forklifts and outdoor loading docks for 24-hour loading and unloading.¹⁰⁶



Figure 21: Core PDR workspace.¹⁰⁷ Core PDR businesses need high shelving for inventory and supply storage and may use forklifts for 24-hour loading and unloading.

A full list of PDR occupations by Standard Industrial Classification is included in Appendix IV.

PDR Wages and Access

PDR jobs provide living wages for San Franciscan families. Importantly, while PDR jobs paid an average wage for San Francisco, they paid much better than service industry jobs (see Table 16); in 2001 PDR jobs paid \$21/hour on average, hotel and retail work paid \$14/hour, and eating and drinking service jobs paid just \$11.50/hour.¹⁰⁸

¹⁰⁶ Ibid., 8.

¹⁰⁷ Ibid.

¹⁰⁸ City and County of San Francisco Planning Department, *Industrial Land in San Francisco*, 29.

Table 16: Average wages in selected industries in San Francisco. Note that PDR jobs pay wages equal to the city average.

Industries	Employment	Hourly
All Industries	507,355	\$ 22.10
PDR Industries	110,289	\$ 21.19
Production	49,668	\$ 21.22
Distribution	36,475	\$ 20.63
Repair	6,159	\$ 16.79
Other PDR	17,988	\$ 23.72

Source: Reprinted from Industrial Land in San Francisco, p.29

The PDR jobs were largely held by people without extensive education (See Table 17). Moreover, half of PDR jobs paid more than \$16/hour.

Table 17: Distribution of wage levels of San Francisco PDR jobs by educational attainment. PDR jobs provide good wages to people with low educational levels.

Wages	High School	Vocational Training	2 Year College	4 Year College	Beyond College	Total
\$6.75 or less	0.3%	0.3%	0.0%	0.0%	0.0%	1%
\$6.76 - 10	9.3%	1.5%	0.8%	1.5%	0.0%	13%
\$11 - 15	21.7%	2.8%	5.5%	4.3%	1.3%	36%
\$16 - 20	16.6%	3.3%	5.5%	4.3%	1.5%	31%
\$21 - 25	5.8%	2.3%	2.3%	1.0%	0.5%	12%
\$26 +	3.3%	1.5%	1.8%	0.8%	0.5%	8%
Total	56.90%	11.60%	15.90%	11.80%	3.80%	100%

Source: Reprinted from Industrial Land in San Francisco, p.31.

PDR jobs also tended to offer career ladders, or opportunities for career advancement, to unskilled workers. While over a third of PDR jobs could be accessed with only short-term on-the-job training, a sizeable portion required moderate and long-term on-the-job training. In contrast, two-thirds of sales/service positions required only short term on-the-job training (see Figure 22). This means that once an employee is hired in a sales and service position, there is little chance for him to improve his wages. In contrast, once an employee obtains an entry level position in a PDR job, he begins acquiring skills that will lead to new, more advanced, and better paying opportunities.

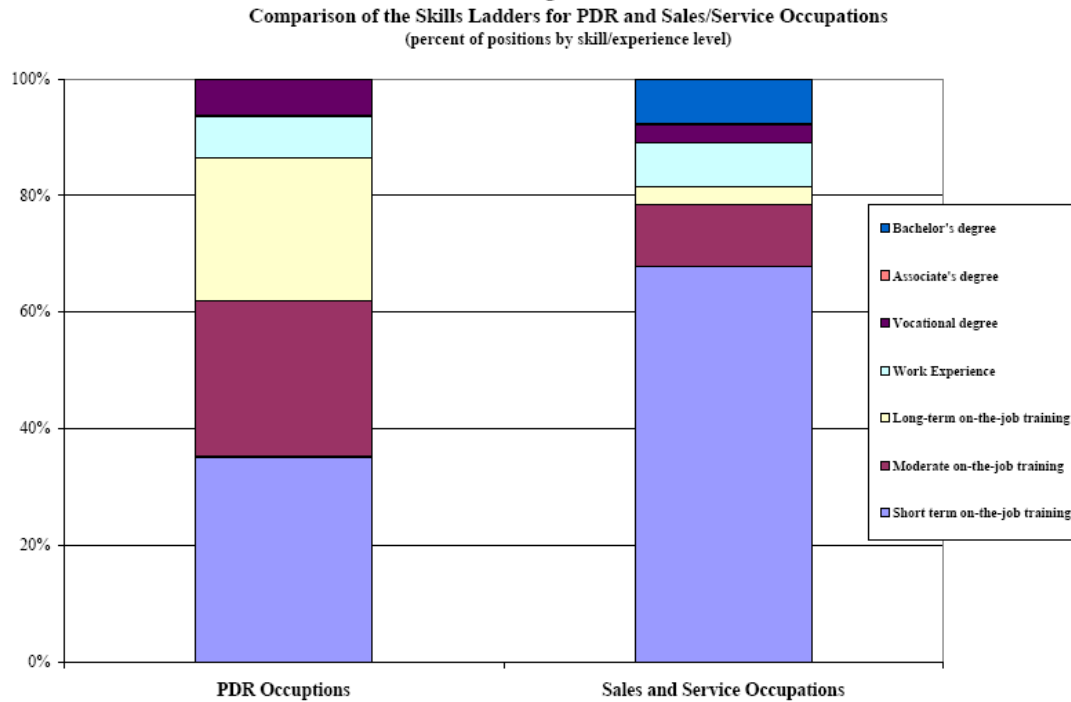


Figure 22: Skill ladders for PDR and sales/service occupations.¹⁰⁹ The high percentage of sales and service jobs requiring only short term on-the-job training (light blue), means that there are fewer opportunities to improve to advance to higher skilled jobs.

This difference between production and service jobs is due in part to the fact that service industry and retail sales businesses are primarily local-market serving. Rather than bringing in money from other regions, these businesses compete for larger shares of the local market. Because the size of the local market is relatively fixed, the only way to compete is to keep wages low.¹¹⁰

However, there was also variation within the PDR wages (see Table 18). For example, apparel manufacturers earned \$15/hour, while film and video producers earned \$26/hour.

¹⁰⁹ Hausrath Economic Group, *San Francisco's Eastern Neighborhoods Rezoning Socioeconomic Impacts: Draft for Public Review* (Oakland, CA: City And County Of San Francisco Planning Department, March 2007), 164, <http://www.sf-planning.org/Modules/ShowDocument.aspx?documentid=2531>.

¹¹⁰ Richard McGahey and Jennifer S. Vey, *Retooling for Growth: Building a 21st Century Economy in America's Older Industrial Areas* (Washington, D.C.: Brookings Institution Press, 2008), 288.

Table 18: Wage variation within selected San Francisco PDR industries, 2001¹¹¹

Industries	Employment	Hourly
Food and Kindred Products Manufacturing (SIC 20)	2,915	\$ 17.21
Textile Mill Products Manufacturing (SIC 22)	895	\$ 11.07
Apparel Manufacturing (SIC 23)	10,289	\$ 14.91
Printing & Publishing Manufacturing (SIC 27)	8,792	\$ 25.51
Auto Repair (SIC 753)	2,043	\$ 19.82
Film and Video Production (SIC 781)	1,470	\$ 26.14
Graphic Design/Commercial Photography (Included in SIC 733)	4,962	\$ 21.33

Source: Reprinted from Industrial Land in San Francisco, 29

Industrial Employment

While the City of Seattle doesn't treat PDR jobs as a discrete cluster, it does track the viability of the greater light industrial manufacturing sector. Of its eight target clusters, OED calls out manufacturing as a cluster particularly well suited for meeting the needs of residents without a college education.¹¹² The City defines the manufacturing sector as industrial machinery and fabricated metal, aerospace, printing and publishing, stone, clay, glass and concrete products, home and office furnishings, food and beverage production, construction, and transportation and wholesale distribution. While the analysis of this sector is not limited to jobs that are neighborhood compatible, it does provide a context for the greater production environment.

Manufacturing jobs have traditionally provided job stability, steady salaries, the potential for career advancement, and benefits.¹¹³ Manufacturing also generates a high direct employment multiplier of 2.4; in other words, every manufacturing job supports 1.4 non-manufacturing jobs.¹¹⁴ The extent to which this holds true for low-impact production jobs is unclear. This sector can also lead to industry-wide improvements. As Brookings Institution authors McGahey and Vey state, "thousands of studies of innovation suggest a pretty close connection between fabrication and invention."¹¹⁵

Targeting the industrial sector is particularly appropriate in Seattle for several reasons, including:

- From 2005-2008, Basic Industry (construction and resources, manufacturing, and wholesale trade, transportation and utilities) employment in the City of Seattle grew by more than 10% percent, compared to a net decline of 0.6% nationwide.
- Industrial business owners of all sizes were successfully integrating flexibility and innovation in their processes.

¹¹¹ City and County of San Francisco Planning Department, *Industrial Land in San Francisco*, 29.

¹¹² OED's target clusters are Manufacturing, Maritime, Life Sciences, Information and Communications Technology, Global Health/Healthcare, Clean Technology, Film and Music, and Tourism.

¹¹³ McGahey and Vey, *Retooling for growth*, 211.

¹¹⁴ *Ibid.*, 250.

¹¹⁵ *Ibid.*, 255.

- The city's desirable location near regional, national and international clients, the port, highway, and rail infrastructure are all desirable industrial assets.
- Seattle basic industry jobs pay an average of \$54,000, or \$1,200 more than the city average.
- An aging workforce will create openings for qualified candidates.
- Basic Industry contributed significantly to tax revenue; in 2008 basic industry generated \$37.8 million in Business and Occupation tax revenues, and \$52.3 million in sales tax revenues (see Table 19).¹¹⁶

¹¹⁶ Community Attributes, *Basic Industries Economic Impact Analysis* (Seattle, WA: City of Seattle Office of Economic Development, July 2009), iv, http://www.seattle.gov/economicdevelopment/pdf_files/CAI%20BasicIndustries%202009%200803%20Final.pdf.

Table 19: Summary of Basic Industry economic impacts, 2001 & 2008.¹¹⁷ Note that Basic Industry (which includes low-impact production jobs) has contributed significantly to B&O and sales taxes.

Summary of Basic Industry Economic Impacts, 2001 & 2008				
City of Seattle	2001	2008	Change	% Change
Jobs				
Basic Industry	98,780	90,440	(8,340)	-8%
Const. and Res.	21,680	25,170	3,490	16%
Manufacturing	35,040	31,150	(3,890)	-11%
WTU	42,060	34,120	(7,940)	-19%
Non-Basic Industry	405,490	406,150	660	0%
Total	504,270	496,590	(7,680)	-2%
Workplaces				
Basic Industry	4,227	4,349	122	3%
Percent of total	19%	18%	-1%	
Gross Business Revenue (bil. 2008\$)*				
Basic Industry	\$ 14.5	\$ 18.2	\$ 3.7	26%
Percent of total	31%	30%	-1%	
Taxable Retail Sales (bil. 2008\$)				
Basic Industry	\$ 5.2	\$ 6.1	\$ 1.0	19%
Percent of total	32%	36%	4%	
B&O Tax Revenues (mil. 2008\$)*				
Basic Industry	\$ 35.2	\$ 37.8	\$ 6.6	12%
Percent of total	41%	38%	-3%	
Sales Tax Revenues (mil. 2008\$)				
Basic Industry	\$ 44.0	\$ 52.3	\$ 8.3	19%
Percent of total	32%	36%	4%	
Average Wage (2008\$)				
Basic Industry Statewide	\$ 49,100	\$ 52,700	\$ 3,600	7%
Statewide average	\$ 44,100	\$ 46,600	\$ 2,500	6%
Seattle MICs				
Duwamish MIC				
Jobs				
Basic Industry	62,640	65,330	2,690	4%
Non-Basic Industry	39,820	38,460	(1,360)	-3%
Workplaces	22,820	26,870	4,050	18%
Workplaces	1,826	1,890	64	4%
BINMIC				
Jobs	15,020	14,520	(500)	-3%
Basic Industry	9,290	8,010	(1,280)	-14%
Non-Basic Industry	5,730	6,510	780	14%
Workplaces	624	654	30	5%

Sources: Community Attributes, Washington State Employment Security Department Quarterly Census of Employment and Wages, Puget Sound Regional Council (PSRC), Washington State Department of Revenue, City of Seattle Department of Executive Administration.

*Gross Business Revenues and B&O Tax are projected for 2008. Tax exemptions and income reporting prevent direct comparisons of business revenue and B&O tax receipts.

¹¹⁷ Ibid.

However, there are risks to targeting industrial jobs. These include:

- **Changes in growth and decline over time:** Basic Industry increased by 9,000 jobs from 1995 to 2000, decreased by 20,000 jobs from 2000 to 2005, then added 8,300 jobs between 2005 and 2008 (see Figure 23).¹¹⁸

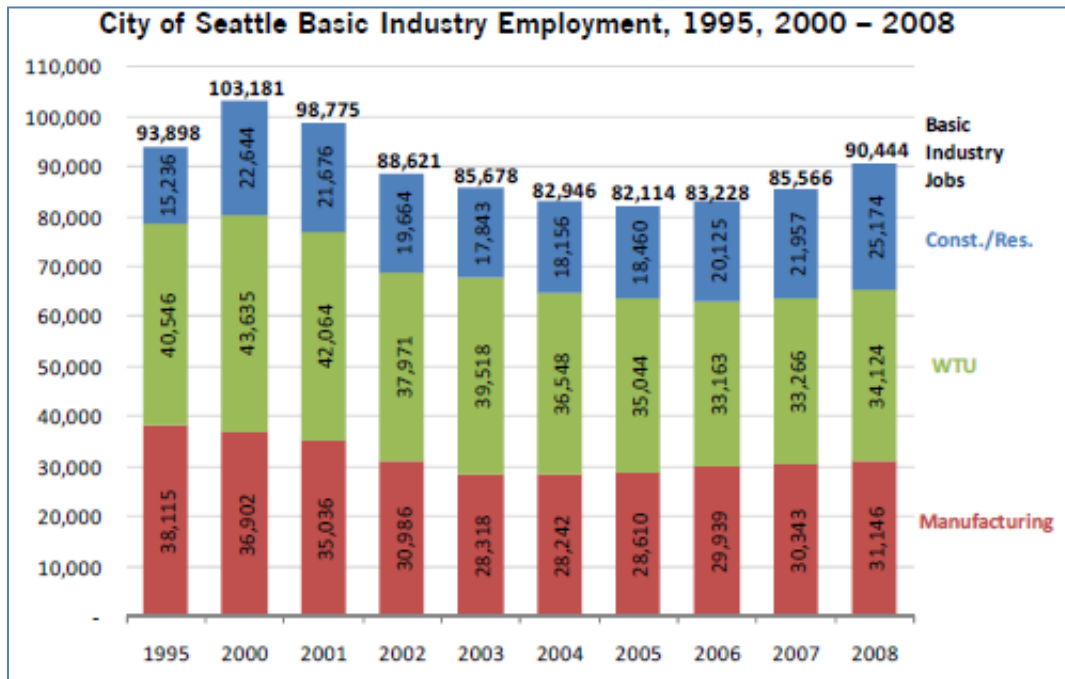


Figure 23: Changes in basic industry employment over time.¹¹⁹ WTU refers to “Wholesale, Trade and Utilities”.

- **Changes in global production:** As SJI notes, “The region’s economy seems to be marching away from a historical reliance on industries such as basic manufacturing...that provided many middle-wage job opportunities for people who have not earned college degrees.”¹²⁰ This is a result of the combination of an increasingly technology-dependent production process, and an increasing reliance on outsourcing to countries with cheaper labor.¹²¹
- **Wage variation by occupation:** While the industry average is high, industrial jobs include white collar jobs which drive up the average. Wages for assemblers and movers, for example, are considerably lower (see Figure 24).

¹¹⁸ Ibid., 11.

¹¹⁹ Ibid.

¹²⁰ Sommers, Gardner, and Scarpa, *Skills Required*, 3.

¹²¹ W. Scott Carter (Principal, Pacific Real Estate Partners), interview, April 23, 2010.

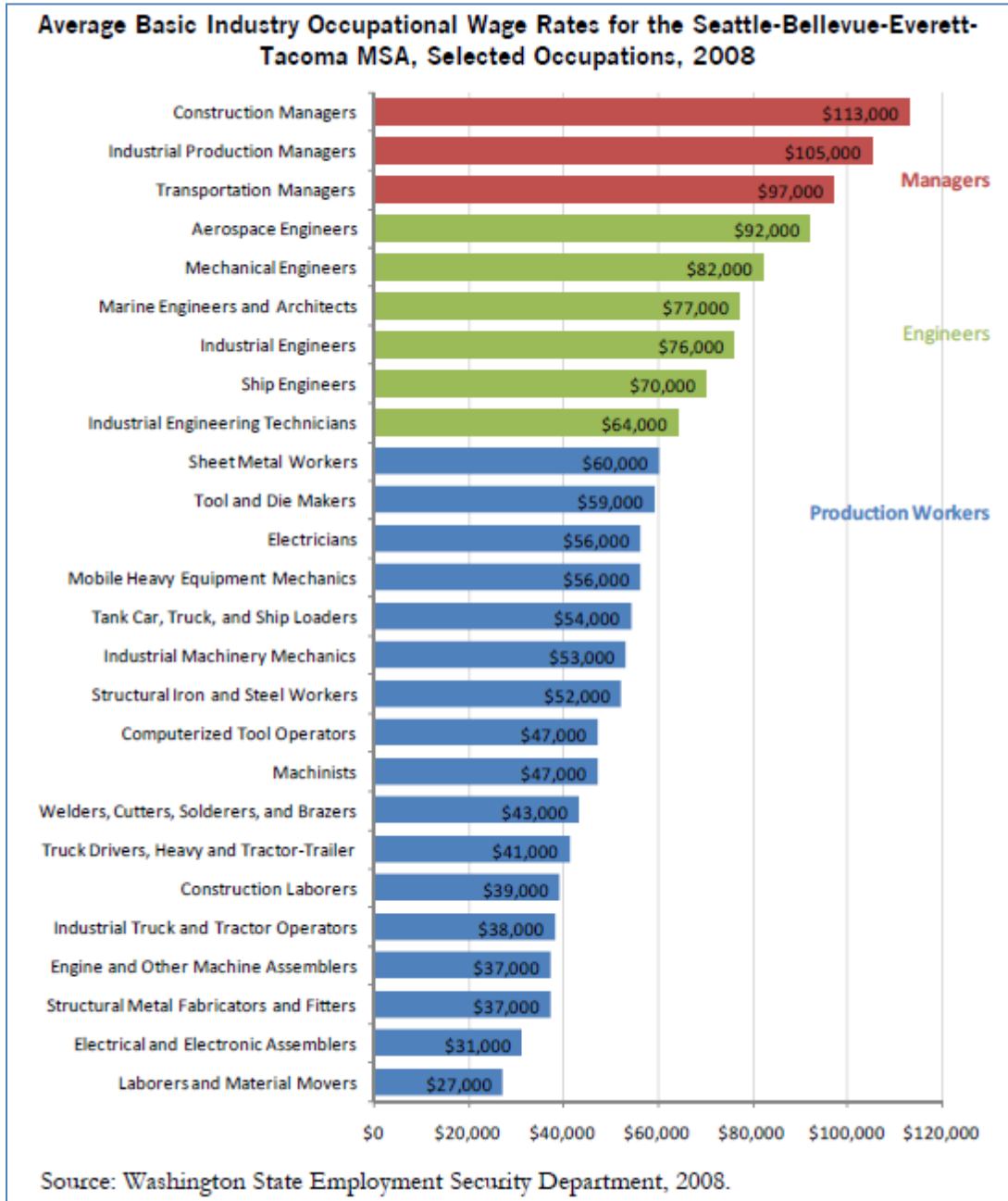


Figure 24: Average Basic Industry occupational wage rates. Note the wide variation of wages within the industry.¹²²

- **Recent decline:** The manufacturing industry saw the third greatest rate of decline of Seattle’s key industries during the last two years of the recession (see Table 20).¹²³

¹²² Community Attributes, *Basic Industries Economic Impact Analysis*, 24.

¹²³ *Job Trends Report: Recession - 2 Year Report* (Seattle Jobs Initiative, February 2010), 2, http://www.seattlejobsinitiative.com/policy/publications/documents/SJI_Job_Trends_Report_Jan_2010_vFINAL.pdf.

Table 20: Job growth by select industries, December 2007 – December 2009.¹²⁴ Note the high relative rate of decline in manufacturing during the recent recession.

Industry	US	WA	Seattle Metropolitan Area
Natural Resources & Mining	- 40,000 - 5%	- 2,200 - 28%	-300 - 30%
Construction	- 1,616,000 - 22%	- 57,200 - 27%	- 33,000 - 33%
Manufacturing	- 2,147,000 - 16%	- 37,500 - 13%	- 17,800 - 11%
Trade, Transportation & Utilities	- 1,763,000 - 7%	- 40,300 - 7%	- 20,900 - 8%
Information	- 219,000 - 7%	- 1,500 - 1%	100 0%
Financial Activities	- 548,000 - 7%	- 12,100 - 8%	- 9,600 - 11%
Professional & Business Services	- 1,295,000 - 7%	- 21,000 - 6%	- 21,900 - 10%
Education & Health Services	886,000 5%	24,200 7%	13,100 8%
Leisure and Hospitality	- 455,000 - 3%	- 17,400 - 6%	- 10,200 - 7%
Other Services	- 143,000 - 3%	- 2,200 - 2%	- 600 - 1%
Government	98,000 0.4%	10,500 2%	2,900 1%
TOTAL	- 7,242,000	- 156,700	- 98,200

Source: Reprinted from *Job Trends Report: Recession - 2 Year Report*

Construction, Aerospace, Logistics and International Trade, Green Building

While not technically light industrial, the Seattle Jobs Initiative provides other types of middle wage jobs that could be relevant to the Rainier Beach discussion. These include the following: construction, aerospace, logistics and international trade, and green building (see Table 21).¹²⁵ The full list of the Seattle Jobs Initiative's middle wage job cluster is provided in Appendix II.

¹²⁴ Ibid.

¹²⁵ Note: This report excludes SJJ's Health care, Professional and Business Services, and Leisure and Hospitality Services, because of their dissimilarity to production work. Clean technology has been eliminated because Puget Sound clean technology jobs are "likely to be located in recycling and remediation area, such as hazardous materials removal workers and refuse and recyclable material collectors"

Table 21: Expected direct employment growth by industry for the Puget Sound region, 2004-2014. Note the high percentage of jobs that will provide livable wages without a four-year degree

	Projected 2014 New Direct Employment	Number of New Industry Cluster Jobs			Percent of All New Direct Industry Cluster Jobs		
		Less than \$17/hr Jobs	Middle Wage Jobs	BA+ Jobs	Less than \$17/hr Jobs	Middle Wage Jobs	BA+ Jobs
Traditional Industries							
Construction	21,398	3,064	17,474	860	14%	82%	4%
Aerospace	14,253	1,626	6,181	6,446	11%	43%	45%
Logistics & International Trade	7,757	2,959	3,959	839	38%	51%	11%
Service Sector Industries							
Health Care	28,671	11,732	7,739	9,200	41%	27%	32%
Professional & Business Services	12,481	2,573	2,063	7,845	21%	17%	63%
Leisure & Hospitality	6,850	4,875	978	997	71%	14%	15%
Emerging Industries							
Green Building†	2,139	306	1,747	86	14%	82%	4%
Clean Technology‡	306	74	168	64	24%	55%	21%

† The Green Building Industry Cluster is assumed to represent roughly 10% of the total Construction Industry.

‡ The Clean Technology Industry Cluster is made up of the following industries, as identified by the Puget Sound Regional Council: Other Electric Power Generation; Environmental Consulting Services; Solid Waste Combustors and Incinerators; Air Purification Equipment Manufacturing; Materials Recovery Facilities; Environment, Conservation and Wildlife Organizations; and Hazardous Waste Treatment and Disposal.

Source: Reprinted from *Skills Required: Preparing Puget Sound for Tomorrow's Middle-Wage Jobs*, p.13.

Note: Data based on Washington State Employment Security Department long-term employment projections.

Examples of middle-wage occupations within these sectors include:

Middle-Wage Occupations in the Construction Industry Cluster

- Carpenters
- Construction laborers
- First-line supervisors/managers of construction trades and extraction workers
- Electricians
- Painters, construction and maintenance
- Plumbers, pipefitters, and steamfitters
- Drywall and ceiling tile installers
- Roofers
- Construction managers
- Cost estimators
- Tapers
- Sheet metal workers
- Heating, air conditioning, and refrigeration mechanics and installers
- First-line supervisors/managers of office and administrative support workers
- Glaziers
- Elevator installers and repairers
- Pipelayers
- Executive secretaries and administrative assistants
- Maintenance and repair workers
- Tile and marble setters
- Payroll and timekeeping clerks

Aspects of these jobs might be compatible within a residential neighborhood. Small contractors and roofers could locate industrial service offices in Rainier Beach. This would allow them access to wholesale materials and storage space in the Duwamish MIC, but provide a pleasant space to meet clients. Alternatively, incubator or flex space, discussed below, could provide a small amount of storage for materials. Most of the traffic that would be generated would be in small trucks, but deliveries of supplies might need larger trucks. These jobs would also make limited use of the light rail. Laborers and mechanics often need to carry their own tools, and would therefore prefer to commute in cars.¹²⁶ Note that SJI finds that the construction sector tends to have high rates of unemployment due to the cyclical nature of the building cycle.¹²⁷

Middle-Wage Occupations in the Aerospace Industry Cluster

- Drafters
- Purchasing Agents
- Industrial Engineering Technicians
- Business Operations Specialists
- Engineering Technicians
- Executive Secretaries and Administrative Assistants
- Electrical and Electronics Repairers, Commercial and Industrial Equipment
- First-Line Supervisors/Managers of Production and Operating Workers
- Machinists
- Tool and Die Makers
- Welders, Cutters, Solderers, and Brazers
- Industrial Machinery Mechanics
- Transportation Inspectors
- Maintenance and Repair Workers
- Cost Estimators
- Production, Planning, and Expediting Clerks
- Mechanical Drafters
- Painters, Transportation Equipment

¹²⁶ Marshall Foster (Director of Planning, Seattle Department of Planning and Development), interview.

¹²⁷ Sommers, Gardner, and Scarpa, *Skills Required*, 10.

- Computer-Controlled Machine Tool Operators, Metal and Plastic
- Metal Workers
- Maintenance Workers, Machinery

As with the construction industry occupations, several of these positions could have offices based in Rainier Beach. However, a more likely scenario is for entrepreneurs in these fields to operate out of small industrial spaces in Rainier Beach.

Middle-Wage Occupations in the Logistics & International Trade Industry Cluster

- Transportation Workers
- First Line Supervisors of Transportation and Material Moving Machine and Vehicle Operators
- First Line Supervisors of Office and Administrative Support Workers
- Maintenance and Repair Workers
- First Line Supervisors of Helpers, Laborers, and Material Movers
- First Line Supervisors of Mechanics, Installers, and Repairers
- Dispatchers

Opportunities to leverage the logistics and international trade cluster in Rainier Beach are more limited due to the distribution industry's reliance on heavy truck traffic. However, small scale operators have been successful. One example is the Universal Transportation & Translations (UT&T) in Othello. UT&T transports people to medical appointments and provides translation services. After receiving a loan from the RVCDF, they now own 14 vehicles and employ 15 people.¹²⁸ SJI notes that opportunities for advancement within the Logistics and International trade industry may be limited by educational constraints.

Top Long-Term Growth Industries and Occupations

Before concluding the discussion of industrial clusters, it should be noted that the sectors do not coincide with the overall long-term projected job openings in Puget Sound. These jobs generally require extensive education (see Table 22). Note that the greatest rate of growth is expected to come from the software publishing industry, although the greatest number of openings will be in the health care and social assistance industry, which does contain job ladders for positive employment.¹²⁹

¹²⁸ "Loan Fund Helps Stabilize Business," *Rainier Valley Community Development Fund*, n.d., http://www.rvcdf.org/success_stories_utt.php.

¹²⁹ Sommers, Gardner, and Scarpa, *Skills Required*, 24.

Table 22: Top industries by long-term growth projections (annual openings 2012-2017), King County. Note the lack of overlap with middle wage jobs.¹³⁰

Title	Estimated Employment 2007	Estimated Employment 2012	Estimated Employment 2017	Avg. Annual Growth Rate 2007 - 2012	Avg. Annual Growth Rate 2012 - 2017	Avg. Annual Opening Due to Growth 2007 - 2012	Avg. Annual Opening Due to Growth 2012 - 2017	Avg. Annual Total Openings 2007 - 2012	Avg. Annual Total Openings 2012 - 2017
Computer Software Engineers, Applications	20,043	22,991	26,605	2.80%	3.00%	590	723	862	1,122
Computer Software Engineers, Systems Software	13,905	15,830	18,382	2.60%	3.00%	385	510	573	785
Retail Salespersons	32,972	33,577	36,069	0.40%	1.40%	121	498	1,259	1,442
Laborers and Freight, Stock, and Material Movers, Hand	20,166	19,776	22,001	-0.40%	2.20%	-78	445	609	1,058
Office Clerks, General	23,941	24,608	26,795	0.60%	1.70%	133	437	578	903
Registered Nurses	20,202	21,825	23,905	1.60%	1.80%	325	416	605	860
Carpenters	18,288	16,902	18,513	-1.60%	1.80%	-277	322	0	591
Bookkeeping, Accounting, and Auditing Clerks	21,688	21,930	23,407	0.20%	1.30%	48	295	354	684
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	15,324	16,506	17,954	1.50%	1.70%	236	290	519	637
Network Systems and Data Communications Analysts	5,621	6,536	7,816	3.10%	3.60%	183	256	294	412

Source: Washington Occupational Employment Projections, June 2009, Labor Market and Economic Analysis Branch, Washington Employment Security Department

Occupational level targeting can be preferable to industrial targeting. Occupational targeting shifts economic development efforts to developing human capital. This strategy is more effective than natural resource based recruitment in an era of global economics.¹³¹ Additionally, as true long-term employment with single companies has decreased, employees often need to gain their occupational training outside of firms. Finally, industry cross-over has increased, meaning that an occupation-specific strength may be equally attractive to multiple firms. In other words, a well-trained clerical worker may be equally attractive to a manufacturing firm as a service sector employer.

¹³⁰ Job Trends Report, 7.

¹³¹ Markusen, "Longer View," 255.

Examining projected top occupations yields similar findings (see Table 23). Many of the top job openings will require four-year degrees, while others such as manual movers and laborers will earn lower than average pay.¹³²

Table 23: Projected top occupations by long-term growth (annual openings 2012-2017), King County¹³³

TITLE	Estimated Employment 2007	Estimated Employment 2012	Estimated Employment 2017	Avg. Annual Growth Rate 2007 - 2012	Avg. Annual Growth Rate 2012 - 2017	Avg. Annual Opening Due to Growth 2007 - 2012	Avg. Annual Opening Due to Growth 2012 - 2017	Avg. Annual Total Openings 2007 - 2012	Avg. Annual Total Openings 2012 - 2017
Computer Software Engineers, Applications	20,043	22,991	26,605	2.80%	3.00%	590	723	862	1,122
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Office Clerks, General	23,941	24,608	26,795	0.60%	1.70%	133	437	578	903
Registered Nurses	20,202	21,825	23,905	1.60%	1.80%	325	416	605	860
Carpenters	18,288	16,902	18,513	-1.60%	1.80%	-277	322	0	591
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Network Systems and Data Communications Analysts	5,621	6,536	7,816	3.10%	3.60%	183	256	294	412

Summary

This review of industrial and occupational clusters suggests that low-impact production jobs could provide good paying jobs with career ladders to those Rainier Beach residents with lower educational attainment. While Seattle economic development organizations do not report growth potential specifically for low-impact production jobs, the greater light industrial sector provides good opportunities for Seattleites.

¹³² Job Trends Report, 8.

¹³³ Ibid.

Low-Impact Production Business Success in Rainier Beach

In order for an economic development strategy to be effective, it should target businesses that are likely to be successful. This report focuses on three issues that determine business success:

- Neighborhood Compatibility & Predictability
- Rent and Market Factors
- Zoning and Policy Constraints

While the low-impact production jobs discussed above have compatibility issues that need to be considered, there are several mitigation measures that could adapt a range of businesses to the neighborhood's standards. However, the issues of rent and market demand may be more constraining to the development of low-impact production businesses, as the rents in Rainier Beach are generally higher than industrial businesses can afford to pay. Finally, zoning is currently designed to favor retail development, which could limit the growth of production-oriented jobs. These factors are discussed in detail below.

Neighborhood Compatibility & Predictability

When making locational decisions, strategic businesses generally take into account the degree to which they will be compatible with the neighborhood. The more a business produces noise, light, sound, odor, dust, vibration, and traffic, the more important it is to be separated from residential areas. Businesses that generate more impacts than the neighborhood is willing to tolerate will generate community opposition and will face pressure to relocate. Legal precedent demonstrates that when industrial and residential needs collide, courts tend to favor the residential uses.¹³⁴ Because industrial users often invest considerable capital in facility specialization, they need to be sure that they will not be driven from the neighborhood in the long term.

As noted in the discussion of San Francisco's PDR cluster, a number of PDR jobs are compatible in a residential setting. However, compatibility is a result of both sector and scale, which complicates the assessment of any given businesses. In order to assess the compatibility of low-impact production jobs, this section discusses three types of business needs: freight needs, facility needs, and operating needs. This includes followed by a review of tools that a neighborhood can employ to both mitigate the impacts of businesses on the neighborhood and signal businesses to indicate what they will tolerate. Tools discussed here include standard zoning, performance zoning and neighborhood oversight, site design, and frontage requirements.

When reviewing compatibility, it is important to remember that most businesses will create neighborhood impacts to some degree. For example, retail stores require truck delivery, and offices increase commuter automobile traffic. To some extent, the neighborhood residents must determine what levels of these impacts they are willing to tolerate in exchange for employment opportunities.

¹³⁴ *Spur v. Webb*, vol. 494.

However, while many types of Light and Medium PDR and related jobs could potentially meet the neighborhood's requirements, some types of businesses can be eliminated immediately, including heavy industrial work, most distribution companies (since they require frequent large truck transport), large manufacturing firms (since these require 24-hour operation and exterior space), and production companies that use toxic or odorous chemicals. Additionally, businesses will likely need to be of a small physical scale to fit into the neighborhood's urban form. The need for small scale businesses should not be seen as a disadvantage; in 2005, 96% of businesses in the Puget Sound employed fewer than 100 people and accounted for 60% of all private sector employment.¹³⁵ The Puget Sound Regional Council's Prosperity Partnership (PSRC) views these entrepreneurial endeavors as critical to the region's competitiveness. The PSRC has found that minority-owned small businesses in particular are essential for increasing jobs, wealth, and long-term prosperity.¹³⁶

Freight Needs

Successful low-impact production businesses depend on time-sensitive deliveries and quick turn-around times. In combination with trends in the freight industry, this presents several challenges to the integration of production uses in residential areas. Third-party shipping companies like UPS are stretching the standard delivery period beyond 8 a.m. to 6 p.m. to respond to customers' last-minute shipping needs.¹³⁷ Additionally, freight companies are shifting from 24' trucks to 29' trucks when possible, although some freight drivers suggest that the greater nimbleness of the 24' trucks might make up for their smaller capacity.¹³⁸

To some degree freight impacts can be governed by company size; businesses with a smaller quantity of output or with a high degree of value per item size will be better able to rely on van and small truck delivery rather than large truck delivery. However, small business operators indicated that even small trucks present a compatibility issue; while they lack the "rumble" of semi-trailers, the beeping sound made when small trucks and vans reverse is a source of irritation for the neighbors.¹³⁹

These concerns do not eliminate the possibility of incorporating production businesses in residential neighborhoods, but they do require planning to accommodate business freight needs. For example, providing alleys can create a means of delivering goods without disrupting the pedestrian environment. Currently, Rainier Beach has few alleys along Rainier Avenue. If possible, new developments should be required to incorporate alleys into their design. Guidelines will be needed to make sure that buildings are designed with space for dumpster storage so that the passage remains clear. Additionally, buildings need to be designed to maintain a 13'6" or greater height clearance for truck clearance. Curb space

¹³⁵ *A Regional Economic Strategy for the Central Puget Sound Region* (Seattle, Washington: Puget Sound Regional Council Prosperity Partnership, September 27, 2005), 17, <http://www.prosperitypartnership.org/strategy/res.pdf>.

¹³⁶ "Minority Entrepreneurship," *Prosperity Partnership Foundation Initiatives: Minority Economic Development Working Group*, n.d., <http://www.prosperitypartnership.org/foundation/minority/index.htm>.

¹³⁷ Gary Pivo et al., "Learning From Truckers: Truck Drivers' Views on the Planning and Design of Urban and Suburban Centers," *Journal of Architectural and Planning Research* 19, no. 1 (2002).

¹³⁸ *Ibid.*

¹³⁹ Peter Miller (President and CEO, Essential Baking Company), interview, May 17, 2010.

where the alley intersects a primary street also can serve as ideal locations for streetside freight parking, provided curb striping is long enough to accommodate trucks.¹⁴⁰

Regardless of the type of business, site and building design can be a critical component of freight delivery. Given the smaller amount of space for trucks to maneuver in a residential environment, truck ingress and egress need to be considered carefully. For example, fragile utilities should not be located near loading docks, nor should sensitive landscaping be located near truck turning areas.¹⁴¹ For buildings without loading docks, the adjacent curbs should be striped with loading zones long enough to accommodate the trucks.¹⁴² Buildings could also be designed with shared loading docks, reducing the amount of space needed for the dock and encouraging cooperation among small business owners.

While it is often suggested that freight transportation requires narrow sidewalks and large turning radii, some research suggests that this may not be the case. Focus groups conducted with freight delivery drivers indicate that these issues do not necessarily present challenges.¹⁴³

Freight needs are also impacted by other neighborhood conditions, including the level of crime. For example, while alley freight delivery improves the streetside walking environment, small business owners and truck drivers may be unwilling to use alleys where they perceive crime to be an issue.¹⁴⁴ Additionally, small production businesses with a retail component may prefer streetside delivery so that they can receive freight without having to leave the sales floor.¹⁴⁵

Facility Needs

Low-impact production businesses have specific loading, storage, frontage, and other facility needs. Loading elements are more important to production businesses because they have a greater volume of deliveries and shipments than residential uses (although not necessarily greater than retail). Therefore, production buildings often require roll-up doors large enough to accommodate delivery vans or loading docks to minimize vertical movement of heavy goods. Low impact production users often need room to store materials and inventory. This is often done in outside storage yards or in buildings with ceiling heights of 15' or higher. Storage yards would be generally inappropriate in a residential community, as they are not visually attractive and break up the sense of security created by street enclosure.¹⁴⁶ Finally, production businesses typically emphasize cost and functionality over attractiveness or pedestrian scale in the design of street frontage. However, production businesses that receive clients on site may require attractive frontages.

¹⁴⁰ Pivo et al., "Learning From Truckers."

¹⁴¹ Ibid.

¹⁴² Ibid.

¹⁴³ Ibid.

¹⁴⁴ Ibid.

¹⁴⁵ Ibid.

¹⁴⁶ "Street enclosure" is the result of a building-height to street-width ratio which gives pedestrians the feeling that they are in a defined space.

This section reviews the major types of industrial buildings. Note that the case studies provide examples of less common production spaces. Of the major industrial building types, low-impact production businesses would most likely need to utilize “flex” or “incubator”-type buildings in order to be compatible with the Rainier Beach neighborhood. A smaller amount of low-impact production companies might be able to use live/work or office/showroom spaces. Alternatively, buildings could be designed to accommodate a mix of industrial and housing or could be designed to be functional for industrial and retail needs, although both of these are less common. Businesses that rely on warehouse/distribution, manufacturing and assembly, and research & development (R&D) building types would be less compatible. Figure 25 outlines the building types generally associated with different intensities of production businesses. This review of standard building types concludes with a summary in Table 24.

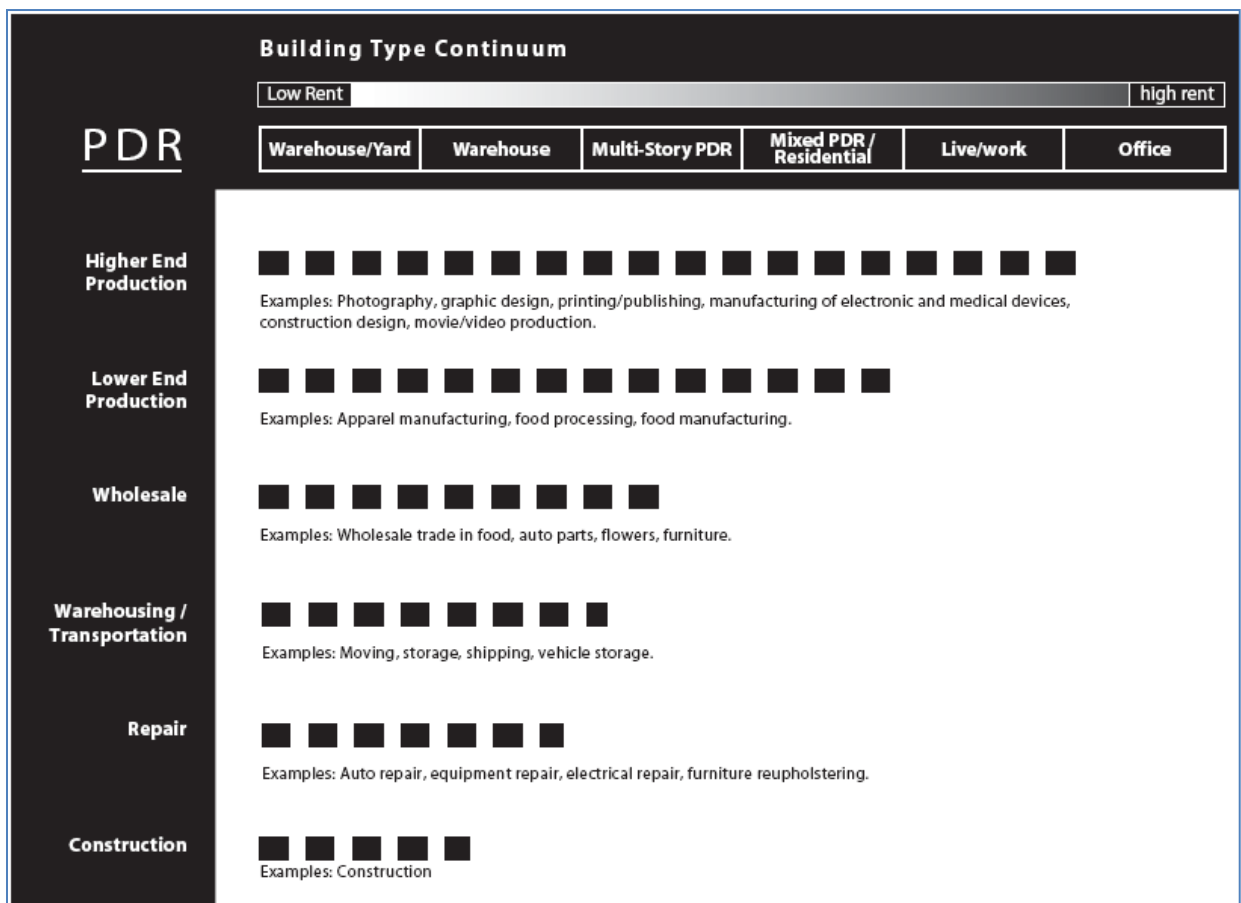


Figure 25: Building types of PDR businesses.¹⁴⁷ Note that most PDR jobs require single-story buildings, but some use multi-story mixed use spaces.

¹⁴⁷ City and County of San Francisco Planning Department, *Industrial Land in San Francisco*, 44.

Flex Buildings

This is one of the most compatible industrial building types. Flex buildings range in size from 20,000 to 150,000 square feet. The interiors can be reconfigured according to clients' needs, and often combine elements of office, showroom, and light manufacturing uses. Exteriors are often attractive because the business owner receives clients at the facilities. In some cases, up to 20% can be used for retail purposes. Fume hoods may be required depending on the type of manufacturing. Currently, flex buildings are more prevalent on the east side of Lake Washington.¹⁴⁸ Loading requirements vary based on the type of uses envisioned by the developer. Smaller buildings with a heavier office component may rely on roll-up doors or one foot of loading dock for every 20,000 square feet of building space.¹⁴⁹ Buildings intended for showroom purposes could have dock requirements of up to one square foot for every 10,000 square feet of building space.¹⁵⁰ Ceiling heights also vary. R&D ceiling heights average as low as 12-16', but showroom and manufacturing users more commonly incorporate average heights of 16-28' to accommodate equipment and small scale warehousing. Flex buildings are often single-story and incorporate moderate amounts of parking (2.5 spots/1000 building square feet). Parking needs vary based on how the site is configured – if the owner intends to use more than 25% for office purposes, parking issues become more of a concern.¹⁵¹ Developers may hesitate to build flex buildings; they are seen as riskier than other industrial types; they generally attract lower credit tenants because of the small size of the tenant businesses and can be expensive to re-lease because of the high level of customization.¹⁵²

The Alpha Cine building off of Martin Luther King Jr. Way (MLK) at South Norfolk Street provides a good example of flex space construction. The building's footprint is 30,000 square feet. The front 5,000 are double-decked and used as office space with an attractive exterior (see Figure 26 and Figure 27). The remaining 25,000 is open with a 26' high ceiling. Alpha Cine has divided 20,000 square feet into different rooms for various photographic processes (including a viewing theater for clients), and leases the remaining 5,000 square feet to a client for equipment storage.¹⁵³ It has been customized with a containment system to prevent chemical spills from going down the sewer.¹⁵⁴

¹⁴⁸ W. Scott Carter (Principal, Pacific Real Estate Partners), interview.

¹⁴⁹ Johannson Yap and Rene M. Circ, *Guide to Classifying Industrial Property*, 2nd ed. (Washington D.C.: Urban Land Institute, 2003), 52.

¹⁵⁰ Ibid.

¹⁵¹ W. Scott Carter (Principal, Pacific Real Estate Partners), interview.

¹⁵² Yap and Circ, *Guide to Classifying Industrial Property*, 9.

¹⁵³ Don Jensen (President, Alpha Cine), interview, April 22, 2010; Roque Deherrera (Business Services Manager, Seattle Office of Economic Development), interview.

¹⁵⁴ Don Jensen (President, Alpha Cine), interview.



Figure 26: North side of Alpha Cine building



Figure 27: West side of Alpha Cine building

Note roll up loading door, first and second floor offices, and landscaping.

While not yet constructed, the plans for the proposed SoDo Holgate Square development provide another example of flex space buildings (see Figure 28 and Figure 29). The development features tall ceilings, and will be divided into units ranging from 1,250 to 15,000 square feet which are appropriate for industrial and office uses. Site layout shields delivery from the neighborhood by locating it between the two rows of buildings.



Figure 28: Holgate Square, proposed SoDo flex space development. Note the 20' clear height, small unit division, and loading interior to the site.¹⁵⁵

¹⁵⁵ The Andover Company, Inc., "Holgate Square," n.d., <http://www.andoverco.com/docs/Holgate%20Square%20%20page%20printable.pdf>.



Figure 29: Street-level depiction of proposed Holgate development.¹⁵⁶ The extensive use of glass allows the units to serve office as well as industrial purposes.

Incubator Buildings

Incubator buildings are similar to flex buildings in that the primary construction is a building shell with flexible interior space that can be split into units as small as 1,000 square feet each (see Figure 30). Incubator building types should not be confused with incubator agencies, which provide small businesses with technical assistance and/or below-market rents. Incubator spaces are most applicable to entrepreneurs who are ready to move their home-based business from their garage to a larger space. As the businesses grow, they can expand into the next unit. These buildings have been used by a variety of businesses, including accountancy offices, micro-warehousing and distribution, small resellers, small retailers, or small machine or printing shops.¹⁵⁷ These are typically one 16-24' story tall. While they can be built with offices as a second story, landlords may be less interested in second story office uses, as the spaces can be harder to lease and more reactive to changes in the real estate market.¹⁵⁸

In general multi-tenant incubator spaces are staggered, L-shaped, or U-shaped, not rectangular.¹⁵⁹ They have lower power and floor load requirements than manufacturing spaces. Freight traffic is limited due to the small size of the businesses, and loading docks or drive-in doors are often shared by many tenants. Compared to flex space, they have lower curb appeal, and lower employees per square foot, but lower parking requirements. Access to highways is less common for these types of businesses, because distribution comprises a smaller part of their business. These building types are also less likely

¹⁵⁶ Ibid.

¹⁵⁷ W. Scott Carter (Principal, Pacific Real Estate Partners), interview.

¹⁵⁸ Yap and Circ, *Guide to Classifying Industrial Property*, 62; W. Scott Carter (Principal, Pacific Real Estate Partners), interview.

¹⁵⁹ Yap and Circ, *Guide to Classifying Industrial Property*, 63.

to depend on industry clustering than flex or manufacturing spaces. They are also less likely to need to locate near large blue-collar work forces because of lower labor needs.¹⁶⁰ Instead, they seek low rents.



Figure 30: Incubator building type cutaway view.¹⁶¹ Note that the units can be joined as businesses expand.

The West Valley Business Park in Kent is an example of this business type (see Figure 31). The 16.8 acre business park is home to 19 buildings, with tenant floor plans ranging from 457-5,600 square feet. Its marketing highlights its access to I-5, I-405, and 167; the availability of ground level loading docks; park-like landscaping; and ample parking.¹⁶²



Figure 31: West Valley Business Park, unit exterior¹⁶³

Another local example is the Tukwila Commerce Center near the Southcenter Mall (see Figure 32 and Figure 33). The Commerce Center consists of 27 buildings on 30 acres, with tenant spaces ranging from 500 to 10,000 square feet. Warehouse space has clearances of up to 14-feet.¹⁶⁴

¹⁶⁰ Ibid., 103.

¹⁶¹ Ibid., 63.

¹⁶² Entera Management Company, "For Lease: West Valley Business Park," n.d.

¹⁶³ Ibid.



Figure 32: Tukwila Commerce Center¹⁶⁵



Figure 33: Tukwila Commerce Center layout.¹⁶⁶ Although this site offers good freeway access, these businesses are less dependent on freeway access than others.

Mixed Use and Transitional Buildings

Some cities are now exploring the incorporation of industrial uses in mixed use buildings. Typically, industrial uses occupy the bottom floor of a building, and office uses occupy the upper stories. In rarer cases, residential uses may be created above the industrial space. For example, in 2006, the City of Los Angeles Community Redevelopment Agency commissioned Rodino Associates to investigate the

¹⁶⁴ WCV Commercial Properties, "Tukwila Commerce Center," 2009.

¹⁶⁵ Ibid.

¹⁶⁶ Ibid.

feasibility of mixed-use residential/industrial buildings on industrial land. The hypothesized development consisted of a 90,000 square foot lot and a five story building with a 30,000 square foot footprint.¹⁶⁷ The building itself was to have business parking on the lot, flex space on the first floor, residential parking and open space on the second floor, and a total of 50 condos on the remaining three floors. At the time of the study, the project projected a reasonable rate of return for an investor. Several elements of the analysis preclude a direct comparison to Rainier Beach; the project was envisioned in an industrial neighborhood very close to the downtown, industrial uses would have been required by code on the ground floor, and the housing market was still extremely tight at the time of the analysis. Therefore the analysis would have to be conducted for Seattle. An example of a proposed mixed-use project is discussed in the Mandela Grand case study at the conclusion of this report.

Alternatively, buildings could be designed to accommodate different uses over time. For example, with planning, a building designed with an open floor layout and 20' floor-to-ceiling height could later be subdivided later in to two-story townhomes or high-ceilinged retail with a mezzanine sales floor.¹⁶⁸ This, together with townhome and live/work housing types might create an urban infill corridor. While small parking lots could be incorporated between buildings, this design scheme might need City parking forgiveness depending on the use of the building. Buildings of this type would require more architectural input and more guidance from the City, but the design could be repeated throughout Seattle.

Live/Work Buildings

Live/Work spaces combine production space and living quarters in the same unit, often with a small apartment over a work space. These units would allow extremely small scale production, as there is little separation between living and work space. For this reason, they are often marketed towards professionals, such as accountants, architects, and lawyers. An additional concern is that the units tend to revert to residential-only use.¹⁶⁹ In this sense, they can serve a stop-gap purpose, providing productive space for a short time until residential demand increases.¹⁷⁰ A focus on this nature of development could support productive use in the short term while leading towards the long-term vision of a residential neighborhood. Alternatively, other communities attempt to preserve noncommercial use by requiring a certain percentage of the floor space be devoted to non-residential purposes. However, these measures can be difficult to enforce.¹⁷¹

A Rainier Valley example can be found in the eight-unit Columbia City Live Aboves (see Figure 34 and Figure 35). Built by local developer Rob Mohn, the 2,000 square foot units house a legal author's library and workspace, offices and a shared conference room for architects, apartments, and a B&B apartment.

¹⁶⁷ Rodino Associates, *The Feasibility of Developing Mixed-use Residential/Industrial Zoned Land in the City of Los Angeles* (City of Los Angeles Community Redevelopment Agency, October 2, 2006).

¹⁶⁸ Don Vehige (Associate, GGLO Architects), interview, April 20, 2010.

¹⁶⁹ Thomas Dolan Architecture, "10 Truths of Live/Work Planning Policy," *Thomas Dolan Architecture*, n.d., <http://www.live-work.com/lwi/codes/truths.shtml>.

¹⁷⁰ Roque Deherrera (Business Services Manager, Seattle Office of Economic Development), interview.

¹⁷¹ Ibid.



Figure 34: The Columbia City Live Aboves live work building¹⁷²



Figure 35: Columbia City Live Aboves office space

The recently constructed Artspace Hiawatha Lofts project is a second example (see Figure 36). It offers 61 units of 1 and 2-bedroom low-income housing, and six commercial storefronts for arts-related businesses.¹⁷³ The units range from 810 to 1,200 square feet and feature open floor plans with high ceilings.¹⁷⁴ There is currently a one-year wait for an apartment.¹⁷⁵ The Paul G. Allen Family Foundation contributed \$400,000 towards construction.¹⁷⁶ The location was chosen in part because of the

¹⁷²Valerie Easton, "Live-work lofts bring a fresh face to a landmark space," *The Seattle Times*, April 20, 2008, sec. Northwest Living, http://seattletimes.nwsourc.com/html/pacificnw/2004360715_pacificpnw120.html.

¹⁷³ Artspace, "Artspace Hiawatha Lofts," *Artspace USA*, n.d., <http://www.artspace.org/properties/hiawatha>.

¹⁷⁴ Multifamily Affordable Properties, "Artspace Hiawatha Lofts," *Aptfinder*, January 11, 2009, <http://aptfinder.org/property627.html>.

¹⁷⁵ Ibid.

¹⁷⁶ "Artspace Projects," *Paul G. Allen Family Foundations*, n.d., <http://www.pgafoundations.com/TemplateMain.aspx?contentId=80>.

neighborhood's existing cultural assets, such as the Pratt Fine Arts Center, the Langston Hughes Performing Arts Center; and the Japanese Cultural and Community Center.¹⁷⁷



Figure 36: Artspace Hiawatha Lofts.¹⁷⁸ Spaces are available for live/work studios and retail.

Office/showroom buildings

This building type might be possible in Rainier Beach (see Figure 37 and Figure 38). These buildings are used as offices and to show production samples to clients. While they are generally larger than would otherwise be found in a neighborhood, start ups and smaller industrial firms can make productive use of spaces between 10,000 and 30,000 square feet.¹⁷⁹



Figure 37: Office showroom exterior¹⁸⁰

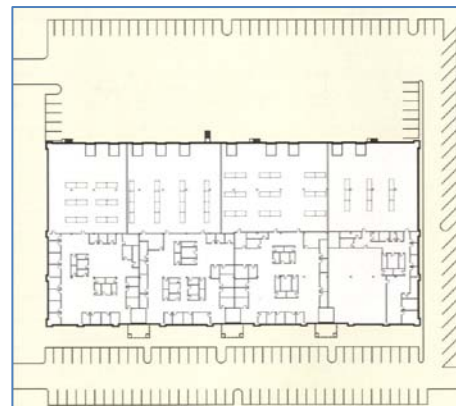


Figure 38: Office showroom layout.¹⁸¹
Note the large amount of space needed for warehousing (top half of plan)

¹⁷⁷ Artspace, "Artspace Hiawatha Lofts," n.d., <http://www.artspace.org/pdfs/Hiawatha%20Lofts.pdf>.

¹⁷⁸ Ibid.

¹⁷⁹ Rodino Associates, *Feasibility of Developing Mixed-use*, 2.

¹⁸⁰ Yap and Circ, *Guide to Classifying Industrial Property*, 58.

¹⁸¹ Ibid., 59.

Warehouse and Distribution Buildings

These building types are generally inappropriate for the Rainier Beach Urban Village. Warehouses are not necessarily too large for a residential environment (nearly half are between 1,001 and 5,000 square feet), but distribution focused activities often prefer over 100,000 square feet (see Figure 39).¹⁸² However, other warehouse features lead to incompatibility. Warehouse users prefer windowless walls, very high ceilings (24-30'), cheap exterior design, bright lighting for 24-hour use, dock-high loading doors, and adjacency to ports, airports, or highways.¹⁸³ This results in unappealing box-like structures (see Figure 40). Users often need little parking, because they offer little employment per square foot.



Figure 39: Ballard Organics Soap Company warehouse.¹⁸⁴ The 7,750 sq. ft. Rainier Valley space is over 16' tall to accommodate equipment and storage.



Figure 40: Beacon Hill warehouse¹⁸⁵

¹⁸² U.S. Energy Information Administration, "Warehouse and Storage Buildings," July 24, 2002, <http://www.eia.doe.gov/emeu/cbecs/pba99/warehouse/warehouse.html>; Rodino Associates, *Feasibility of Developing Mixed-use*, 3.

¹⁸³ Rodino Associates, *Feasibility of Developing Mixed-use*, 3.

¹⁸⁴ "Ballard Organics," *Facebook*, n.d., <http://www.facebook.com/pages/Seattle-WA/Ballard-Organics/111783469762>.

¹⁸⁵ Wendi Dunlap, "Beacon Hill Past and Present: Hothouse No More," *Beacon Hill Blog*, March 16, 2009, <http://beaconhill.seattle.wa.us/2009/03/16/beacon-hill-past-and-present-hothouse-no-more/>.

Manufacturing and Assembly Buildings

This building type is unlikely to be compatible with Rainier Beach, for many of the same reasons as warehouse space. Square footage is often considerable (up to 300,000 square feet), lighting needs are extensive, high truck traffic is common, and many users will need to keep hazardous chemicals on site. Ceiling heights average between 16 and 24' tall.¹⁸⁶ In general, the large numbers of employees per square foot leads to the use of 60% of the site for parking. This could be moderated to some degree by the availability of light rail and bus transit, although reductions in parking provisions would have to overcome the risk-aversion of investors and the long distance between the light rail station and much of the planning area (see Figure 13).¹⁸⁷ These buildings also require floors that can withstand heavy loads and need high levels of power (2,000 amperes on average).¹⁸⁸ As with warehousing, these buildings can present long blank walls, which break the pedestrian environment. The combination of these factors commonly leads to the strongest negative reaction from communities of all the industrial building types.¹⁸⁹ Manufacturing and assembly uses would be more appropriate in a flex or incubator space.

The Darigold and the Saint-Gobain plants illustrate these buildings types. The Darigold plant currently employs about 140 people, and processes over a million gallons of milk each week.¹⁹⁰ As can be seen in Figure 41-Figure 43 below, the plant uses large amounts of parking and presents blank walls to the Rainier Avenue arterial (although a portion has been decorated with a mural).

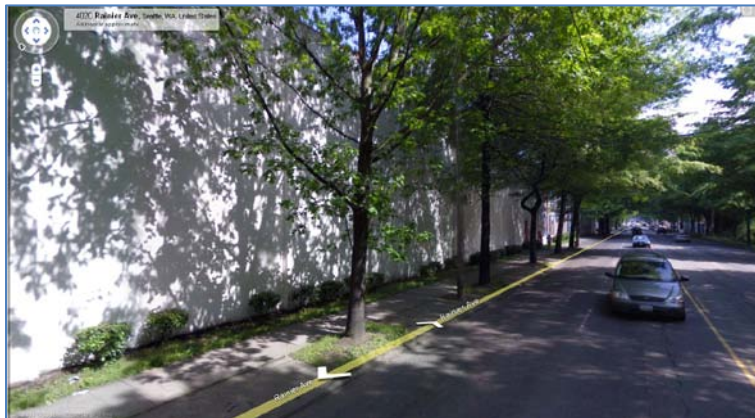


Figure 41: Darigold blank façade facing Rainier Avenue.¹⁹¹ This eliminates eyes-on-the-street safety and creates a bland walking environment

¹⁸⁶ Yap and Circ, *Guide to Classifying Industrial Property*, 38.

¹⁸⁷ *Ibid.*, 41.

¹⁸⁸ *Ibid.*

¹⁸⁹ *Ibid.*, 85.

¹⁹⁰ "Company," *Darigold - Corporate*, n.d., <http://corporate.darigold.com/company.aspx>.

¹⁹¹ "4058 Rainier Ave S Seattle, WA 98118," *Google Maps*, n.d.,

http://maps.google.com/maps?hl=en&client=firefox-a&hs=2x&rls=org.mozilla:en-US:official&um=1&ie=UTF-8&q=4058+Rainier+Ave+S+Seattle,+WA+98118-1142&fb=1&gl=us&hnear=4058+Rainier+Ave+S+Seattle,+WA+98118-1142&cid=0,0,8407765017880941836&ei=ImYATKquNIW0MOGbmDs&sa=X&oi=local_result&ct=image&resnum=1&ved=0CBMQnwIwAA

1142&fb=1&gl=us&hnear=4058+Rainier+Ave+S+Seattle,+WA+98118-

1142&cid=0,0,8407765017880941836&ei=ImYATKquNIW0MOGbmDs&sa=X&oi=local_result&ct=image&resnum=1&ved=0CBMQnwIwAA.



Figure 42: Mural on Darigold blank facade¹⁹²



Figure 43: Darigold facility¹⁹³

Note that the mural and landscaping improves the aesthetics but does not add eyes on the street.

The Saint-Gobain Performance Plastics Corporation offers a look at the benefits and drawbacks for an aeronautics supply manufacturer in a residential neighborhood. Saint-Gobain has recently moved from its location in Columbia City to Puyallup, WA in search of larger and more modern facilities without the level of permitting for industrial painting required by King County. An interview with Robert Bogue of Saint-Gobain suggests that the company was a better fit when the business was smaller and the neighborhood less “gentrified”. The company was first housed in a repurposed auto showroom, which provided the benefits of high ceilings and sturdy floors (built to support the weight of cars). However, as the company expanded, it was forced to adapt to increasingly unsatisfactory buildings, which disrupted the linear flow of production (see Figure 44 through Figure 46). Other aspects of the location were positive; the company hired and trained local residents, employees frequented the local restaurants, and neighborhood organizations were allowed to use the boardroom for meetings. Impacts on the neighborhood were mitigated to some extent by its location off of Rainier Avenue and tucked into the base of a hill. The drivers were skilled enough to manage the tricky entry into the property, but not without using neighboring property owners’ lots to maneuver.¹⁹⁴

¹⁹² Ibid.

¹⁹³ Ibid.

¹⁹⁴ Robert Bogue (Saint-Gobain Performance Plastics Corporation), interview, April 14, 2010; Pat Chemnick (Economic Development Director, SEED), interview.



Figure 44: Residential-facing Saint-Gobain wall. Figure 45: Saint-Gobain commercial frontage
Note the blank façade and roll-up door.



Figure 46: Saint-Gobain lot. Note the large area devoted to surface parking and freight. The lack of a consolidated and up-to-date facility motivated the firms' relocation.

Research & Development Buildings

These buildings exist to support industrial research. Buildings are designed to accommodate significant changes in lab layout over time (see Figure 47). Compared to other buildings, they may require more extensive building infrastructure, including fume hoods, temperature and humidity control, dust control, direct ventilation, and specialized piped utilities.¹⁹⁵ Some users may require a windowless environment, although many include attractive exteriors because of the need to meet clients and the more white-collar nature of the activities (see Figure 48). These buildings have high employment densities, meaning they require a large amount of workers relevant to the product output, and can generally afford higher rent than other industrial buildings. However, the jobs they provide are largely traditional knowledge-sector jobs, which are not open to those with lower educational attainment. Additionally, R&D

¹⁹⁵ "Laboratory: Dry," *National Institute of Building Sciences, Whole Building Design Guide*, June 2, 2009, http://www.wbdg.org/design/lab_dry.php; "Laboratory: Wet," *National Institute of Building Sciences, Whole Building Design Guide*, June 2, 2009, http://www.wbdg.org/design/lab_wet.php; "Research Facilities," *National Institute of Building Sciences, Whole Building Design Guide*, June 2, 2009, <http://www.wbdg.org/design/research.php>.

companies tend to prefer to be close to other R&D companies, which are located primarily in Seattle's South Lake Union neighborhood and on the east side of Lake Washington, far from the Rainier Beach neighborhood.



Figure 47: R&D flex space cutaway¹⁹⁶



Figure 48: R&D flex space exterior¹⁹⁷

¹⁹⁶ Yap and Circ, *Guide to Classifying Industrial Property*, 53.

¹⁹⁷ *Ibid.*, 54.

Table 24: Summary of industrial building characteristics

	Lighting	Exterior Design	Footprint (sf)	Height	Location	Loading	Compatible
Flex		Attractive: glass, signage	<ul style="list-style-type: none"> • 10,000+ • 25,000-50,000 most common • 3-4 spots/1,000 sf 	12-24'	<ul style="list-style-type: none"> • Natural light • Fresh air • Views 	varies, dock common	Very possible
Incubator	Low needs		<ul style="list-style-type: none"> • 5,000-15,000 	16-20'		Roll-up door/unit	Somewhat possible
Office/showroom	Low needs	Attractive: glass, signage	<ul style="list-style-type: none"> • 10,000+ • 3-4 spots/1,000 sf 	12-18'	<ul style="list-style-type: none"> • Natural light • Fresh air • Views 	Customer parking	Somewhat possible
Warehouse/distribution	High 24-hour	Plain, no windows	<ul style="list-style-type: none"> • US avg. =17,400 • 44% between 1,001 and 5,000 • Distr. Prefers 100,000+ • 1/2000 sf parking spots 	24-30'	<ul style="list-style-type: none"> • Immediate proximity to ports, airports, or highways • Cheapest land 	Dock high doors, large trucks	No
Manufacturing and assembly	High 24-hour	Plain, no windows	<ul style="list-style-type: none"> • 30,000, prefer more • 6 spots/1,000 sf 		<ul style="list-style-type: none"> • High parking • Near transportation • Chemical storage • Cheapest land 	Dock high doors, large trucks	Unlikely
Research and Development	varies	Attractive: glass, signage	<ul style="list-style-type: none"> • 10,000+ • 3-4 spots/1,000 sf 	12-18'	<ul style="list-style-type: none"> • Natural light • Fresh air • Views • Close to other R&D • Chemical storage 		Unlikely

Source: W. Scott Carter, Principal, Pacific Real Estate Partners; Rodino and Associates; and U.S. Energy Information Administration.

Rainier Beach is characterized by small parcels, which would limit the ability to construct buildings in the 10,000-30,000 square foot range without multiple parcel assembly (see Table 25 and Table 26). Larger parcels would allow construction of the preferred building size, as well as some parking. Importantly, larger parcels would also provide more flexibility when designing sites to shield nearby residences from production noise and traffic impacts. However, parcel assembly can be challenging in Rainier Beach because of the difficulty of contacting and working with out-of-state and corporate landlords.¹⁹⁸

Table 25: Mean and median commercially-zoned parcel size in Neighborhood Planning Area. Note that half of the parcels zoned neighborhood commercial (ex., NC2-40) are not large enough to support a 10,000 square foot building with parking.

Zone	Parcels in Planning Area	Average Parcel Size (Square Feet)	Median Parcel Size (Square Feet)
Commercial 1 (C1-40)	2	96,955	96,955
Lowrise 3 Commercial (L-3 RC)	14	8,508	8,847
Neighborhood Commercial 1 (NC1-30)	1	5,365	5,365
Neighborhood Commercial 1 (NC1-40)	22	4,571	4,603
Neighborhood Commercial 2 (NC2-30)	2	32,809	32,809
Neighborhood Commercial 2 (NC2-40)	67	11,082	9,020
Neighborhood Commercial 2 (NC2P-40)	16	11,437	10,390
Neighborhood Commercial 3 (NC3-40)	75	13,264	8,100
Neighborhood Commercial 3 (NC3P-40)	15	15,184	9,272

Source: Washington State Geospatial Data Archive

Table 26: Number of parcels by square footage

Zone	Parcel Size (Square Feet)					Grand Total
	0-5,000	5,000-10,000	10,000-15,000	15,000-20,000	20,000+	
Commercial 1 (C1-40)			1		1	2
Lowrise 3 Commercial (L-3 RC)	4	4	5	1		14
Neighborhood Commercial 1 (NC1-30)		1				1
Neighborhood Commercial 1 (NC1-40)	17	4	1			22
Neighborhood Commercial 2 (NC2-30)		1			1	2
Neighborhood Commercial 2 (NC2-40)	15	22	14	9	7	67
Neighborhood Commercial 2 (NC2P-40)	3	4	6	1	2	16
Neighborhood Commercial 3 (NC3-40)	21	32	5	5	12	75
Neighborhood Commercial 3 (NC3P-40)	1	8	1	1	4	15
Grand Total	57	76	33	17	27	214

Source: Washington State Geospatial Data Archive

¹⁹⁸ Greg Anderson (Small Business Development Officer, Rainier Valley Community Development Fund), interview, April 20, 2010.

A visual tour of the Rainier Avenue corridor reveals a lack of buildings that strongly demonstrate the characteristics attractive to small light industrial businesses (see Figure 49). Rainier Avenue is characterized by low-ceilinged auto-repair businesses. However, many do have the roll-up doors desirable for delivery. A few have ceiling heights necessary for small machinery and minor warehousing. However, many have potential noise problems due to metal walls and close proximity to housing.

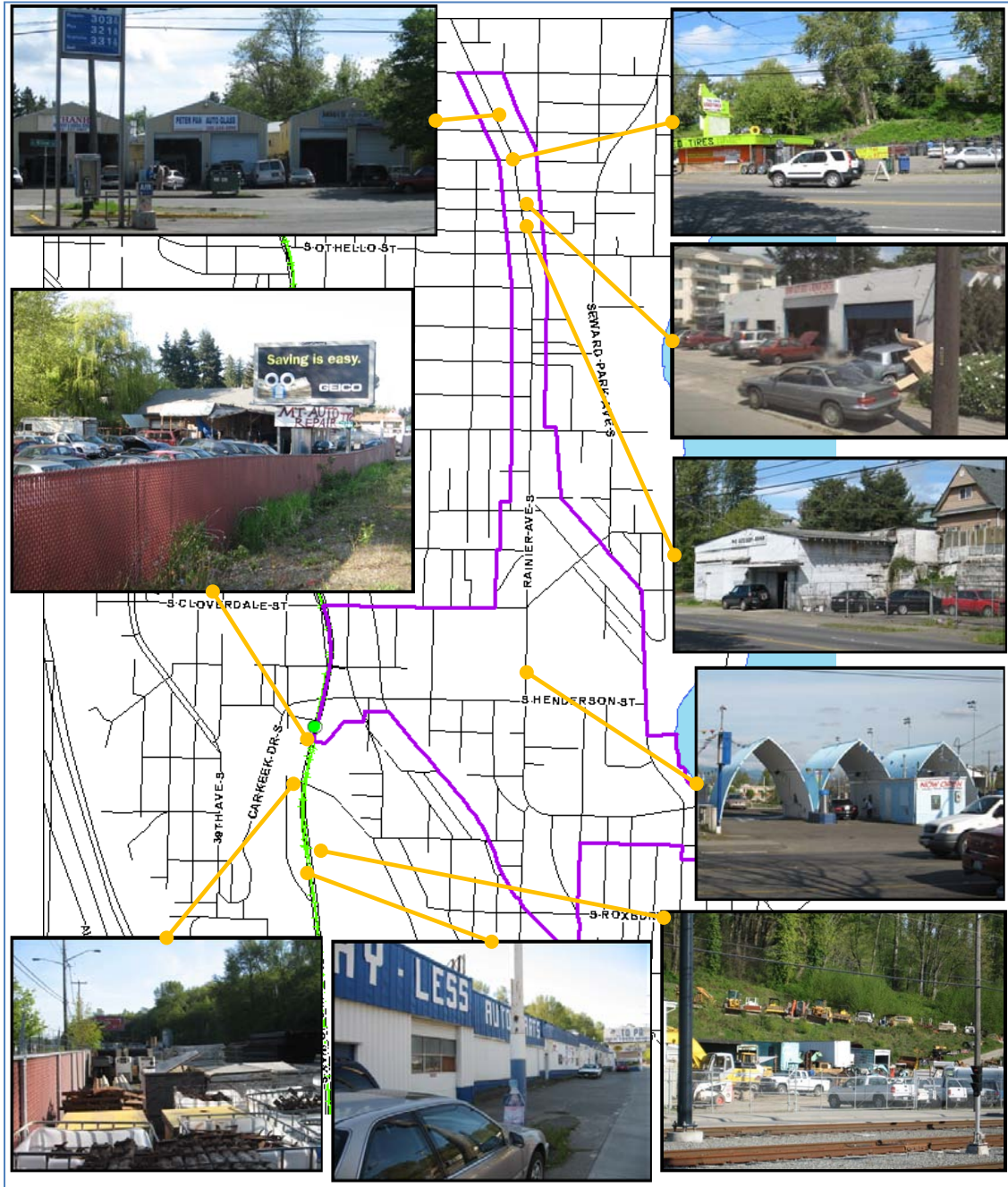


Figure 49: Rainier Beach non-retail commercial building types, excluding commercial core. Note northern auto-service cluster and southern open industrial storage.

Source: Data from WAGDA. Mapped with ArcGIS. Photos from author and Google Maps.

Operating Needs

Potential conflicts between business operating needs and neighborhood compatibility exist primarily with regard to hours of operation, light, vibration and noise, and odors.

Hours of operation

Like many light industrial businesses, low-impact production businesses often have longer hours of operation than retail or office establishments. In many cases, production continues throughout the night with the use of a night shift. This would not necessarily pose a problem for many businesses described in the Light and Medium PDR categories, such as catering services, graphic design, film production, jewelry production, and potentially apparel manufacturing. Firms that use heavier machinery, such as custom manufacturing or custom woodworking, might cause conflicts unless their building is sufficiently soundproofed and the work can be conducted indoors without open windows, or those tasks can be restricted to daylight hours.

Hours of operation can also pose transportation related problems. The biggest issue, early morning deliveries, is discussed under freight needs. The early morning arrival and departure of employees can also be an issue in a residential neighborhood. Rainier Beach has an advantage in this regard because its transit options would allow more employees to use alternate means of transportation to arrive at work, decreasing automobile noise.

As noted in the Boulder Case Study, early morning garbage pick-up can also disturb neighbors.

Light

The issue of light pollution is closely tied to hours of operation. The businesses described as Core PDR often require 24-hour outdoor work. This can result in the need for significant nighttime lighting. The Light and Medium PDR businesses would be more compatible due to their shorter hours or indoor activities.

Vibration and Noise

Light machinery can create vibrations and noise that are felt beyond the property. The machines described under the Light and Medium core businesses can all create some degree of noise and vibration, including sewing machines, packing machines, automated woodworking tools, hammering, or printing equipment. These can be addressed to some extent through operating hour restrictions, building requirements, operating agreements, limits on allowable horsepower, and other measures.

Odors

The amount of odors created by low-impact business varies considerably. While all food preparation businesses (including restaurants) will create some odors, certain foods (ex., fish) and processes (ex. smoking) are more likely to generate odors. These can also be difficult to predict; as detailed in the Brewery Case Study, the smell of beer brewing was less objectionable to the building's tenants than the smell of tofu-making.

Mitigation Techniques

There are a number of tools to ensure that the impacts of businesses do not interfere with the needs of residents. This section focuses on four techniques: standard zoning, performance zoning, site design, and frontage requirements.

Standard Zoning Code

As discussed in the history of land use separation, the zoning code is the most common tool used to control the impacts of industrial use. Standard zoning codes typically specify what uses are allowed on a parcel, and then apply physical regulations to further limit impacts. These physical regulations include setbacks (the distance a building must be located from property lines), landscaping requirements, height restrictions, floor area regulations (FAR) that control the bulk of a building and maintain sunlight access, and parking requirements.

The drawback to the standard zoning code is that it can be overly proscriptive. By prohibiting broad types of uses, the zoning code may eliminate uses that do not impact the neighborhood. It assumes that all light industrial uses will need similar amounts of parking, and will create similar amounts of noise. Additionally, attempting to list every possible allowable use can lead to the proliferation of increasingly specific zoning districts.¹⁹⁹ Moreover, it is becoming increasingly difficult to keep up with the pace of innovation and the increasing blurring between office, research, and manufacturing uses.²⁰⁰ Finally, scale may be more important than use. As Elliot notes:

In many cases it is the scale of the use, rather than its name, that determines its external impacts. There is all the difference in the world between a 15,000-square-foot neighborhood hardware store and a 150,000-square-foot True Value Home Center, but many zoning ordinances still list them both as 'hardware store.'²⁰¹

Performance Zoning

Performance zoning specifically regulates the impacts rather than the form of development. Under performance zoning, the city sets the acceptable noise, odor, and vibration limits, and then allows the developer and owner/renter to determine the most cost effective way of meeting those standards. This lets the market find the optimal use of capital within compatible restraints. Performance zoning offers the additional benefit of being more understandable to community members. While the average resident may not understand what FAR is or how a change in FAR from 1 to 1.5 will affect their lives, they should have a better understanding of what a doubling of noise will feel like.

Performance zoning is often used in conjunction with other forms of zoning. The Mandela Grand case study offers a description of performance standards that were created by a developer in hopes of mixing residential and industrial uses.

¹⁹⁹ Elliott, *A Better Way to Zone*, 42.

²⁰⁰ Ibid.

²⁰¹ Ibid.

However, the effectiveness of performance zoning is limited by questions of predictability and enforcement. Developers consider performance zoning to be less predictable than standard zoning. With standard zoning, developers know that their projects will be approved if it conforms to certain physical dimensions, but performance zoning can make project approval less predictable. Additionally, performance zoning can reduce predictability for the neighborhood's existing residents. People like to know that new construction will fit in with the rest of the neighborhood. Standard physical zoning requirements ensure that every building has the basic appearance. In contrast, performance zoning can lead to unorthodox "creative" solutions to compatibility challenges.²⁰² Performance zoning can also be harder to administer for planners. Building designs must be assessed for acoustic and vibratory qualities, which may require more engineering skills than planners have.²⁰³ Performance zoning can also make it more difficult for property owners to rent out their property; rather than merely checking to see if the potential tenant is on the list of acceptable uses, they must know enough about their tenant's business operations to know whether it will match the performance zoning requirements and the building's mitigative qualities. Finally, performance zoning requires on-going monitoring to ensure compliance. This requires people to measure impacts, equipment to document noise levels, and the ability to contact the property owner. Historically, this has proven challenging for local governments; for example, in their book *Integrating City Planning and Environmental Improvement*, Gert de Roo and Donald Miller note that although three levels of government were responsible for measuring air quality in New York, the average response time to an air quality complaint was 21 days.²⁰⁴

However, the responsibility for monitoring and enforcement does not necessarily fall on the City. With the right support, citizen groups can work with businesses to ensure compliance. An example of this can be found in the Port of Seattle Neighborhood Advisory Committee case study below:

Port of Seattle Neighborhood Advisory Committee Mini-Case Study

The Port of Seattle signed the 1983 Short Fill Agreement/Neighbors Advisory Committee (NAC) Agreement seven years after reacquiring Terminal 91 from the U.S. Navy.²⁰⁵ The agreement established a committee of representatives from the Magnolia Community Club and the Queen Anne Community Council to address potential operational and construction impacts related to Port development of Terminal 91.²⁰⁶ The agreement sets "trigger points" for traffic, lighting, and noise levels, establishes regular monitoring and reporting, and establishes the NAC as the primary vehicle for resolving any disputes. The NAC receives administrative report from the

²⁰² Ibid., 26.

²⁰³ Ibid., 25.

²⁰⁴ Gert de Roo and Donald Miller, *Integrating City Planning and Environmental Improvement* (Ashgate Publishing, Ltd., 2004), 146, http://books.google.com/books?id=x2BSOYXRjucC&pg=PA145&lpg=PA145&dq=integrating+manufacturing+and+residential+zone&source=bl&ots=sssGXYukVo&sig=44iRISZ6DdezTldqQQccFdZ90TI&hl=en&ei=2Zy7S4TiCYq8sgOs0dmmBQ&sa=X&oi=book_result&ct=result&resnum=5&ved=0CBsQ6AEwBA#v=onepage&q&f=false.

²⁰⁵ *Terminal 30 Container Reactivation And Cruise Terminal Relocation: Draft Environmental Impact Statement, Volume I* (Port of Seattle, October 2006), <http://www.portseattle.org/downloads/community/environment/t30containervol1.pdf>.

²⁰⁶ The agreement was later amended in 1985 and 1998; Ibid.

Seattle Department of Neighborhoods and the non-profit Executive Services Corps of Washington, and environmental consulting services from Xander & Associates.²⁰⁷ Annual reports from the NAC indicate that the Port has been responsive in addressing the NAC's concerns, has notified neighbors of anticipated short-term noise levels, and has sought to pinpoint problem pieces of equipment and identify ways to reduce noise levels.²⁰⁸ The NAC has expressed its appreciation for the chance to provide input to the Port, and has even agreed to reduced monitoring and meetings in response to Port budget concerns.²⁰⁹ The NAC has also successfully fought proposals it felt would bring too many impacts to the neighborhood.²¹⁰

Key lessons: Performance zoning and community agreements like the Short Fill Agreement can be implemented by community members, given an appropriate level of administrative support, a clear definition of protocol and standards, and clearly defined parties. As in the Jamaica Plains Brewery Case Study, it is easier to enforce community standards when a single identifiable entity can be contacted (ex., the Port Commission or the Brewery Complex Property Manager) than many individual small businesses.

Site Design

Site design is crucial to mitigating impacts of mixed uses. When a site is large enough, buildings can be constructed around interior loading areas to shield adjacent properties from the noise (see Figure 50). The Jamaica Plains Brewery Case Study offers an example of such a layout. Similarly, the San Francisco PDR regulations discussed in the San Francisco Case Study call for arranging dwelling units in mixed use buildings so that they face open, non-productive space. Landscaping can also be developed to visually block loading and work areas. Regulations affecting site design should be developed in conjunction with business owners. For example, street trees should be selected to ensure that the lowest branches do not block delivery driver's sightlines.²¹¹ The Mandela Grand Case Study offers several site design-based mitigation techniques, including locating exhaust pipes away from HVAC intake pipes and designing separate commercial and residential parking.

²⁰⁷ Terminal 91 Neighbors Advisory Committee, *Terminal 91 Neighbors Advisory Committee Annual Report 2006*, 2006, 2, http://www.portseattle.org/downloads/about/commission/SWS_20070605_9_rep.pdf.

²⁰⁸ Terminal 91 Neighbors Advisory Committee, *Annual Report 2006*.

²⁰⁹ Tino Salud, *Terminal 91 Neighbors' Advisory Committee 2004 Annual Report* (Port of Seattle, March 23, 2005), 6, http://www.portseattle.org/downloads/about/commission/RM_20050412_6a_MEM.pdf.

²¹⁰ Mike Merritt, "Neighbors Win War with Port of Seattle," *Seattle Post-Intelligencer*, December 13, 1989, sec. News.

²¹¹ Pivo et al., "Learning From Truckers."



Figure 50: Site design of incubator building type with interior loading area.²¹² This particular design shields loading from the surrounding neighborhood, but would have to be altered to provide a better walking environment.

Frontage requirements

Frontage requirements are used to ensure that buildings in residential environments are welcoming for pedestrians. These include transparency, lighting, sidewalk, and landscaping requirements. Transparency requirements dictate that a certain percentage of the street-facing building must consist of windows. Light industrial users often prefer minimal street-facing windows. In San Francisco, PDR users are exempt from transparency requirements.²¹³

Rent & Market Factors

Rent and market factors are the greatest limiting factors to the potential for developing neighborhood-compatible light-industrial businesses in Rainier Beach.

Rent

As discussed under land use theory, industrial businesses are very rent sensitive. While compatibility and facility factors are important, rent can be a greater determinant of location.²¹⁴ As discussed above, industrial users are able to pay less in rent than other types of users (see Table 27).

²¹² Yap and Circ, *Guide to Classifying Industrial Property*, 61.

²¹³ *City and County of San Francisco Municipal Code, sec. 145.1*, 2008.

²¹⁴ W. Scott Carter (Principal, Pacific Real Estate Partners), interview.

Table 27: Puget Sound market rents and vacancies, third quarter 2009. Note that flex and warehouse spaces generate the lowest rents.

Puget Sound Market Rents and Vacancies		
Property Type	Quoted Rents/SF	Vacancy Rate
Office	\$26.31	12.2%
General Retail	\$18.67	4.9%
Flex	\$15.05	10.7%
Warehouse	\$6.46	7.2%
<i>Source: The CoStar Office Report: Seattle/Puget Sound; The CoStar Retail Report: Seattle/Puget Sound; The CoStar Industrial Report: Seattle/Puget Sound</i>		

Looking at flex space asking rents by market and submarket, the CoStar data indicates that the Rainier Valley area does not have demonstrably cheaper rents than other submarkets in the region. Note that the Downtown Flex Market, which includes Rainier Beach, commands rents that are a third greater than the Southend markets (see Table 28). When looking at submarkets, Rainier Beach has rents that are similar or higher than those of its nearest neighbors, the Georgetown/Duwamish MIC and Tukwila (see Table 29).

Table 28: Puget Sound markets flex space rents and vacancies, third quarter, 2009. Note the higher rents demanded in Seattle versus the southend.

Submarket	Quoted Rents/SF	Vacancy Rate	Vacant SF
Downtown (Seattle south of Northgate)	\$14.65	6.2%	469,190
Eastside (Bellevue, Redmond, Kirkland, Issaquah)	\$16.29	11.5%	991,987
Northend (Northgate, Bothell, Woodinville, Edmonds/Lynnwood, Everett, Mill Creek)	\$16.53	14.9%	1,162,859
Southend (Auburn, Renton, Federal Way, Seatac/Burien, Kent Valley, Tukwila, Vashon)	\$11.00	10.2%	625,548
Tacoma (Tacoma, Dupont, Lakewood, Fort Lewis, Parkland/Spanaway, University Place, Puyallup)	\$11.61	9.7%	151,904
Regional Total	\$15.05	10.7%	3,401,488
<i>Source: The CoStar Industrial Report: Seattle/Puget Sound</i>			

Table 29: Puget Sound submarket flex space rents and vacancies, third quarter 2009. Note that Rainier Beach does not have a strong competitive rent advantage in the region.

Submarket	Quoted Rents/SF	Vacancy Rate	Vacant SF
Georgetown/Duwamish N	\$12.20	7.2%	47,444
Georgetown/Duwamish S	\$13.28	2.1%	12,080
Rainier/Beacon Hill	\$13.41	22.0%	30,000
SeaTac/Burien	\$13.48	18.9%	34,147
SoDo	\$16.07	6.6%	176,615
Tukwila	\$12.33	11.7%	308,150
Regional Total	\$15.05	10.7%	3,401,488
<i>Source: The CoStar Industrial Report: Seattle/Puget Sound</i>			

Conversely, property owners have a price incentive to seek out higher rent producing users. Industrial zoning restricts the types of potential tenants, thus keeping obtainable rents low. However, when property owners are allowed to choose who to rent to, they will likely pursue tenants who can pay the highest rent. When the land use code requires mixed uses, a property owner has a greater incentive to provide a mix of residential and retail or office space than other combinations.

For this reason, examples of buildings that mix productive space with housing are more commonly found when industrial areas are being repurposed for other uses. The developer includes industrial use because they are required to do so by the zoning, and then adds office or residential space to garner higher rents. Examples of this can also be seen in the Mandela Grand Case Study

Lease Factors

Industrial development typically has longer lease terms than other types of development (see Table 30). This is because industrial typically have heavy equipment and extensive customization, making it burdensome for the tenant to move and for the property owner to re-lease.

Table 30: Typical lease terms by tenant type.²¹⁵ Note the longer industrial lease terms.

Tenant Type	Typical Lease Term
Apartment	1 year
Small retail	2-5 years
Office	3-10 years
Anchor retail	5-15 years
Industrial	5-20 years
<i>Source: A Brief Primer on Leasing Terminology and Strategy</i>	

²¹⁵ Christopher Downing, "A Brief Primer on Leasing Terminology and Strategy," PowerPoint presentation, *Rice University: Architectural Problems Studio & Seminar*, September 30, 2005, <http://www.owl.net.rice.edu/~arch691/Lecture%20Notes/Lecture%20Notes%20Sep%2029.ppt>.

Lease terms are longer for newly built and higher quality properties. Small industrial space would trend towards the lower end of the term range.²¹⁶ This characteristic is important for several reasons:

- Industrial property can provide stability to a rental market. Property owners are unable to increase rents quickly because the property turns over less frequently.
- Property owners who anticipate a rise in obtainable rents and have a choice of tenant type may choose to lease to a shorter-term tenant to capitalize on high market values when the lease terminates. Even industrial property owners who expect obtainable rental rates to rise may choose to let their properties lie vacant rather than become locked in to a long-term low value lease.²¹⁷

Market Factors

Interviews with economic development and real estate professionals highlighted the absence of an existing market for industrial real estate in the Rainier Beach market due to the following factors:

Availability of land in the Duwamish MIC

While Rainier Beach's proximity to the Duwamish Manufacturing/Industrial Center could be considered an asset, interviewees suggested that there are still available lands at affordable rents in the Duwamish MIC.²¹⁸ While the average building size in the MIC is larger than that needed by many small businesses, the median parcel size in most neighborhoods within the MIC is only 22,600 feet or less, small enough to meet the needs of small businesses.²¹⁹ Businesses could locate in this land without worrying about neighborhood compatibility. This issue came up particularly with regards to food preparation. Because of the large downtown market and the need to deliver fresh food, food preparation companies prefer to locate in the SODO or northern Duwamish MIC.

Availability of land near SEATAC

While Rainier Beach's proximity to Boeing and SeaTac airports could be an asset, businesses can find land that is both cheaper and closer to these facilities in Tukwila, Kent, and Renton (see Table 28).

Lack of synergy

Interviewees suggested that sector-based development would require larger businesses to anchor a cluster. For example, the Gates Family Foundation is a large enough figure in the non-profit world that smaller non-profits will overlook inconveniences and locate nearby. Interviewees also suggested that small clusters could be developed from several medium-sized companies, provided that they were co-

²¹⁶ W. Scott Carter (Principal, Pacific Real Estate Partners), interview.

²¹⁷ Allison M. Orr, Neil Dunse, and David Martin, "Time on the Market and Commercial Property Prices," *Journal of Property Investment & Finance* 21, no. 6 (2003): 473 - 494.

²¹⁸ Roque Deherrera (Business Services Manager, Seattle Office of Economic Development), interview; Marshall Foster (Director of Planning, Seattle Department of Planning and Development), interview; W. Scott Carter (Principal, Pacific Real Estate Partners), interview.

²¹⁹ *Seattle's Industrial Lands*, 26-35.

located in the same building, but that this would require larger buildings and intensity than possible in Rainier Beach.

Perceptions of crime

Although not specific to industrial businesses, most interviewees felt that potential business owners would be concerned over crime. While there are many strategies that can be taken to lower the impact of crime on businesses (for example, Porter suggests that an increase in local hiring can decrease crime), the perception may be more important than the actual levels of crime.²²⁰

Perceptions of isolation and freight difficulties

Several interviewees felt that access to I-5 was challenging from Rainier Beach.²²¹ They were surprised to learn that the Boeing Access Road on-ramp is only 1.6 miles away from the village center (about a five minute drive), and mostly on the wide MLK Jr. Way.

Market summary and potential: niche, high end, short-run products

The combination of these factors is a significant barrier to the creation of low-impact production jobs in Rainier Beach. The market disadvantages would mean that light industrial business owners looking to relocate would be willing to pay less in rent, which would make real estate investors less likely to fund development projects. This is not to say that any of the market factors could not be overcome. However, interviewees indicated that businesses and investors would choose easier and less risky opportunities for their investments. This lack of development interest and the apparent lack of suitable existing stock present a serious problem for low-impact production growth. While zoning can “bend” aspects of real estate development to improve compatibility, it cannot “withstand a frontal onslaught by the market forces.”²²²

Interviewees identified two types of low-impact production businesses that could have market-driven reasons to locate in Rainier Beach: production-oriented businesses with a retail component, and, more weakly, incubator-type businesses for local entrepreneurs. Businesses with a retail component could include glass-blowing or woodworking businesses with a large production area and a small storefront facing the street. Incubator style businesses would encompass a wide range of users who were ready to move their businesses out of their garage. Both of these approaches have limitations as strategies. Focusing on businesses with a retail component is hampered by the OED Rainier Valley Retail Strategy study’s finding that cabinetry and furniture are the *only* businesses with potential retail expansion. The difficulty of identifying and marketing to home entrepreneurs limits the potential of incubator style development.

²²⁰ Porter, “New Strategies for Inner-City Economic Development,” 23; W. Scott Carter (Principal, Pacific Real Estate Partners), interview.

²²¹ W. Scott Carter (Principal, Pacific Real Estate Partners), interview.

²²² Elliott, *A Better Way to Zone*, 67.

The case studies in this report and evidence from similar industrial studies suggest that the low-impact production businesses with the greatest chance of success are those that specialize in niche, high end, short-run products.²²³ Producing niche products gives them a unique place in the market place. The short-run focus capitalizes on their ability to achieve quick turn-around, customization, and high-skilled work, rather than rely on economies of scale to compete in the mass market. The high value of the goods allows them to pay higher rents than they might otherwise achieve.

This market niche makes it hard to target an industry for attraction.²²⁴ For example, the Jamaica Plains Brewery Project contains one business that makes cabinets, one that makes furniture, one that makes pretzels for stadiums, and one that makes hummus. Simply trying to attract woodworkers or food preparers would not be specific enough to find these small enterprises.

Policy & Zoning Constraints

Jobs vs. Housing

The long lifespan of buildings and resulting development patterns create an element of risk to this style of development. Creating a typical single-story industrial building on a parcel zoned to 40' tall prevents that space from being used for four stories of housing. Therefore, promoting low-impact production uses without consideration for mixing with other uses has the potential to decrease density and limit the supply of housing. This is particularly important around the light rail station, where dense residential development is anticipated but has not yet materialized. Of course, there is nuance to this element. The land use mixing and mixed-use developments discussed throughout this paper demonstrate that production jobs and housing can coexist. However, there is a continuum of tradeoffs to be made. Placing more restrictions on acceptable production-related activities limits the range of possible jobs, but increases compatibility. An example of this is found in the San Francisco PDR case study, in which the neighborhood planning process was framed as a choice between jobs and housing. The neighborhood planning process presents an opportunity for the community to weigh those decisions; however, Rainier Beach community preferences will have to be weighed against broader community preferences discussed in the following section on the Comprehensive Plan.

Comprehensive Plan

As previously discussed, Seattle's Comprehensive Plan denotes Rainier Beach as a residential urban village. Therefore, citywide planning strategies emphasize the growth of neighborhood-serving commercial businesses in Rainier Beach, but indicate that it "may not provide a concentration of employment." The Comprehensive plan does call on the city to "accommodate a range of employment activity to ensure employment opportunities are available for the city's diverse residential population," but suggests that the way to attain that goal is by "maintaining healthy manufacturing and industrial

²²³ See San Francisco PDR Case Study; The Pratt Institute Center for Community and Environmental Development, *Making it in New York*, x.

²²⁴ City and County of San Francisco Planning Department, *Industrial Land in San Francisco*, 19.

areas”.²²⁵ Interviewees suggested that the City was fighting hard to maintain the integrity of the Duwamish Manufacturing/Industrial Center, and that an economic development strategy that generated industrial employment outside of the MIC could lead to a dissolution of the MIC’s effectiveness. An alternative viewpoint was promoted in a Pratt Institute Center for Community and Environmental Development study of New York’s manufacturing district, which suggested that “manufacturing activities that are not noxious and that are compatible with their neighboring uses should be allowed to locate in commercial zones if they met environmental performance and compatibility standards” to ease real estate pressures facing manufacturers.²²⁶

Current Zoning

The Rainier Beach Neighborhood Planning Area is primarily zoned for neighborhood commercial and lowrise residential development, with the most intense neighborhood commercial zoning (NC3) located at the northern end of the Rainier Avenue strip, around the Safeway grocery store, and adjacent to the light rail station (see Figure 51). The remaining neighborhood commercial zoning is primarily less intense neighborhood commercial (NC2), with a very small portion of light intensity neighborhood commercial (NC1) zoning in the southeast corner of the Neighborhood Planning Area. More intense Commercial 2 zoning is located immediately beyond the southwest corner of the planning area.

²²⁵ City of Seattle, *Seattle’s Comprehensive Plan*, 1.5.

²²⁶ The Pratt Institute Center for Community and Environmental Development, *Making it in New York*, 5.

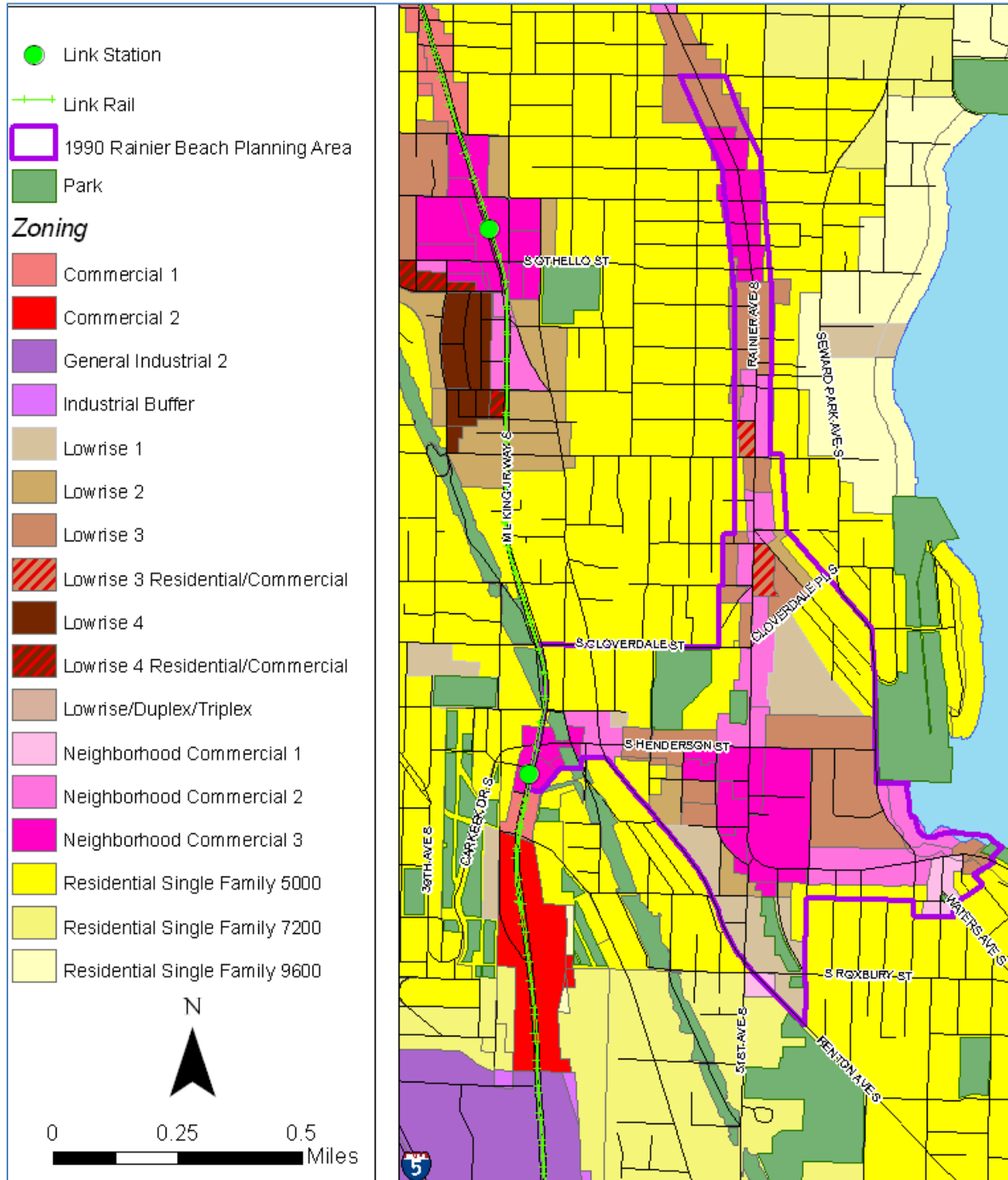


Figure 51: Rainier Beach zoning. For single family zones, numbers in zoning code refer to minimum lot size, so higher numbers imply less intensity (ex. SF 9600 vs. SF 5000). For all other zones, higher numbers imply greater use intensity (ex. Commercial 2 is higher intensity than Commercial 1).

Source: Data from WAGDA. Mapped with ArcGIS 9.

Current zoning in the neighborhood allows many of the low-impact production uses discussed above. Some of these, such as food processing and craft work, are limited to 25,000 square feet, more than enough space for the type of small business discussed above. Live work units are allowed throughout the neighborhood.

The code also suggests that a number of these activities are likely to produce odors or noise. Light manufacturing requires a review by an acoustical engineer, while potential odor-creating uses require the Director of Planning, in consultation with the Puget Sound Clean Air Agency, to identify required mitigation measures. While these measures strengthen neighborhood compatibility, they add cost and unpredictability to developing industrial-oriented property that would not be present in other areas.

While the code allows low-impact production uses, it favors other uses that would be more profitable to developers, particularly retail. In the NC3 zone, craftwork, food processing, and light industrial work are limited to 25,000 square feet, while retail services are permitted up to any size. The height limits and FAR also favor residential and retail. Developers can build up to 40', or approximately four stories (see Figure 52). If a developer chooses to build a standard one-story industrial building, he forgoes the additional three stories he could have built under the code. The height limit also makes it difficult to construct a mixed use building. A standard ground floor industrial space would need ceiling heights of 15' or more. This would allow the developer to build only two stories over the ground floor, for a total height of 35'.

There are exceptions to the height limit, although these also favor retail. If a ground floor is over 13' tall, developers can build up to 44' tall to allow them to build four floors. This height extension would be inadequate for industrial users, as they generally prefer ground floor ceilings that are more than 15' tall. The code will allow developers to build up to 47' tall in a 40' zone, but only if the ground floor contains 12,000 square feet of retail and 16' tall ceilings.

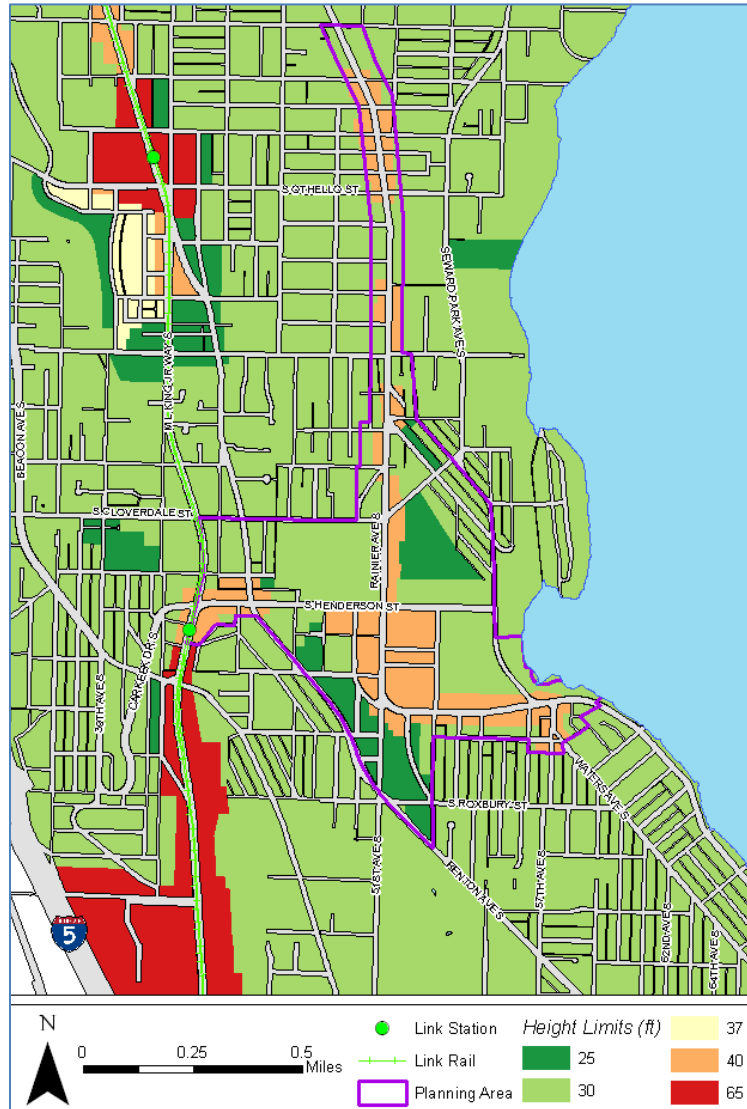


Figure 52: Rainier Beach height limits. Height limits are structured to incent 40 foot development in the planning area.

Source: Data from WAGDA. Mapped with ArcGIS 9.

Pedestrian Standards

Additionally, the majority of parcels on Henderson between Rainier Avenue and MLK, and on Rainier Avenue within a one block of Henderson, are zoned as pedestrian zones. This limits live/work space to 20% of the street-facing façade. More importantly, it restricts 80% of the street-level frontage to:

- General sales and service
- Major durables retail
- Restaurants
- Lodging uses
- Theaters and spectator sports
- Medical services
- Rail transit facilities
- Museum

- Schools
- Library
- Indoor sports and recreation
- Parks , open space
- Community clubs or centers
- Religious facility

Because of the narrowness of the neighborhood commercial zoning along Rainier Avenue, light industrial developments would generally be subject to rear setbacks, increasing the complications of site design and decreasing the amount of available square footage.

Finally, façade requirements dictate that much of the street-facing frontage must be transparent. As noted in the discussion of building types, this would not pose a problem to a number of low-impact production businesses; however, it is still more attractive for residential users than others.

These noise, odor, use, height, FAR, setback and façade regulations are discussed in detail below.

Noise Standards

The NC zones also include some degree of performance zoning. All manufacturing, fabricating, and repairing must be done within an enclosed structure. C2 zones allow some outdoor work, unless they are within 50 feet of a residential zone. Additionally, conducting light manufacturing, or using exterior ventilation, air-conditioning or refrigeration devices requires a report from an acoustical consultant and a description of mitigation measures that will be taken, such as “the provision of buffers, reduction in hours of operation, relocation of mechanical equipment, increased setbacks and use of specified construction techniques or building materials.”

Odor Standards

Odors, vapors, smoke, cinders, dust, gas and fumes must be vented 10 feet above the sidewalk and directed away “to the extent possible” from residential uses within 50 feet of the vent. Additionally, the code requires the Planning Director to review and identify mitigation measures for any uses that are “major odor sources,” which include:

- Lithographic, rotogravure or flexographic printing
- Film burning
- Fiberglassing
- Metal plating
- Vapor degreasing (a process used to clean electronic parts and finish painted, welded, soldered, or bonded surfaces)
- Cooking of grains
- Smoking of food or food products
- Fish or fishmeal processing
- Coffee or nut roasting
- Deep fat frying
- Dry cleaning

Use

Many of the uses discussed above are allowed in the NC and C areas, although many have size limitations imposed (see Table 31). All allowable uses are provided in Appendix III.

Table 31: Selected Permitted and Prohibited Uses by Zone

Uses	NC1	NC2	NC3	C1	C2
C.4. Food processing and craft work Includes pottery and candle making, production of orthopedic devices, motion picture studios, printing, creation of sculpture and other art work, and glassblowing, but not mechanized assembly line production of canned or bottled goods.	10	25	25	P	P
C.5. Laboratories, Research and development	10	25	P	P	P
C.8. Offices	10	25	P	35(1)	35(1)
C.9. Sales and services, automotive					
C.9.c. Vehicle repair, major automotive	X	25	P	P	P
C.10. Sales and services, general					
C.10.a. Retail sales and services, general Ex. bookstores, florists, and clothing stores shoe repair, hair cutting salons	10	25	P	P	P
C.10.b. Retail sales, multipurpose Ex. Stores that sell a wide range of items such as grocery, hardware, drug, and variety stores.	10(2)	50	P	P	P
C.11. Sales and services, heavy					
C.11.a. Commercial sales, heavy (goods that primarily require delivery or pickup by truck, ex. construction materials or industrial supplies)	X	X	25	P	P
C.11.b. Commercial services, heavy (services that require heavy truck traffic or chemical storage , ex. commercial laundry, concrete mixing, building cleaning services)	X	X	X	P	P
C.11.c. Retail sales, major durables	10	25	P	P	P

Uses	NC1	NC2	NC3	C1	C2
Ex. furniture or appliances					
C.11.d. Retail sales and services, non-household	10	25	P	P	P
C.11.e. Wholesale showrooms	X	X	25	25	P
C.12. Sales and services, marine					
C.12.a. Marine service stations	10	25	P	P	P
C.12.b. Sales and rental of large boats	X	25	P	P	P
C.12.c. Sales and rental of small boats, boat parts and accessories	10	25	P	P	P
C.12.d. Vessel repair, major	X	X	X	S	S
C.12.3. Vessel repair, minor	10	25	P	P	P
D. HIGH-IMPACT USES	X	X	X	X	X
F. LIVE-WORK UNITS	P	P	P	P	P
G. MANUFACTURING USES					
G.1. Manufacturing, light: Ex. assembly of clocks, electrical appliances, or medical equipment; production of finished goods, such as jewelry, clothing or cloth, toys, furniture, or tents, from materials that are already refined, or from raw materials that do not need refining, such as paper, fabric, leather, premilled wood, or wool, clay, cork, semiprecious or precious metals or stones, fiber; Canning or bottling of food or beverages; printing plants with more than 5,000 square feet of gross floor area.	X	10	25	P	P
G.2. Manufacturing, general: Ex. Production of items made from stone or concrete; metalwork involving a machine shop, welding, fabrication, or a foundry; barrels, ceramic molds, or cardboard cartons; toys, film, pens, or linoleum from plastic, rubber, or celluloid; wholesale development of film; items that require mixing or packaging of chemicals.	X	X	X	P	P
G.3. Manufacturing, heavy:	X	X	X	X	X

Uses	NC1	NC2	NC3	C1	C2
Ex. Extracting raw materials, Manufacturing of electrical components, such as semiconductors and circuit boards, soaps and detergents, slaughterhouses					
K. STORAGE USES					
K.1. Mini-warehouses (enclosed storage space divided into separate compartments no larger than 500 square feet in area)	X	X	25	40	P
K.2. Storage, outdoor (not including sale, repair, incineration, recycling or discarding of materials or equipment)	X	X	X(4)	P	P
K.3. Warehouses	X	X	25	25	P
L. TRANSPORTATION FACILITIES					
L.6. Vehicle storage and maintenance					
L.6.d. Transportation services, personal	X	X	P	P	P
J.1. Residential uses (including caretaker's quarters)	P	P	P	P	CU(3)
<p>KEY A = Permitted as an accessory use only CU = Administrative Conditional Use P = Permitted X = Prohibited 10 = Permitted, business establishments limited to 10,000 sq. ft. 25 = Permitted, business establishments limited to 25,000 sq. ft. 35 = Permitted, business establishments limited to 35,000 sq. ft. 40 = Permitted, business establishments limited to 40,000 sq. ft. 50 = Permitted, business establishments limited to 50,000 sq. ft.</p> <p>NOTES (1) Office uses in C1 and C2 zones are permitted up to the greater of 1 FAR or 35,000 square feet as provided in subsection 23.47A.010 D. Office uses in C1 and C2 zones are permitted outright with no maximum size limit if they meet the standards identified in subsection 23.47A.010 D. (2) Grocery stores meeting the conditions of subsection 23.47A.010 E are permitted up to 23,000 sq. ft. in size. (3) Residential uses are conditional uses in C2 zones under Section 23.47A.006 B3, except as otherwise provided above in Table A or in that section. (4) Permitted at Seattle Center, see Section 23.47A.011.</p>					
Source: Seattle Municipal Code, 23.47A.004 and Seattle Municipal Code, 23.84A					

The C2 zoning might limit the potential for developments that mix light industrial and residential spaces, as in the Boulder Steel Yards project. Note that no outdoor storage is allowed for NC zones.

Height limits

Rainier Beach commercial areas are zoned to allow 40' tall buildings, although the limit increases to 65' from the Henderson Light Rail Station to the south. The code allows developers to add 4' to buildings in NC zones if the floor-to-floor height of non-residential street-level uses is 13 feet or more. Developers can add 7' if the building is a mix of residential and at least 12,000 square feet of retail *and* at the ground floor is at least 16 feet tall. In any case, mechanical equipment is allowed to extend another 15 feet beyond the established building height. All height extensions can be denied if they block views of Lake Washington.

Floor Area Ratios (FAR)

Floor area ratios are also higher for mixed use buildings. The greater the floor area ratio, the greater the allowable bulk of the building. In Rainier Beach developers are encouraged to build mixed use buildings through an increase in allowable FAR (see Table 32).

Table 32: FAR in NC and C zones

Height Limit	30	40	65
Single-purpose structure containing only residential or non-residential use	2.25	3	4.25
Any single use within a mixed-use structure	n/a	n/a	4.25
Total permitted for all uses within a mixed-use structure containing residential and non-residential uses	2.5	3.25	4.75
Station Area Overlay District	3	4	5.75
<i>Source: Seattle Municipal Code, 23.47A.013</i>			

In the C2 zone, the total amount of office uses are limited to one FAR or 35,000 square feet, whichever is greater. However, this limitation can be waived by meeting a number of façade, setback, and transparency requirements.

Setback requirements

NC zoning is designed to distance commercial uses from residential use. For buildings that are between 13 and 65 feet, the required rear and side setbacks from adjacent residential parcels are 10 feet. If the building itself contains residential, then the setback increases to 15 feet for a 13-40' tall building, plus another 2' setback for each additional 10 feet in height. However, alley width is included in the setback calculation. If the building has a loading dock in the rear, the dock must be setback 12 feet from the center of the alley. Any loading dock must be located at least 50 feet from a residential zone.

Façade limitations

In NC zones, the façade requirements are drawn up to promote pleasant pedestrian and retail oriented environments. Street-facing facades that do not have at least a window, doorway, stair or stoop, deck, or landscaping/screening are limited to 20 feet in width.²²⁷ Street-level street-facing facades must be located within 10 feet of the street lot line. Non-residential uses in NC zones and mixed-use commercial/residential buildings in C zones must have a street-facing façade that is 60% transparent. Street-level non-residential buildings must have a ground floor height of at least 13’.

²²⁷ *Seattle Municipal Code, 23.47A.008, n.d.*

Case Studies

The following case studies demonstrate different aspects of low-impact production business development in real world contexts. The cases are as follows:

- **Alpha Cine & Essential Baking:** The relocations of Alpha Cine and the Essential Baking to Rainier Beach and the Duwamish MIC demonstrate the types of buildings and amenities desired by low-impact businesses.
- **San Francisco Production, Distribution, and Repair:** This case summarizes San Francisco's analysis and subsequent rezoning of PDR areas. This study provides context to the findings discussed under Cluster Evaluation.
- **La Cocina Kitchen Incubator:** San Francisco's La Cocina culinary incubator provides an example of a non-profit low-impact production business located in the heart of a residential neighborhood. It highlights the importance of building design, scale, and location.
- **Boulder Steel Yards:** The Boulder Steel Yards is an example of a same-site mixing of industrial service and housing. It highlights the importance of site design and City involvement, and the challenge of supporting non-retail rents.
- **Jamaica Plains Brewery:** The non-profit Brewery complex mixes woodworking, food preparation businesses, restaurants, and office space in a Boston residential neighborhood. This case demonstrates the usefulness of non-profit management in keeping rents low and providing space that meets tenant needs.
- **Mandela Grand:** The proposed Mandela Grand project offers an example of mediation measures that were proposed to facilitate the large-scale mixing of residential and light industrial uses.

Scales of the proposed projects vary considerably (see Figure 53), and are provided to demonstrate compatibility issues, mitigation techniques, and community processes rather than to suggest identical development.



Figure 53: Building footprints in Rainier Beach (2002). Inset shows approximate size of case study parcels and building footprints.

Source: Data from WAGDA. Mapped with ArcGIS.

Mini-Case Studies: Alpha Cine & Essential Baking Locational Decisions

Alpha Cine

While located just outside of the Rainier Beach planning area, Alpha Cine demonstrates the importance of facility, rent, and market factors in industrial locational decision-making. This photography and film production firm was located in downtown Seattle from 1957 to 2007, but decided to relocate in the face of rising rents. Its search was driven by a need to find space that was flexible enough to suit their production processes, and attractive enough to welcome clients. Unlike the market factors discussed above, the firm wanted to be accessible to both Seattle and SeaTac airport, but adjacent to neither. This allows their clients to easily access the office from the airport, and offers proximity to downtown Seattle for overnight visitors. Additionally, the City of Seattle was willing to arrange financing for relocation within city limits.²²⁸ However, Rainier Beach was not their first choice; they preferred locations in the upper Rainier Valley and the Duwamish MIC, but were unable to find suitable facilities at an affordable price or property owners who would offer a 25-year lease.

Company president Don Jensen believes that there would have been little conflict if the building had been located in the Rainier Beach planning area. Freight deliveries primarily arrive in UPS and FedEx vans, and the twice-weekly semi-trailer deliveries were never a problem at their previous location in the congested downtown. While they operate 24-hours a day, they use only light machinery and do not create odors. While Jensen did not take crime into consideration when choosing to locate to Rainier Beach, he noted that they had to install an alarm system in the new building after they were robbed. Had locating in the Rainier Beach been an option, they would have chosen to locate on MLK for easier access to the light rail. Of the 32 employees, ten currently use the light rail.²²⁹ The employees live throughout the city, including in the Rainier Valley. The company offers a range of salaries (from \$25,000 to \$100,000 annually), and rarely requires a four-year degree, although experience with the motion picture industry is helpful.²³⁰

Essential Baking Company

The Essential Baking Company recently moved into a new 45,600 square foot facility in the Georgetown neighborhood, consolidating an 11,000 square foot bread-making facility in Fremont, a 6,000 square foot dessert-making facility in Georgetown, and an 8,000 square foot pastry-making facility in South Park.²³¹ Unlike Alpha Cine, the baking company moved because it had outgrown its Fremont facility (see Figure 54).

²²⁸ Don Jensen (President, Alpha Cine), interview.

²²⁹ Don Jensen (President, Alpha Cine), "Research Project," April 26, 2010; Don Jensen (President, Alpha Cine), interview.

²³⁰ Don Jensen (President, Alpha Cine), "Research Project."

²³¹ Peter Miller (President and CEO, Essential Baking Company), interview.



Figure 54: Essential Baking Company Fremont facility.²³² Note incorporation of neighborhood-serving cafe

While finding low rents were important, proximity to Seattle was of equal concern. President and CEO Peter Miller considered relocating to Kent for the cheaper land prices, but the distance would have made distribution to the Seattle market challenging, and would have made it difficult to retain his Seattle-based office staff.

Building type was also a key consideration. The new facility allows for a continuous production flow from ingredient mixing to freight loading. Miller rejected several options in the Rainier Valley because they lacked this feature. Other important elements included sufficient space for parking, office space, café space, and production space. The new site is currently divided into 35,000 square feet of parking lot (of which half is sublet), 10,000 square feet of office space, 35,000 square feet of production space, and a 665 square foot café. Miller also chose the new site for its access to Highways 99 and I-5, its 18' ceilings, wide floor plates, and ample electricity capacity.

According to Miller, the Fremont facility's production work, which he described as "light assembly," or "artisan hand-production," was largely compatible with a residential neighborhood. However, freight requirements did cause problems. The bakery operated nearly 24-hours a day, with the bulk of the work occurring between 2 a.m. and 6 p.m. While production noise was limited, the neighbors complained about the noise of the delivery trucks backing up. The neighbors discovered that the parking lot the bakery leased from the City was not zoned for commercial use, and successfully forced the bakery to relocate its 13-van fleet (see Figure 55). The bakery's deliveries were also hampered by traffic jams caused by people waiting to use the nearby dump, although this was less significant.

²³² "1604 N 34th Street Seattle, WA 98103," *Google Maps*, n.d., <http://maps.google.com/maps?oe=utf-8&client=firefox-a&ie=UTF8&q=1604+N+34th+Street++++Seattle,+WA+98103&fb=1&gl=us&hnear=&cid=0,0,932644508809395397&ei=iUMATJ-QOo-ANsKE0Ts&ved=0CBMQnwlwAA&hq=1604+N+34th+Street++++Seattle,+WA+98103&ll=47.648174,-122.33757&spn=0,0.027874&t=h&z=16&layer=c&cbll=47.648051,-122.337734&panoid=6138YX60UBz1dW8RWwP86g&cbp=12,330.71,,0,0.91>.



Figure 55: Rear of Fremont bakery location.²³³ Note large lot area devoted to parking and proximity of housing (at right).

The bakery employs 160-180 employees. The majority of these are production workers, who tend to be low-skilled, minority, and live in Kent, White Center, and Burien. Pay ranges from \$12-18/hr, and increases for the higher skilled bakers, pastry chefs, and office workers.

Key Lessons

Both the Alpha Cine and Essential Bakery relocations offer the following lessons:

- **Importance of high ceilings and open space in building design:** While both companies could function in their small spaces in their early years, the lack of suitable available space forced them to leave the neighborhood as they grew. The new neighborhoods were able to attract the businesses by providing good facility space.
- **Importance of proximity to Seattle:** For both companies, proximity to Seattle was as important of a factor as rent. Rainier Beach therefore has an advantage over other communities that are further from Seattle clients and customers, but has less of an advantage than neighborhoods located closer to downtown.
- **Importance of freight considerations:** Even a small artisan business like the Essential Baking Company, located in a small building, using small vehicles for delivery, created noise impacts that were greater than some in the community could stand. This highlights the importance of addressing freight issues for businesses of all types and sizes.
- **Importance of community buy-in:** In both cases, the presidents of the companies believed their business was compatible in a residential neighborhood. However, both were happy with their new locations; operating in industrial areas gave them more freedom to operate without worrying about residential complaints.

²³³ Ibid.

Case Study: San Francisco Production, Distribution, and Repair

Overview

The City of San Francisco began examining the role of light industrial (“Production, Distribution, and Repair,” or PDR) jobs during the dot-com real estate boom of the late 1990s. Rents in the previously industrial Eastern Neighborhoods were driven up by start-up companies looking for affordable real estate and new residents looking for housing close to jobs (see Figure 56). The Planning Department analyzed the role PDR businesses played in the local economy, the needs of PDR businesses, and the degree to which they were compatible with housing. A neighborhood planning process led to the development of new zoning codes to segregate incompatible uses and integrate compatible ones.

Many elements of the case are relevant to Rainier Beach. The socioeconomic characteristics of the neighborhoods are similar, and the communities are dealing with similar issues of displacement and competing community values. However, there are important differences between the San Francisco PDR case and Rainier Beach. San Francisco was evaluating the appropriateness of bringing housing to industrial land, whereas this report explores bringing productive uses to residential land. Additionally, San Francisco did not have a protected area for industrial uses like the Seattle MICs. However, San Francisco provides a useful analytic model and identifies many low-impact production business needs.

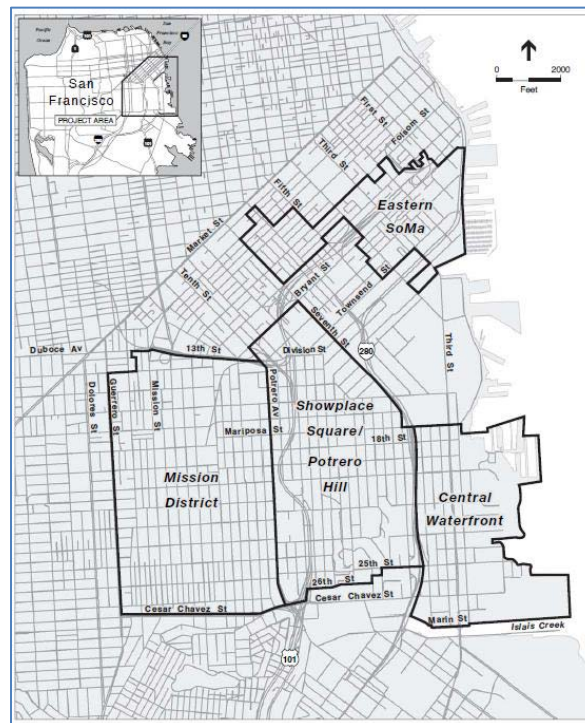


Figure 56: San Francisco's Eastern Neighborhoods²³⁴

²³⁴ *Materials for Eastern Neighborhoods Area Plans Initiation Hearing* (San Francisco, CA: San Francisco Planning Commission, April 17, 2008), cover, <http://www.sf-planning.org/Modules/ShowDocument.aspx?documentid=1515>.

History

Like many cities, most of San Francisco’s industrial businesses had left for the suburbs by the end of WWII. The few that remained in the city located in cheaper industrial lands in the southeast (see Figure 56). These businesses tended to be PDR jobs including:

- Food and beverage wholesale and distribution
- Fashion/garment design and manufacture
- Delivery services (messengers, airport shuttle vans, taxis, limousines)
- Event production and catering
- Construction contractors and building material suppliers
- Wholesale and retail of furniture, equipment, appliances, and furniture manufacture
- Printers, designers, photographers; film producers, graphic designers, and sound studios
- Repair shops for cars, trucks, equipment, appliances²³⁵

However, with the growth of the dot-com industry in the late 1990s, these firms began to experience increasing real estate pressure. New high-tech firms preferred to locate in the city for the proximity to downtown offices, access to creative employees, and the dynamism lacking in remote office parks. Their employees wanted affordable housing close to their jobs. Both groups found the land they were looking for in the city’s industrial district; by 2002 the industrial areas were home to at least 50 new office buildings and 5,000 new residential units, primarily live/work.²³⁶ This was possible in part because the area’s industrial zoning did not prohibit the development of other uses. The combination of rising rents and complaints from new residents about sounds, sights, and smells began to force many PDR businesses to relocate or close. PDR business that remained tended to have extensive customer bases in the city, networks of suppliers and labor, and possession of very suitable production space.

Project Description

Neighborhood Planning Process

In response to this economic change, the City initiated the Eastern Neighborhood Zoning process and community planning. The entire process took ten years from the initial studies to the passage of new area plans. A significant portion of this time was devoted to the weighing of competing values: economic benefits of PDR versus affordable housing. While the Planning Department initially held workshops solely to discuss the real estate pressure on PDR companies, it broadened the scope when it became clear that the community was interested in a broader discussion of housing, transportation, open space, and overall livability. It also extended the process to include a citywide community summit to bring a panel of real estate development, economic development, and community planning experts before an audience of neighborhood residents, policy makers, and business owners.

²³⁵ San Francisco uses the term “Production, Distribution, and Repair” (PDR) instead of “light industrial” to avoid the image of smoke-stack industry; City and County of San Francisco Planning Department, *Industrial Land in San Francisco*, 18.

²³⁶ *Ibid.*, 9.

The neighborhood planning process included five to six workshops per neighborhood to discuss community goals, confirm the City’s interpretation of those goals, discuss zoning options, and propose and revise neighborhood area plans.

During this process, City policy makers passed several interim controls on non-industrial growth and a nuisance disclosure ordinance to stem the tide of displacement. The full process is described in Appendix V.

Economic Analysis

San Francisco’s study of PDR jobs concluded that they formed a significant part of the economy; approximately 11% of all city jobs were provided by PDR companies.²³⁷ These firms were a “fundamental” part of what made the city work, since they supported other aspects of the economy. For example, distribution companies delivered the paper offices needed to conduct businesses, and brought the food from wholesalers to restaurants.

The study also found that the PDR firms contributed to economic stability. Rents, sales prices, and vacancy rates showed less fluctuation than office-based businesses.²³⁸ However, they also learned that the PDR firms were highly spatially concentrated. Two thirds were in the Eastern Neighborhoods, where the greatest non-industrial encroachment was occurring. However, a substantial amount of Light PDR uses were on residential and commercial land (see Table 33).

Table 33: Production, Distribution and Repair jobs in San Francisco, 2000

	Industrial Land	Residential and Commercial Land	Total
Light PDR	6,000	27,000	33,000
Medium/Core PDR	47,000	0	47,000
Total	53,000	27,000	80,000
<i>Source: Community Planning in the Eastern Neighborhoods</i>			

As noted in the body of this report, the study found that PDR businesses employed local San Franciscan workers, particularly immigrants, workers with low English skills and without higher education degrees. The PDR businesses offered a chance at upward mobility; they provided entry-level positions and opportunities to develop skills on the job.

Neighborhood Description

PDR uses in San Francisco were concentrated in the Central Waterfront, East SoMa, Mission, and Potrero Hill neighborhoods, collectively known as the Eastern Neighborhoods. While the population of these neighborhoods was larger than Rainier Beach in absolute terms and relative to the city total, the demographics were similar to Rainier Beach’s in terms of ethnic, linguistic, and income.

²³⁷ Ibid., 16.

²³⁸ Ibid., 33.

The Eastern Neighborhoods were home to 70,000 people in 26,000 households, or approximately 9% of the city’s population.²³⁹ Households were crowded compared to the city average, with 2.57 people per household, vs. 2.30.

The people living in the Eastern Neighborhoods were more likely to be ethnic minorities, and living below the poverty line than the city average. Eastern neighborhood residents were somewhat more likely to speak a foreign language than the city overall (46% vs. 42%), and somewhat more likely to be linguistically isolated (approximately 35% vs. 25%).²⁴⁰

A third of Eastern Neighborhood residents were white, compared to approximately 45% of the city overall (see Figure 57). Conversely, 40% of the Eastern neighborhood residents were Hispanic, compared to approximately 15% of the city overall. This concentration of ethnic groups supported several specialized neighborhood services, such as ethnic groceries and community service organizations.

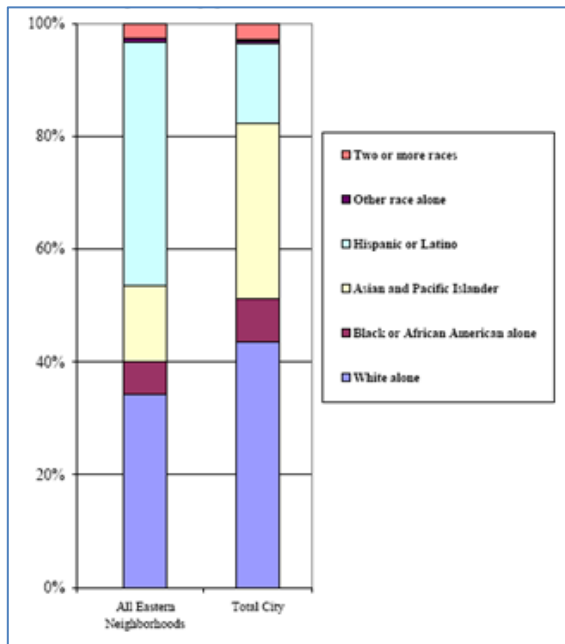


Figure 57: San Francisco race/ethnicity²⁴¹

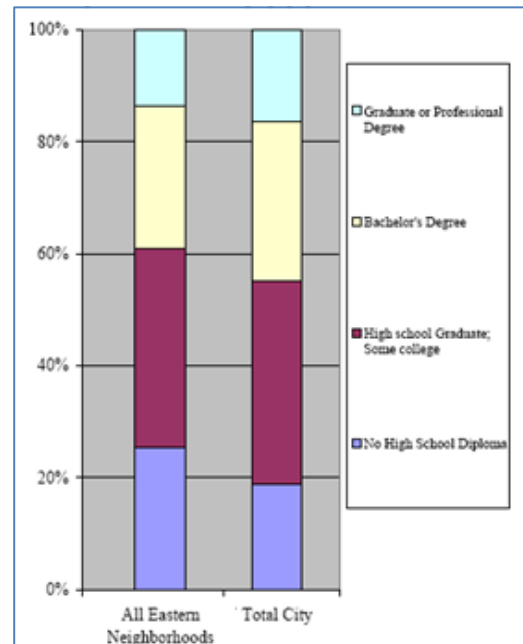


Figure 58: San Francisco educational levels²⁴²

Eastern neighborhood residents had lower levels of educational attainment than the city average; twenty-five percent did not have a high school diploma (see Figure 58).

While San Francisco has a higher proportion of renters to homeowners than many cities (nearly 2:1), Eastern Neighborhood residents were even more likely to be renters (4:1). Eastern Neighborhood

²³⁹ Though this report treats the Eastern Neighborhoods as a unified district, it should be noted that neither population nor demographics were distributed evenly throughout the area. For example, the Mission was home to 70% of the Eastern Neighborhoods’ population, while the Central Waterfront was home to just 1%.

²⁴⁰ Hausrath Economic Group, *Socioeconomic Impacts*, 115-117.

²⁴¹ *Ibid.*, 112.

²⁴² *Ibid.*, 120.

residents were also more likely to live below the poverty line; 17% lived below the federal poverty line, compared to 11% in San Francisco overall (see Figure 59).

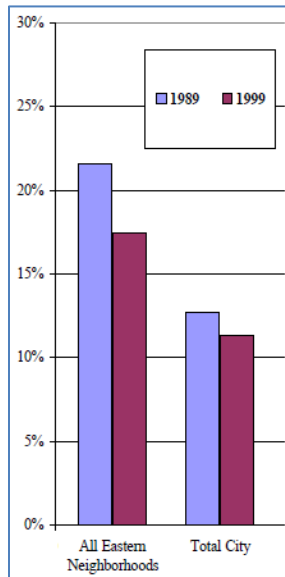


Figure 59: Percent of population at or below poverty level.²⁴³ Note the similarity to Rainier Beach

Business Needs and Compatibility

San Francisco’s research resulted in an understanding of the elements that led to PDR business success, neighborhood compatibility, building choice, and rent needs.

Business Success

The study identified changes in the PDR industry that had allowed some businesses to succeed while others had been driven out. Successful firms tended to demonstrate:

- **Changes in production processes.** Many PDR processes had changed from the space-intensive production line techniques to technology-heavy, knowledge-based, and flexible methods that were more amenable to multi-story buildings.²⁴⁴ Rather than being vestiges of the “old economy,” the successful PDR firms were often a blend of “new” and “old economies.”
- **Heavy technology investment and increased automation.** Firms were relying on specialized technology to perform automatable functions. For example, printing companies used automated cutting and spreading machines. Newer technology was also often smaller, reducing the need for larger workspaces.
- **Quick response times.** Firms located in the city to have increased and rapid contact with their customer based.
- **Reliance on skilled workers.** The shift to technology and automation favored skilled workers over unskilled workers who might once have performed the now automated tasks.

²⁴³ Ibid., 133.

²⁴⁴ City and County of San Francisco Planning Department, *Industrial Land in San Francisco*, 19.

- **Use of computers in design.** Production firms were increasingly relying on computers for design work to increase accuracy and speed turn-around time.
- **Production of short-run, specialized, high end goods.** Successful PDR firms tended to forgo mass-production techniques in favor of short runs of specialized high-end goods. The focus on high-end goods allowed them to afford higher rents.²⁴⁵ This was not limited to one industry. The report found that “metal fabricators, caterers, furniture makers, are thriving in the exploding niche market of custom made, locally produced goods”. However, the importance of production methods made it more difficult to target economic development efforts by industry, as the mass-production oriented firms could not afford the same rent as other firms within the same industry.
- **Strategic location decisions.** Successful PDR firms weren’t in geographically isolated locations. Instead, they located in areas with good road access and transit services, telecommunications and waste disposal infrastructure.

Compatibility

Despite many of the changes noted above, the San Francisco report notes that 70% of PDR businesses were *not* compatible with housing, due to their scale, hours, noise, or odor impacts. In general, the PDR uses preferred wide streets without sidewalks, access to freeways and fueling stations, open storage, or used hazardous materials. Even low-impact businesses still received deliveries and shipping goods, generating truck and traffic noise. Nearly all distribution businesses and most warehousing companies could only operate out of single-story buildings with loading docks, and crucially, trucks played an integral role to their business. R&D businesses, while less intensive than most PDR uses, had high ceilings and other features that made them incompatible with residential use. Repair uses were also generally held to be incompatible. Although some smaller repair companies operated on small items (ex., watches and bicycles), most required open yards for storage and used loud machines. Additionally, locating near more intensive uses was important for repair shops, as that provided them with ready clients.

Building preferences

San Francisco found that PDR businesses tended to cluster geographically, which facilitated the sharing of resources, technology, and services. This clustering also provided easier access to workers with specialized skills, lowered operational costs, and led to more efficient production.²⁴⁶

San Francisco identified the most land intensive PDR uses as the following:²⁴⁷

- Building construction & maintenance
- Food & beverage wholesale & distribution
- Parking, rental & towing

²⁴⁵ Ibid.

²⁴⁶ Ibid., 41.

²⁴⁷ Ibid., 39.

- Large scale manufacturing & wholesale
- Taxi/limo/shuttle
- Trucking, freight, & packing
- Wholesale construction & distribution
- Transportation & delivery services
- Export/import trading companies
- Auto wrecking & scrap storage yards

The key feature that the PDR buildings had in common was flexible space. PDR companies often had undefined or rapidly changing needs. The buildings therefore had large floor plates to allow for the greatest customization. Additionally, buildings often had high ceilings, large loading docks, and ground floor access. However, some uses, particularly high-end production could function in multi-story buildings. Graphic design and garment manufacturing were noted for being particularly suited for relatively small spaces in multi-story buildings. Both of these uses have high employment densities; in other words, they employ large numbers of workers compared to volume of work produced.²⁴⁸ Table 34- Table 36 below indicate which uses had the most flexible space needs.

Table 34: PDR building types by neighborhood. Different types of PDR uses tended to cluster in different neighborhoods with different facilities.

<i>East SoMa</i>	
Building Types / Location Characteristics	PDR Clusters
Small floor plates	Printing and publishing
Garages	Paper products manufacturing and distribution
Upper floor lofts	Broadcasting and telecommunications
Proximity to Downtown	Graphic design
	Auto repair and auto body repair
	Sound recording/film production
	Parking/towing

²⁴⁸ Ibid., 45.

<i>Showplace Square / Potrero Hill</i>	
Building Types / Location Characteristics	PDR Clusters
Showrooms Medium floor plates Single-story and multi-story buildings Accessory yards Freeway access Proximity to residential neighborhoods	Wholesale jewelry, furniture, appliances, auto parts Import/export trading Graphic design Small scale manufacturing Garment manufacturing Arts activities Animal services Shipping and delivery services Construction services and materials wholesale Heavy equipment wholesale
<i>Central Waterfront</i>	
Building Types / Location Characteristics	PDR Clusters
Medium and large floor plates Single-story and multi-story buildings Accessory yards Freeway access	Vehicle and equipment rental Transportation services Food distribution Printing services Paper products manufacturing and distribution Graphic design Garment manufacturing Appliance repair and distribution Other repair and maintenance services Construction services and materials wholesale
<i>Mission</i>	
Building Types / Location Characteristics	PDR Clusters
Medium and large floor plates Single story and multi-story buildings Accessory yards Upper floor lofts Garages Proximity to residential neighborhoods	Printing services Auto repair and auto body repair Photography services Broadcasting Sound recording/film production Garment and accessories manufacturing Wholesale apparel Import/export trading Utilities Food processing Animal services Landscape maintenance services Arts activities
<i>Source:</i> Reprinted from San Francisco’s Eastern Neighborhoods Rezoning Socioeconomic Impacts, p.98	

Table 35: Building type by industry

Industry Type	Commercial Building	Industrial Building	Office Building
Printing & Publishing		X	X
Other Printing & Binding		X	X
Wholesale Printing & Publishing		X	
Photography Services	X	X	X
Graphic Design, Interior Design & Signs	X	X	X
Radio, T.V. Stations & Communication Services			X
Garment Manufacturing		X	
Other Apparel	X	X	
Wholesale Apparel	X	X	X
Transportation & Delivery Services		X	X
Taxi/Limo/Shuttle		X	
Trucking, Freight, & Packing		X	X
Parcel Shipping & Courier Services		X	
Public Warehousing & Storage		X	
Sound Recording/Film Production		X	X
Wholesale Flowers	X		
Catering & Food Processing		X	
Food & Beverage Wholesale & Distribution		X	
Building Construction & Maintenance	X	X	X
Wholesale Construction & Distribution		X	
Furniture Manufacturing & Repair/Wood Work		X	X
Furniture Wholesale & Showrooms	X	X	X
Appliance Repair		X	
Interior, Household & Appliance Wholesalers		X	
Large & Heavy Equipment Wholesalers		X	X
Auto & Boat Repair, Parking & Renting	X	X	
Wholesale Auto Parts		X	
Theaters/Sports Facilities/Gyms & other Recreation		X	X
Export/Import Trading Companies	X	X	X
Jewelry Wholesale Manufacturing	X	X	X
Landscaping/Horticulture & Animal Services		X	
Chemicals/Plastics/Leather Goods Manufacturing		X	
Waste Management		X	

Source: Reprinted from *Industrial Land in San Francisco*, p. 43

Table 36: Percent of San Francisco Eastern Neighborhood PDR businesses in multi-story buildings.
Note that about half of most categories could function in multi-story buildings

Category	Percent in Multi-Story Building
Publishing	
Publishing/Printing	46%
Printing Services	50%
Paper Manufacturing Wholesale	50%
Total Publishing	47%
Audio Visual	
Photo Services	0%
Graphic Design	53%
Radio/TV Stations	53%
Sound & Film Recording	44%
Total Audio Visual	46%
Arts	
Arts Activities	13%
Total Arts	13%
Fashion	
Garment Manufacturing	34%
Fabric/Apparel Manufacturing	46%
Wholesale Apparel	72%
Total Fashion	53%
Transport	
People Transport	36%
Goods Transport	25%
Courier Services	22%
Total Transport	29%
Food-Event	
Wholesale Flowers	93%
Large Food Processing	51%
Wholesale Food Distribution	29%
Total Food-Event	43%
Category	Percent in Multi-Story Building
Interior Design	

Category	Percent in Multi-Story Building
Wholesale Jewelry	66%
Imports/Export Trading	23%
Furniture Manufacturing	28%
Wholesale Furniture	64%
Total Interior Design	44%
Construction	
Construction/Building Maintenance	22%
Wholesale Construction	44%
Total Construction	24%
Equipment	
Appliance Repair	20%
Interior, Household & Appliance Wholesale	47%
Heavy Equipment Wholesale	27%
Small Manufacturing	47%
Total Equipment	31%
Motor Vehicles	
Towing/Parking/Rental	20%
Wholesale Auto Parts	50%
Auto Repair	32%
Auto Body Repair	22%
Total Motor Vehicles	30%
Other	
Animal Services/Kennel/Landscape	33%
Chemical/Leather Repair	31%
Waste Management	18%
Utilities	63%
Public Warehouse	66%
Total Other	43%
Grand Total	37%
<i>Source: Reprinted from Final Report: Supply/Demand Study for Production, Distribution, and Repair (PDR) in San Francisco's Eastern Neighborhoods, p.53.</i>	

Real estate brokers and business owners reported that some PDR firms – particularly distribution firms – would rather remain in inadequate buildings that are in proximity to customers than relocate to higher quality buildings outside of the city.²⁴⁹

Rent

PDR firms were able to pay less than half the rent per square foot than office users (see Table 37). This is consistent with research on the broader light industrial market. However, San Francisco also found that some higher-end production firms (ex., graphic design, photography, and other media related activities) were able to pay more in rent than lower-end retail. Even some lower-end production firms were paying rent equivalent to low end residential.

Table 37: Approximate rental rates by sector (per square foot per month). Note that high end production firms were able to pay the highest rent, but still much less than offices.

User Type	Approximate Rent
Office Uses (Management, Information, and Professional Services)	\$4.00
Higher-end Production Firms	\$1.00-\$1.50
Lower-end Production Firms	\$0.50-\$1.00
Retail	\$1.00-\$2.00
Wholesale	\$0.40-\$0.80
Transportation	\$0.20-\$0.50
Construction	\$0.20-\$0.50
<i>Source: Reprinted from Industrial Land in San Francisco, 45.</i>	
Note: Data from interviews with brokers and business owners, 2001.	

The planning process indicated that rents were likely to continue to be a challenge, in part because of community preferences. The community requests included “cleaner streets, wider sidewalks, more street trees, bike lanes, and increased street lighting,” all of which could increase property values.²⁵⁰

Mitigation: Mixed Use Zoning, PDR Zoning, and Business Support

In response to their findings on compatibility issues, San Francisco created a number of new zoning codes, including zones that were intended for medium to heavy impact PDR uses only, and mixed zones that were intended for light PDR, retail, office, and housing. Throughout the rezoned areas, the code was changed to minimize conflicts between uses, particularly to support pedestrian travel. For example, curb cuts are now limited on priority transit streets; blind walls and window grills are discouraged; and parking entrances, loading bays and services entrances are to be separated from residential entrances

²⁴⁹ Ibid.

²⁵⁰ *Mission: Workshop #3 Summary* (San Francisco, CA: City And County Of San Francisco Planning Department, June 19, 2002), 1, <http://www.sf-planning.org/Modules/ShowDocument.aspx?documentid=1413>.

when possible.²⁵¹ In new non-residential zones, loading spaces are to be developed internally to the development.²⁵²

It should be noted that the zoning changes were not deemed to be sufficient to meet all the needs of PDR businesses. Instead, the Planning Department recommended that the city provide additional programmatic support to locally-owned or operated businesses, businesses that contributed to the neighborhoods' cultural character, and organizations and businesses that served the needs of lower income households.

A summary of the new mixed use and PDR zones follows.

Mixed Use Zones

San Francisco created four new mixed use zones: Mixed Use-General, Mixed Use-Residential, Mixed Use-Office, and Urban Mixed Use. All of the mixed-use districts require that street frontages meet pedestrian-oriented requirements, parking areas be screened, and rooftop equipment hidden to ensure that buildings blend with the neighborhood. Though not strictly a performance zoning element, the code states that, "no use which creates conditions that are hazardous, noxious, or offensive through the emission of odor, fumes, smoke, cinders, dust, gas, vibration, glare, refuse, water-carried waste, or excessive noise" in the mixed use districts. Despite these restrictions, City consultants assumed that 11% of future PDR building space would be accommodated in mixed-use developments.²⁵³

The planners anticipate that market forces will push most PDR uses from the Mixed Use-General, Mixed Use-Residential and Mixed Use-Office zones, with the exception of small, high-value added businesses. However, the City expects that the Urban Mixed Use zone's higher affordable housing requirements and greater limitation on office and retail use will keep land values lower, thus allowing a greater range of PDR businesses to remain.

The specifics of the zoning codes are addressed below:

Urban Mixed Use: The Urban Mixed Use district has the highest industrial intensity of the mixed use districts. It is intended to form a buffer between PDR districts and residential neighborhoods. There is no residential dwelling unit density limit. Light manufacturing is allowed, though not at the intensity allowed in the PDR districts. This includes food processing (but not mechanized line assembly of canned or bottled goods), apparel and garments, furniture and fixtures, printing, leather products, pottery, glass blowing, photographic, medical and optical goods, and watches and clocks. As in the PDR districts, machines are limited to five horsepower, and the equipment cannot occupy more than ¼ of the total gross floor area. Retail establishments over 4,000 square feet require conditional approval. More than

²⁵¹ City and County of San Francisco, *East SoMa Area Plan*, December 2008, 32-33, <http://www.sf-planning.org/Modules/ShowDocument.aspx?documentid=2107>.

²⁵² *Ibid.*, 42.

²⁵³ Economic and Planning Systems, *Final Report: Supply/Demand Study for Production, Distribution, and Repair (PDR) in San Francisco's Eastern Neighborhoods* (City and County of San Francisco, April 15, 2005), 55, <http://www.sf-planning.org/Modules/ShowDocument.aspx?documentid=1929>.

25,000 square feet of retail *per lot* is only permitted if the ratio of other permitted uses to retail is at least 3:1. Office is not generally allowed on the first floor. The Urban Mixed Use district has high affordability requirements; based on its location and size, developments must include 18% to 45% affordable units (or equivalent land dedication). Rental housing is subject to somewhat lower affordability requirements. The code requires a minimum floor-to-floor height of 17 feet on the ground floor. While residential and PDR uses do not have window requirements, office, retail, and any other uses must have frontages that have enough windows to be at least 60% transparent.²⁵⁴

Mixed Use General: The mixed use general zone is very similar to the Urban Mixed Use zone, with less stringent affordable housing requirements and retail limitations. For example, unlike the Urban Mixed Use Zone, the Mixed Use General Zone conditionally allows retail uses over 50,000 square feet, but still requires three square feet of non-retail space for every square foot of retail development. This district is designed to “maintain and facilitate the growth and expansion of small-scale light industrial, wholesale distribution, arts production and performance/exhibition activities, general commercial and neighborhood-serving retail and personal service activities while protecting existing housing and encouraging the development of housing at a scale and density compatible with the existing neighborhood.”²⁵⁵ Ground floor to floor height minimums are reduced to 14 feet, although the same frontage requirements apply.²⁵⁶

Mixed Use-Residential and Mixed Use-Office: Remaining mixed use zones are similar to the Mixed Use General Zone, with fewer restrictions on the size of retail and the location of offices.

Based on the Environmental Impact Review of the anticipated zoning changes, the City also requires a review for businesses that are expected to generate toxic air contaminants. This requires a site survey to identify “residential or sensitive uses” before approval. Businesses that are expected to generate toxic air contaminants include “dry cleaners; drive-through restaurants; gas dispensing facilities; auto body shops; metal plating shops; photographic processing shops; textiles; apparel and furniture upholstery; leather and leather products; appliance repair shops; mechanical assembly cleaning; printing shops; hospitals and medical clinics; biotechnology research facilities; warehousing and distribution centers; and any use served by at least 100 trucks per day.”²⁵⁷

PDR Zones

The new zoning includes two levels of PDR intensity. *Residential uses are prohibited* and other non-PDR uses are restricted in size and/or not allowed on first floors. PDR impacts are controlled by limiting business sizes and intense uses, as well as restricting certain activities to inside buildings. New

²⁵⁴ City and County of San Francisco Municipal Code, sec. 145.1.

²⁵⁵ City and County of San Francisco Municipal Code, sec. 840, 2008.

²⁵⁶ City and County of San Francisco Municipal Code, sec. 145.1.

²⁵⁷ City and County of San Francisco Planning Department, *Eastern Neighborhoods Rezoning and Area Plans Draft Environmental Impact Report*, June 30, 2007, 512, <http://www.sf-planning.org/Modules/ShowDocument.aspx?documentid=3965>.

developments must have ground floor heights of at least 15' and must include as much PDR space as was present before the redevelopment.²⁵⁸

PDR-1: The PDR-1 zone was intended to create a buffer between residential neighborhoods and more intensive light-industrial uses.²⁵⁹ PDR businesses in these zones must make less external noise, odors, and vibrations; and engage in fewer trucking activities than those in PDR-2 zones. They must also generally operate completely within enclosed structures. Other non-PDR uses are limited; retail and grocery stores are limited to 2,500 square feet; offices are restricted to the upper floors of buildings and/or limited to 5,000 square feet; and many institutional uses are not allowed. More intensive uses, such as laundry cleaning or dyeing are only allowed if conducted inside a building. Most indoor auto-services are allowed, although each establishment is limited to 7,500 square feet in some areas. Storage yards are allowed with screening requirements and size limitations. Light manufacturing work is allowed; impacts are controlled by restricting the capacity of machines to five horsepower, limiting activity to indoor areas, prohibiting machine use within 20 feet of a residential district, limiting manufacturing to fractions of the building's floor area, and in some areas, limiting the size of the establishment to 5,000 square feet. Higher impact uses are conditional, and prohibited from areas near residential uses. These high impact uses include metal working, concrete mixing, malt processing, foundries, enameling, lacquering, wholesale paint mixing, woodworking mills, liquor distillation, pickle-making, and meat product-making.

PDR-2: The PDR-2 zone allows all but the heaviest light industrial uses; for example, incinerators are forbidden in the PDR-2 zone. Unlike in the PDR-1 zone, business can be conducted outdoors. Conditional approval is required for moderately high impact activities such as curing, smoking or drying fish; and manufacture, refining, or distillation of noxious materials such as ammonia, asbestos, asphalt, disinfectant, perfume, etc.

Both PDR zones allow offices and attached storage for building, plumbing, electrical, painting, roofing, furnace or pest-control contractors; interior decorating shops; upholstering shops; sign-painting shops; and carpentry shops. In areas near housing, catering is limited to 5,000 square feet and print shops, newspaper publication, and blueprinting shops are limited to 2,500 square feet. Office and retail uses are restricted in both zones.

Equity Impacts of Rezoning

An assessment of the socioeconomic impacts of the new zoning found that the changes, while decreasing the amount of industrial zoned land, would have two positive effects on equity. First, by creating land dedicated only to PDR uses, the net displacement of PDR jobs should be less than would otherwise have occurred. Second, the inclusion of stricter affordable housing requirements should mediate the loss of blue-collar jobs.

²⁵⁸ *City and County of San Francisco Municipal Code, sec. 145.5, 2008; City and County of San Francisco Municipal Code, sec. 231A, 2008.*

²⁵⁹ *City and County of San Francisco Municipal Code, sec. 210.8, 2008.*

Key Lessons

- **Challenge of industry change for unskilled workers:** Trends in the PDR industry do not favor unskilled workers. An increased reliance on technology in general, and computers in particular may speak to the industry's survival, but will make it harder to gain entry into the field.
- **High barriers to entry for entrepreneurs:** While high-end production firms are better suited for residential environments like Rainier Beach, the high capital investments required to purchase new, compact equipment and operate in small production spaces may prove a greater barrier to low-capital entrepreneurs.
- **Importance of proximity:** High-end production firms relied on very close proximity to their customer base.
- **Challenge of sector targeting:** Space needs vary within industries, making it difficult to target any one industry.
- **Importance of truck traffic for compatibility:** The vast majority of PDR uses were held to be incompatible with housing, particularly due to truck traffic.²⁶⁰
- **Insufficiency of zoning:** Zoning alone was not deemed sufficient to support the small businesses in the mixed-use areas. Other solutions included techniques such as assistance with payroll taxes, lower utility rates, etc.
- **Availability of mitigation measures:** Mitigation techniques could include limiting the horsepower of machinery, limiting outdoor use, limiting the size of businesses, and limiting the amount of floor space that can be dedicated to noise-producing work.
- **Importance of high ceiling:** First floor heights need to be 15-17 feet tall at a minimum.
- **Challenge of dealing with competing community values:** Community values factor heavily in determining compatibility. Affordable housing may provide a greater benefit to the poor than neighborhood jobs.

²⁶⁰ Marshall Foster (Director of Planning, Seattle Department of Planning and Development), interview.

Mini-Case Study: La Cocina Kitchen Incubator

Overview

The La Cocina kitchen business incubator offers an example of a neighborhood-compatible light industrial food preparation business. The non-profit incubator leverages private donations, rich transit, and community members' cooking skills for its success. The kitchen's location in a residential part of San Francisco's Mission neighborhood makes it a useful case study for Rainier Beach (see Figure 60). However, two differences between Rainier Beach and the Mission should be kept in mind when interpreting the case study. First, Rainier Beach is much less urban and more sparsely populated. Secondly, the Mission is well-known throughout San Francisco for its many ethnic restaurants, while Rainier Beach's cultural assets are not as well known.²⁶¹



Figure 60: La Cocina.²⁶² Note attractive street-facing design and roof HVAC-masking

History

Established in 2005, La Cocina is San Francisco's first kitchen business incubator.²⁶³ The project is largely the result of one anonymous individual who came up with the idea for the incubator, provided the

²⁶¹ Community Land Use and Economics Group, LLC, *Retail Development Strategy*, 37.

²⁶² Andy J. Wang, "The Best New Buildings of the Decade," *Curbed SF*, November 18, 2009, http://sf.curbed.com/archives/2009/11/18/the_best_new_buildings_of_the_decade.php.

²⁶³ "About La Cocina," *La Cocina*, n.d., <http://www.lacocinasf.org/about-la-cocina/>.

financial backing, and donated her own property.²⁶⁴ Three non-profits - Arriba Juntos, The Women's Initiative for Self-Employment and The Women's Foundation of California - joined forces to implement the idea. Additional funds were obtained from several smaller donors.

Project Description

The incubator's mission is "...to cultivate low-income food entrepreneurs as they formalize and grow their businesses by providing affordable commercial kitchen space, industry-specific technical assistance and access to market opportunities."²⁶⁵ The incubator provides shared kitchen space, technical assistance, and marketing opportunities, focusing on women from communities of color and immigrant communities.

The incubator exists to overcome what it calls the "notoriously" high cost of entry into the culinary market. This high cost is a result of licensing fees, commercial insurance, restaurant start-up costs, standards for shelf space at retailers, and other factors.²⁶⁶ La Cocina allows chefs to bypass or postpone these expenses by charging only an hourly, sliding scale rent between \$10 and \$15 an hour (a similar Bay Area for-profit enterprise charges \$18 an hour).²⁶⁷ In order to use the space, applicants must submit a business plan and a viable product idea, or have a restaurant or catering work history.

The program offers technical assistance and translation to help participants to obtain a business license and insurance. A four-man staff and professional chef advisors offer consultation and help find placement for the business owners' products.²⁶⁸

Building Description

La Cocina occupies a 4,400-square-foot building. It offers a wide range of industrial cooking equipment for large-scale food and catering production, including mixers, ovens, professional ranges, slicers, and commercial-size freezers (see Figure 61 and Figure 62).²⁶⁹ The building uses an industrial HVAC system, but it is placed in the middle of the roof, minimizing its visibility.

²⁶⁴ Joanna Currier, "What's cookin': La Cocina helps Mission District women with culinary talent go pro," *San Francisco Bay Guardian*, August 24, 2005, http://www.sfbg.com/39/49/x_biznews.html.

²⁶⁵ "About La Cocina."

²⁶⁶ Ibid.

²⁶⁷ Currier, "What's cookin': La Cocina helps Mission District women with culinary talent go pro."

²⁶⁸ Ibid.

²⁶⁹ Ibid.



Figure 61: La Cocina kitchen. Note the high ceilings.²⁷⁰



Figure 62: Chefs at work²⁷¹

Neighborhood Description

La Cocina is located in the Mission District, one of the neighborhoods covered by San Francisco's mixed use zoning. As previously noted, the neighborhood is an ethnically diverse low-income neighborhood. La Cocina itself is located on a residential street, as seen in Figure 63, Figure 64, and Figure 65).

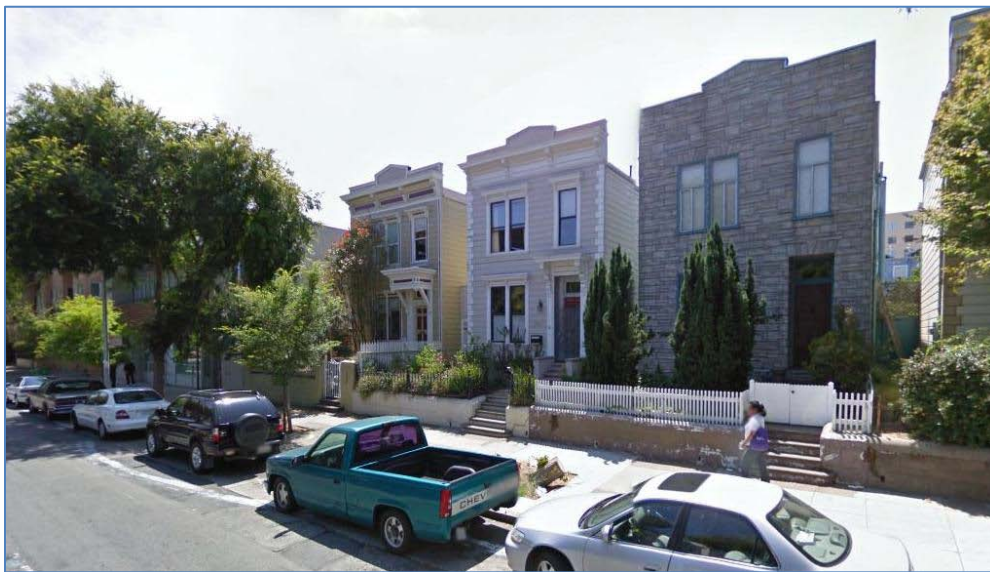


Figure 63: La Cocina kitchen incubator (second building on left, behind tree)²⁷²

²⁷⁰ "San Francisco Bay Area Venue Options," *Parties that Cook*, n.d., <http://www.partiesthatcook.com/cooking-school-kitchens-san-francisco/>.

²⁷¹ Janine Kahn, "State of the Cart Sidebar: El Huarache Loco," *SF Weekly: Street Eats*, July 16, 2008, http://blogs.sfweekly.com/foodie/2008/07/state_of_the_cart_sidebar_el_h.php.

²⁷² "2948 Folsom San Francisco, CA 94110," *Google Maps*, n.d., <http://maps.google.com/maps?q=2948+Folsom+San+Francisco,+CA+94110&oe=utf-8&rls=org.mozilla:en->



Figure 64: La Cocina kitchen incubator (first building on right). Note surrounding residential homes.²⁷³

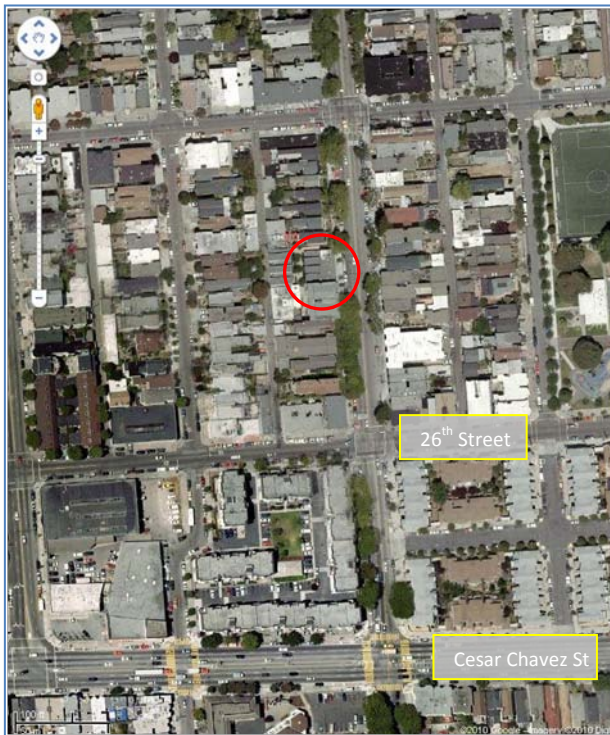


Figure 65: La Cocina overhead view. Note alley access, proximity to busy 26th Cesar Chavez Streets to the South, S Van Ness to the West

US:official&client=firefox-a&um=1&ie=UTF-8&hq=&hnear=2948+Folsom+St,+San+Francisco,+CA+94110&gl=us&ei=-cHcS-y9DYOqswPo7_yEBw&sa=X&oi=geocode_result&ct=image&resnum=1&ved=0CAgQ8gEwAA.
²⁷³ Ibid.

Compatibility

Several aspects of the incubator increase its compatibility with the neighborhood. As can be seen in Figure 60, it is designed to match the street frontage of the nearby buildings. The façade is varied and articulated, and well-maintained. Transparency needs are met through the second story offices, and the glass roll-up door. Street trees improve the walking environment, and curb cuts are limited to a standard garage door cut. The scale of the establishment also contributes to its compatibility. Freight needs are decreased because the chefs are all small vendors. Transit in the area is rich, so employees, small business owners, and other visitors can easily access the facility without needing parking.

Key Lessons

- **Importance of building design** – The building is specifically designed to fit into a residential environment.
- **Importance of scale** – The small scale of the individual enterprises within the incubator decrease the impact of deliveries.
- **Importance of location** – The area’s rich transit makes it possible for owners and employees to easily access the site and move goods without relying on large trucks.
- **Importance of non-profit involvement** – The presence of the non-profit organization provides valuable assistance to businesses of such a small size. Because of its donation-based funding structure and mission-driven purpose, it provides equipment and production space that would otherwise be unaffordable to its tenants. Additionally, having one entity in charge of the facility provides a single point of contact to communicate with the neighbors.

Case Study: Boulder Steel Yards, Boulder, CO

Overview

The Boulder Steel Yards development offers an example of same-site industrial/residential mixed use development. Unlike other case studies in this report, the Steel Yards project was introduced into an area that was already considerably mixed in land use types. Like Rainier Beach, the Steel Yards is close to both industrially zoned land and recent transportation improvements. However, the Steel Yards is closer to activity centers such as the downtown and university areas. The case study offers a model of how very light industrial uses can be incorporated in residential development, but also highlights the challenge of promoting industrial businesses in the face of high land prices.



Figure 66: Aerial view of the Steel Yards (in red). Note the busy retail street in the foreground and the train tracks in the background.²⁷⁴

Project History

The development's name refers to a steel yard office that once stood on the spot; there are no current steel-oriented businesses on the site. Instead, the site is home to a mixed development of condominiums, retail, office, and industrial businesses (see Figure 66). The original owners of the site intended to use it to develop two large buildings (including a Home Depot) and significant parking. However, after the city expressed opposition, the owners consulted with Coburn Development, which

²⁷⁴ "Carbon Space Co-Working Rental Space in Boulder CO," *Carbon Space Co-op*, n.d., <http://www.carbonspacecoop.com/index-2.html>.

proposed the mixed-use concept.²⁷⁵ The City of Boulder then worked with Coburn to revise the zoning code to allow for single-site mixed use. The units were built in 2003 and 2004.²⁷⁶

Project Description

The Steel Yards project is located on 10 acres at 30th Street and Bluff Street in Boulder, Colorado.²⁷⁷ As shown in Figure 68, the development encompasses a wide variety of land uses:

- 83,000 square feet of housing (90 residential units)
- 19,400 square feet of retail space
- 60,600 square feet of office space
- 28,400 square feet of service industrial space,
- 27,400 square feet of light industrial space²⁷⁸

The arterial-facing side of the development consists of offices over restaurants and retail. Small industrial units, offices, and live/work lofts are located on one edge of the development, perpendicular to the arterial, and adjacent to train tracks (see Figure 67 and Figure 68). The residential housing and a central lawn are therefore buffered from the arterial traffic, industrial traffic, and (to a lesser extent) the train traffic.



Figure 67: View from 2nd story industrial unit of housing (right foreground) and retail/office (left rear). Note that the retail building separates the housing from arterial traffic.

²⁷⁵ Colorado Sprawl Action Center, "Smart Growth Hall Of Fame 2001: Ten Examples Of Good Planning Decisions In Colorado," *CO Sprawl Action Center*, n.d., <http://www.sprawllaction.org/halloffame/FSteelyards.html>.

²⁷⁶ "Property Records Search, Steel Yard Street Addresses" (Boulder County Assessor, n.d.), http://webpubapps.bouldercounty.org/assessor/propsearch/assess_input.asp.

²⁷⁷ Colorado Sprawl Action Center, "Smart Growth."

²⁷⁸ *Ibid.*



Figure 68: Steel Yards map. Note that residential buildings (E, F, G, J, K, L, M, N, O, P, and Q) are sheltered from arterial by office/retail (A, B, C, and H) and office-only (D). Also note that industrial buildings (R, S, T, U, and V) are closest to train tracks and neighboring industrial uses.

Under the original proposal, a large proportion of the units were to be deed-restricted affordable housing. The row house style condos range from one to three-bedrooms and cost from \$250,000 to \$400,000 (see Figure 69 through Figure 72).²⁷⁹ Some feature views of the nearby Rocky Mountains.

²⁷⁹ "Why Purchase in Boulder's Steel Yards Community," *Eco-modpod*, August 18, 2009, <http://ecomodpod.wordpress.com/2009/08/18/why-live-in-the-steel-yards-boulders-fashion-funky-pedestrian-community/>.

Site circulation favors pedestrian travel. Parking is largely underground, sidewalks and striped crosswalks run throughout the site, and landscaping is extensive.



Figure 69: Rowhouses



Figure 70: Residential housing. Note underground parking.



Figure 71: Residential unit in the Steel Yards²⁸⁰



Figure 72: Residential interior²⁸¹

Industrial units range in size from 762 to 3,040 square feet, and have generally sold for between \$190 and \$200 per square foot.²⁸² Units feature high ceilings, open interiors, and sturdy floors (see Figure 73 through Figure 76).

²⁸⁰ Zachary Epps, "Boulder Real Estate Sold in The Boulder Steel Yards," *Boulder Real Estate Blog*, June 25, 2007, <http://www.boulder-buzz.com/boulder-real-estate-sold-in-the-boulder-steel-yards/>.

²⁸¹ Ibid.

²⁸² "Property Records Search."



Figure 73: Industrial units at the Steel Yards²⁸³



Figure 74: Interior of office coop²⁸⁴

Note attractive design, and extensive windows. Also note high ceilings, natural light, exposed duct work, and suspended acoustic dampeners on right



Figure 75: Industrial interior



Figure 76: Industrial interior

Note concrete floors, industrial furnishing, and open floor plan. Also note small scale equipment on right (packing machine for small-box shipments)

Industrial buildings are advertised as “craftsman units” and are marketed towards “contractors, commercial kitchens, warehouse or distribution, wholesale business, small theater for performances or rehearsal space, art or craft studio, offices for computer design, telecommunications and vocational

²⁸³ “Carbon Space.”

²⁸⁴ Ibid.

schools.”²⁸⁵ Other uses are allowed with conditional approval, including restaurant and day care facilities.²⁸⁶

The development also includes live/work units, an office-only building, and a children’s art center next to the central lawn (see Figure 77 through Figure 79).



Figure 77: Live/work studios facing industrial units **Figure 78: Office-only building**



Figure 79: Art studio

²⁸⁵ Acquire World Class Real Estate Services, “3200 Carbon Place, Unit 102 Boulder, Colorado,” n.d., <http://www.insideacquire.com/documents/3200CarbonBrochure.pdf>.

²⁸⁶ Acquire World Class Real Estate Services, “The Steelyards: 3014 Bluff Street, Unit H-101,” n.d., http://www.insideacquire.com/properties/documents/3014Bluff_002.pdf.

Current Users

The Steel Yards is home to a wide range of businesses, which are listed in the appendix. They include:

- An electrical engineering firm
- Offices of several professional services, including several physical therapists and psychologists.
- A “coop” office company, which offers “designers, writers, architects, developers, entrepreneurs, programmers, brand builders, marketing gurus, PR mavens, technologists, artists, media professionals and photographers” shared office space, IT equipment, and high speed internet access in an open floor plan for monthly rates
- A small online marketing group
- A small word-of-mouth marketing group
- A multimedia software company
- A satellite office for a nine-person architecture firm.
- An herbal remedy wholesaler and mail order company, specializing in small batch organic herbs
- A stone, brick, and tile contractor
- A roofing contractor
- A general contractor
- An online retail and wholesale mail-order gemstone component and bead distributor
- A youth travel company
- Several photographic studios
- A sales office for custom doors and windows
- An affordable housing real estate and property management consultancy firm

Neighborhood Description

The development was created in a commercial area of a mixed-use neighborhood. The area is one of the few remaining places in Boulder where service industrial businesses are still present (automobile repair and services, personal services and small-scale manufacturing, etc.).²⁸⁷ It has many destinations within a walkable range, including grocery stores, a book store, fitness centers, and other amenities. Colorado University and downtown Boulder are less than a mile away, providing employment and shopping opportunities (see Figure 80). Both are easily accessed by bus transit, arterial connectors, and a nearby bike trail. Local businesses have also benefitted from a neighborhood-wide revitalization project, which took place just prior to the Steel Yard’s development.²⁸⁸

²⁸⁷ *Transit Village Area Plan: Opportunities & Constraints* (Boulder, CO: City of Boulder Planning Department, April 11, 2005), H-11, www.bouldervalleycompplan.net.

²⁸⁸ Colorado Sprawl Action Center, “Smart Growth.”

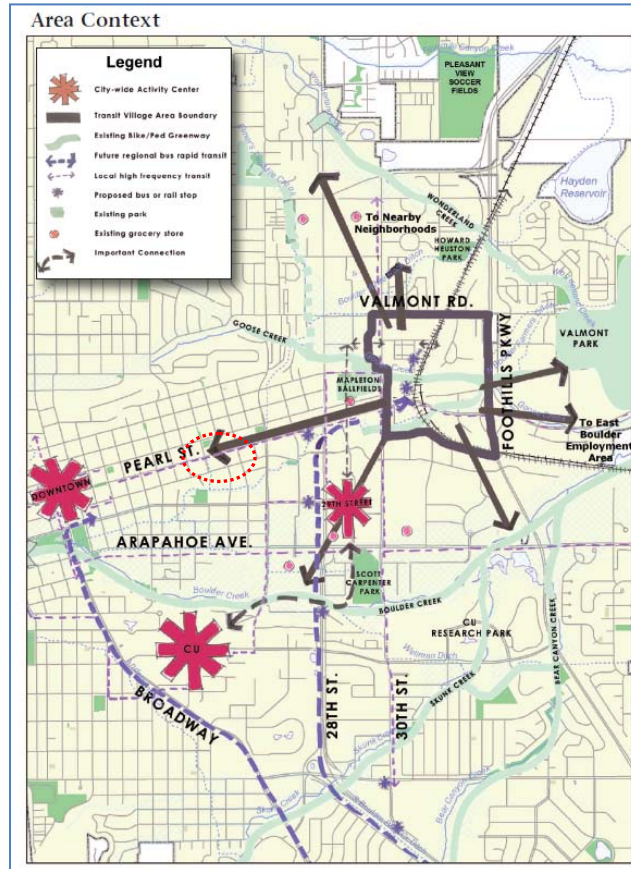


Figure 80: Boulder Transit Village area.²⁸⁹ Note the proximity to downtown, university, and other employment centers.

The Steel Yards development is one element in a larger 160-acre “Transit Village Area” plan, which covers the land to the north, south, and east of the Steel Yards (see Figure 81). The plan is an attempt to leverage upcoming commuter rail and bus rapid transit improvements, in accordance with a comprehensive plan commitment to focus development on infill and transportation oriented development.²⁹⁰ The Transit Village Area will include extensive parking management, requirements that parking be rented separately from buildings, a series of phased infrastructure investments, and FAR incentives for green building.²⁹¹

The plan is also intended to support the continued existence of service commercial and service industrial uses, which it says “serve essential, everyday needs of residents and businesses.”²⁹² To mitigate the

²⁸⁹ *Transit Village Area Plan* (City of Boulder, September 2007), 5, http://www.bouldercolorado.gov/files/PDS/Transit%20Village/TVAP%20final%20draft/transit_village_area_plan_low.pdf.

²⁹⁰ Colorado Sprawl Action Center, “Smart Growth.”

²⁹¹ *Transit Village Area Plan*, 14-15.

²⁹² *Ibid.*, 10.

anticipated rise in rents for these businesses, the plan expands the mixed office, residential, and industrial use zoning of the Steel Yards with minimum nonresidential requirements.

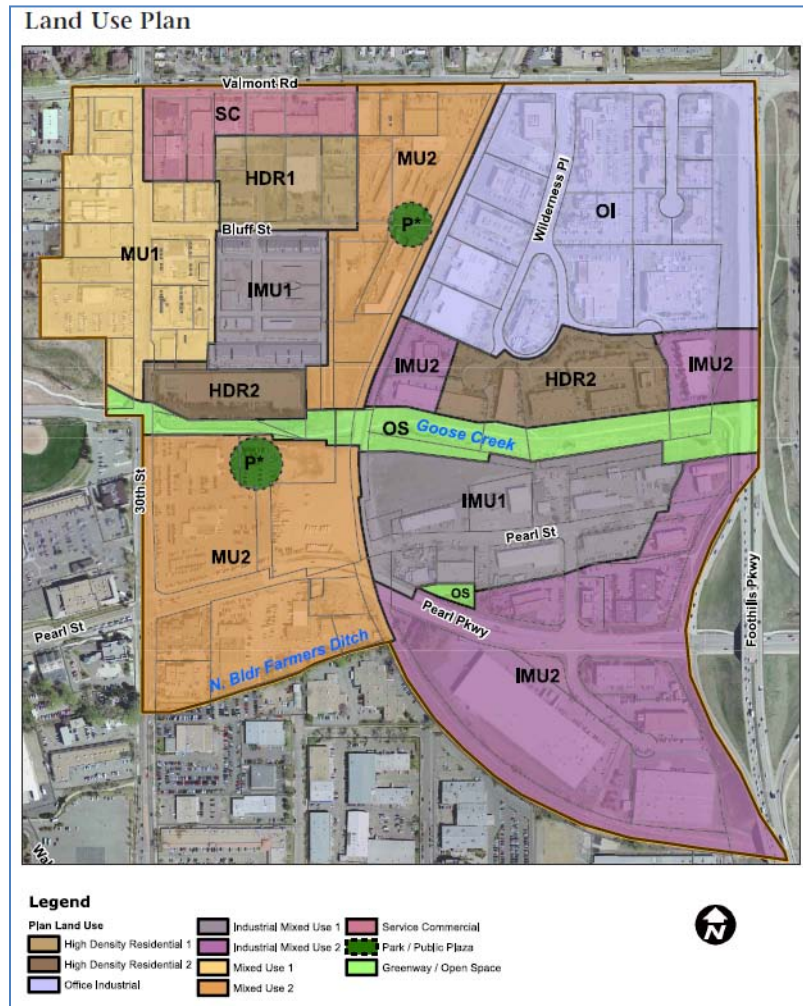


Figure 81: Transit Village Area land use plan.²⁹³ Note transition to mixed uses and inclusion of industrial use

As discussed previously, the plan to incorporate industrial and industrial service businesses in the transit village plan is largely untested and may fall victim to disparate rents. While the Steel Yards project is currently tenanted, an analysis of the residual land values under different development strategies found that mixes including industrial uses would be unprofitable.²⁹⁴

Although the development has not been finalized, one conception is for the park to become a “Green Technology Park.” This would leverage the city’s existing technology cluster, it’s ability to attract talent

²⁹³ Ibid., 13.

²⁹⁴ Economic and Planning Systems, *Residual Land Value Analysis Boulder Transit Village Area Implementation Plan* (City of Boulder, March 2, 2007), http://www.bouldercolorado.gov/files/residual_land_value_analysis.pdf.

by way of its high quality of life, the presence of several research universities, an environmentally progressive culture, it's location near the National Renewable Energy Laboratory, and neighboring Denver's previous investments in green infrastructure.²⁹⁵

Mitigation: Mixed-Use Zoning

Use Regulations

The Boulder Department of Planning and Development worked with Coburn Development to design new zoning that would allow the desired level of mixing. This new zone, and the surrounding zones, are shown in Figure 82 and described below:

- Steel Yard Zoning:
 - Industrial - Mixed Services (IMS) – the majority of the development footprint is covered by this zoning. It is intended to “provide a *transition between a main street commercial area and established industrial zones*. Industrial main street areas are intended to develop in a *pedestrian-oriented pattern, with buildings built up to the street*; first floor uses are predominantly industrial in character; uses above the first floor may include industrial, residential, or limited office uses...[emphasis added]”²⁹⁶
 - Business - Transitional 1 – this element of the code covers the arterial-facing portion of the property. These zones are intended to “buffer a residential area from a major street and are primarily used for commercial and complementary residential uses, including... temporary lodging and office uses.” They are not necessarily pedestrian-oriented.
 - Business - Main Street – a small corner of the arterial-facing side of the development is intended for commercial uses that serve the surrounding residential neighborhoods. These are intended to be pedestrian-oriented, with buildings built up to the street and first floor retail with residential and office uses above.
- Neighboring parcels:
 - Business - Transitional 1 – parcels across the arterial are zoned for commercial property used to buffer residential areas (see above).
 - Industrial - Service 1 – parcels to the north and south are intended to be “primarily used to provide to the community a wide range of repair and service uses and small-scale manufacturing uses.”
 - Industrial – General – parcels across the railroad tracks to the east are intended for “a wide range of light industrial uses, including research and manufacturing operations and service industrial uses... Residential uses and other complementary uses may be allowed in appropriate locations.”

²⁹⁵ Conor Merrigan, *Green Technology Report for the Transit Village Area* (City of Boulder Planning Department, 2007), 7, http://www.boulderinnovationcenter.com/PDF/Green_Tech_Park_Boulder.pdf.

²⁹⁶ *Boulder Revised Code, 9-5-2 Zoning Districts*, n.d.

- Non-adjacent parcels:
 - Residential - Medium 1 (RM-1) – these areas are zoned for medium density “attached residential development [ex., condominiums and apartments].”
 - Mobile Home (MH) - this area is used by medium density trailer parks.
 - Business - Regional 1 (BR-1) – this zone is intended for large-scale retail and commercial business centers which serve greater Boulder county.
 - Business - Community 1 (BC-1) - these areas are zoned to support medium-scale retail centers which serve several neighborhoods.



Figure 82: Boulder zoning map. Note Steel Yards in red box.²⁹⁷

The zoning was written to blend uses that would usually be found in either residential or industrial service zones. For example, residential duplexes, apartments and townhouses are allowed by right in most zones, but restricted to upper floors in Industrial Service-1 zones and require a cumbersome administrative use review in more intensive industrial zones. The Steel Yard’s IMS zoning falls in the middle of this continuum; residential duplexes, apartments and townhouses are allowed by right, but require an administrative use review if 50% or more of the floor area is for residential use.

²⁹⁷ “EMapLink: Planning” (City of Boulder, CO, n.d.), http://gisweb.ci.boulder.co.us/website/pds/pds_eMapLink/viewer.htm.

The IMS zone is also unique in that it:

Allows some uses that are usually allowed in industrial zones and not residential zones:

- Art or craft studio space, commercial kitchens and catering uses, and small theater or rehearsal spaces are all allowed by right. Restaurants are allowed as a conditional use.
- Building and landscaping contractors, cleaning and laundry plants, cold storage lockers, computer design and development facilities, equipment repair and rental with outdoor storage, printing and binding, telecommunications, warehouse or distributions facilities, wholesale business, and manufacturing uses.

Prohibits some uses that are usually allowed in industrial zones

- Medical and dental laboratories, administrative offices, lumber yards, auto sales, outdoor storage, recycling processing facilities, and self-storage are all prohibited. Animal hospitals and veterinary clinics, gasoline and service stations, and parking lots and garages (as a primary use) require a higher level of administrative review than in other industrial or manufacturing zones.
- All outdoor storage is prohibited.

Restricts uses that are customarily allowed in commercial zones

- The code allows offices that provide professional services in a technical field where a majority of client contact occurs at the client's place of business or residence, including engineering, graphic design, industrial design, and surveying offices. However, professional, medical, and dental offices are not permitted. Business support services smaller than 10,000 square feet are allowed outright, but larger support services require a use review.
- High traffic retail is generally prohibited. Convenience retail is allowed conditionally. Building material sales less than 15,000 square feet are allowed as of right.
- Adult educational facilities less than 20,000 square feet are allowed as of right; larger facilities require a use review.
- Auto-oriented uses are largely discouraged; parking lots as a principal use and gas stations require a use review.
- Mortuaries, non-profit clubs, and churches are not allowed. These uses are often believed to suppress private investment.²⁹⁸

Attempts to limit all off-site impacts

- The code specifically prohibits "manufacturing uses with potential off-site impacts," which it defines as:

"All research and development facilities, testing laboratories, and facilities for the manufacturing, fabrication, processing, or assembly of products which may produce effects on

²⁹⁸ Maiko Winkler-Smith (Executive Director, Seattle Chinatown International District Preservation and Development Authority), interview, April 16, 2010.

the environment that are measurable at or beyond the property line,...but not including computer design and development facilities nor telecommunications and electronic communications uses.”²⁹⁹

This institutes an extremely high standard, as no allowance is made for even small levels of noise during working hours. Interestingly, while these uses are not allowed on the Steel Yard parcels, they *are* allowed on the parcels across the railroad tracks from the development (after a use review).

A table of uses allowed in or near the Steel Yards project is provided in Appendix VII.

Form Considerations

Boulder created new form guidelines for the IMS zone. Developments in the IMS zone must have no more than 10’ of landscaped space between buildings and the street.³⁰⁰ In contrast, buildings in residential and industrial zones must be set back *at least* 20-25’ from the street, and have no maximum distance. Likewise, the IMS zone has no minimum side yard setback, while industrial zones have 12-15’ side yard setback requirements. The IMS zone does require the back of buildings to be at least 10’ away from a street, but industrial zones require twice that distance.

Rather than use floor area ratios to govern building bulk, the code sets a flat 15,000 square foot limit on the maximum floor of any principal building. Height limits are capped at 35’ and no more than two stories, only slightly lower than the 40’ allowed in the industrial zones. Unlike industrial zones however, the code requires that the primary entrance face the street and that at least 50% of the street frontage contain a building.

Key Lessons

- **Importance of City cooperation:** The City’s involvement was crucial in several ways.
 - The City’s Planning Department worked with the developer to rewrite the zoning code.
 - The City had recently supported a neighborhood-wide physical revitalization effort.
 - The project was planned with the greater context of an area-wide plan. This provided developers with some level of predictability.
- **Challenge of preventing impacts to neighboring properties:** The zoning code is written broadly to rule out any impact on existing parcels. As discussed under performance zoning, this can limit industrial development.
- **Challenge of low industrial rents:** The long-term financial feasibility of industrial mixed use is questionable. Boulder’s residual land value analysis suggested that the Industrial Mixed-use zoning may not lead to any industrial development because industrial rents were so much lower than office or retail.

²⁹⁹ Boulder Revised Code, 9-16-1 General Definitions, n.d.

³⁰⁰ Boulder Revised Code, 9-7-1 Schedule of Form and Bulk Standards, n.d.

- **Importance of site design:** Site design was carefully considered. The site was designed to buffer residential with the retail and industrial development. Additionally, the site was set up to maximize access to the central park and facilitate walking.
- **Difficulty in targeting job growth to the poor:** Industrial space is not necessarily used for entry-level jobs. Use of the space for online, marketing, and other professional jobs most likely serve less of a benefit to poorer residents.

Case Study: Jamaica Plains Brewery

Overview

The Jamaica Plains Brewery Project is a redeveloped industrial brewery in a residential neighborhood in Jamaica Plains, Massachusetts (see Figure 83 and Figure 84). The complex, which is located in a residential neighborhood, is home to a mix of light industrial businesses, retail and food services, and non-profits. This case study highlights elements that allow the development to function in a residential environment, including involvement of a non-profit property manager, noise dampening design, small business size, and mixed uses. Factors that limit the case study's applicability to Rainier Beach include the project's bulk, the attractive historic construction, and the proximity to downtown Boston.



Figure 83: Jamaica Plains Brewery exterior.³⁰¹ The turn-of-the-century brickwork gives the building an aesthetic appeal and sturdy function

Project History

The Brewery was originally built in 1870, although expansions and accessory buildings were constructed as recently as 1950.³⁰² After standing vacant for 20 years, it was purchased by the Jamaica Plains Neighborhood Development Corporation (JPND) in 1983.³⁰³ By the mid-1990s the JPND had restored two-thirds of it to service. Restoration of the remaining space, primarily the upper floors, was only recently completed, due to the architectural challenges of adapting three-foot-thick brick walls to ADA standards.³⁰⁴

³⁰¹ Marc Hurwitz, "Photos of the New Bella Luna/Milky Way Lounge Space in Jamaica Plain," *Boston Restaurant Talk*, April 30, 2009, <http://bostonrestaurants.blogspot.com/2009/04/photos-of-new-bella-lunamilky-way.html>.

³⁰² Andy Waxman (Associate Director of Real Estate, Jamaica Plains Development Corporation), interview, April 21, 2010.

³⁰³ "Brewery Small Business Complex: Introduction to the Brewery," *Jamaica Plain Neighborhood Development Corporation*, n.d., http://www.jpndc.org/help_business/brewery_history.html#timeline.

³⁰⁴ Andy Waxman (Associate Director of Real Estate, Jamaica Plains Development Corporation), interview.



Figure 84: The Brewery exterior³⁰⁵

Project Description

In total, there are now 16 buildings on the 4.9 acre site, creating 133,000 square feet of rentable space.³⁰⁶ The primary tenant is the Boston Beer Company, which distributes nationally under the Sam Adams label (see Figure 85 and Figure 86). The Boston Beer company occupies about 20,000 square feet, which they use for experimental brewing (R&D), small higher-end runs, and for tours.³⁰⁷



Figure 85: Tour at the Sam Adams Brewery³⁰⁸



(c) www.cluelessinboston.com

Sam Adams Brewery, Boston

Figure 86: Sam Adams Brewery³⁰⁹

³⁰⁵ WCI Realty, "284 Amory Street, Jamaica Plain," *WCI Realty: Commercial Property Management*, n.d., <http://www.wci-realty.com/284-amory-st.html>.

³⁰⁶ Andy Waxman (Associate Director of Real Estate, Jamaica Plains Development Corporation), interview; Jamaica Plain Neighborhood Development Corporation, "Commercial Space Available in The Brewery!," n.d., http://www.jpndc.org/docs/wow_leasing_flyer_9-25-09.pdf.

³⁰⁷ Andy Waxman (Associate Director of Real Estate, Jamaica Plains Development Corporation), interview.

³⁰⁸ Laura Krier, "Saturday Morning at the Brewery," *The Kitchen Illiterate*, January 8, 2007, <http://kitchenilliterate.wordpress.com/2007/01/08/saturday-morning-at-the-brewery/>.

Other tenants include:

- A culinary incubator, which offers sales and marketing assistance, business development, culinary and food safety classes, and food production kitchen equipment.
- Small food preparation businesses, who specialize in chocolate; pretzels for stadiums and other large institutions; tofu, tempeh, and dried fruits; and a caterer/private label manufacturer of hummus, tabouli, falafel, and grape leaves for Trader Joe's
- Woodworkers offering furniture, custom cabinetry and millwork, and renovation
- A locksmith
- A bicycle repair and resale youth program
- A landscaper
- Arts-oriented businesses including silkscreen printers, dance instructors, and children's arts classes
- Environmentally-conscious home-cleaning services
- Public health consultants
- An architectural firm
- A gymnasium
- The Jamaica Plains Neighborhood Development Corporation offices
- A number of non-profit organizations offering services and advocacy on behalf of the poor; women; ethnic and religious minorities; new parents; the elderly; people with developmental disabilities, mental illness or addictions; teenagers; gays and lesbians; and progressive political causes
- Eating establishments including a café, a bar and a restaurant³¹⁰

Most of the 10-15 light industrial tenants use less than 3,000 square feet of space, with the exception of Sam Adams' 20,000 square feet and one woodworker's 10,000 square feet.

The JPNDC markets the brewery's "unique, creative business/artist space with high ceilings, exposed brick and steel columns, unobstructed floor plans, and easy access to downtown Boston and the region via the orange line."³¹¹

Rents range from \$10-\$21 per square foot. Several spaces share bathrooms.

³⁰⁹ "Samuel Adams Brewery," *Clueless in Boston*, April 17, 2009,

http://www.cluelessinboston.com/2009/04/samuel-adams-brewery_17.html.

³¹⁰ "Brewery Small Business Complex," *Jamaica Plain Neighborhood Development Corporation*, n.d.,

http://www.jpndc.org/help_business/brewery.html.

³¹¹ "Sam Adams Brewery: Jamaica Plain," *ArtistLink: Connecting Artists and Spaces*, May 8, 2006,

<http://www.artistlink.org/?q=aboutus/featuredprojects/samadamsbreweryjamaicaplain>.

Benefit to Employees and Residents

Residential employment

The brewery currently employs approximately 300 permanent employees and 100 part-time employees. Early results of a recent survey suggest that 25% of the employees live within the Jamaica Plains neighborhood, while an additional 40% live within greater Boston.

Wages

The JPNDC has not collected data on brewery wage levels in the past; the organization is now starting to think strategically about the issue.

Neighborhood Description

While Jamaica Plains is considerably larger than Rainier Beach, it is similar to Rainier Beach in many ways (see Table 38). It has a high percentage of ethnic minorities (unlike in Rainier Beach, Latinos are the largest group, followed by African Americans, then Asians), a high percentage of foreign-born residents, and low income levels. It is home to both the largest Latino business district and the third most expensive housing market in Boston. It has transitioned from a neighborhood where it was once difficult to get approved for a mortgage to one where the median home price climbed to \$498,000 in 2008.

Table 38: Jamaica Plains 2000 census data. Note the similarity to Rainier Beach’s racial diversity and income level

Population	36,302
Race	<ul style="list-style-type: none"> • 49% White, • 29% Latino • 15% African-American • 4% Asian • 3% Other/Multiracial
Foreign-born	22%
Households with income under \$35,000	37%
Households under poverty line	17%
<i>Source: “Quick Overview of Jamaica Plain”</i>	

The immediate area around the brewery is residential in nature, with one-way streets (see Figure 87). It is well-served by transit; the brewery is one and a half blocks away from a subway station.

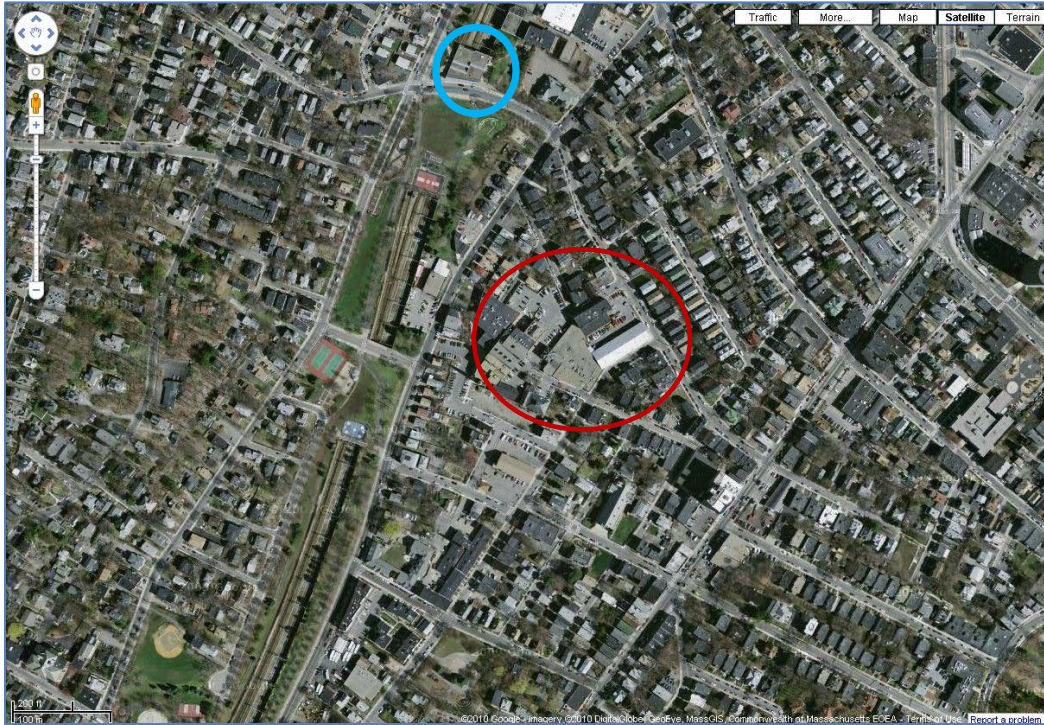


Figure 87: Satellite view of Jamaica Plains Brewery and neighborhood.³¹² Note Brewery in red, subway stop in blue.

Business Needs and Compatibility

An interview with the Brewery's Associate Director of Real Estate revealed the following needs of the building's tenants.

Ground Floor Space

The JPNDC initially had trouble finding tenants for its upper stories. Despite offering to install freight elevators, neither the Boston Beer Company nor the other light-industrial tenants were interested in anything but ground-floor space. The JPNDC then altered its leasing strategy and leased the floor to a gym, a café, and a restaurant.

Freight Loading

The tenants require access to a ground floor loading dock or an overhead door that opens directly into their space. Easy delivery is important to most of the businesses; the Brewery's location near their clients is important.

³¹² "284 Amory Street, Jamaica Plain, MA 02130," *Google Maps*, n.d., <http://maps.google.com/maps?hl=en&client=firefox-a&q=284+Amory+Street,+Jamaica+Plain&ie=UTF8&hq=&hnear=284+Amory+St,+Boston,+Suffolk,+Massachusetts+02130&gl=us&ei=8WzSS7GyNov6sgPu9PGOCg&ved=0CAgQ8gEwAA&ll=42.314481,-71.103419&spn=0.00664,0.013078&t=k&z=17&iwloc=A>.

Synergy

While not an explicit motivator of the businesses, they do benefit from their proximity. The smaller businesses can borrow the Boston Beer Company's forklift when they need it, the food preparers are beginning to sell to the restaurant, and they may be beginning to cross-market each other's goods.

Business Assistance

Survey data shows that 40% of the small business owners have used the JPNDC's small business assistance programs to obtain financing, create business plans, and so on. While the JPNDC also offers a program aimed at creating livable wage jobs, it has not been aggressively marketed to the brewery tenants.

Rental assistance

While the tenants do not receive a direct subsidy, the Brewery offers rents that are slightly below market. However, the JPNDC's real estate manager noted that leasing to industrial tenants is a form of subsidy in itself. Under the existing zoning, the Brewery could use their space to create offices, and get twice as much in rent. The industrial tenants also enjoy facility amenities paid for partly from the higher retail and office tenants' rents, as well as New Market Tax Credits and City of Boston loans. Lastly, the JPNDC specifically seeks out tenants who small, locally owned, minority and women owned businesses. For example, rather than go with a gym chain, they went with a local immigrant. These tenants may not have been able to find space elsewhere.

Electricity and HVAC

Tenants have a greater demand for adequate and dependable electricity than residential or retail tenants. The brewery also offers an HVAC system.

Neighborhood Compatibility

There have not been many complaints from neighbors. The brewery real estate manager attributes this to the JPNDC's active efforts to interact with the neighborhood, the lack of noticeable odors and noise, and the brewery's long tenure in the neighborhood.

Noise

As noted above, many of the brewery's walls are three-foot thick brick. While this added to the cost of the restoration, it also likely contributes to the lack of conflict with the neighborhood by muffling sounds. Additionally, the woodworking creates relatively low noise.

The JPNDC was concerned about the potential nighttime noise impacts of accepting the bar tenant, since it closes at 1:00 a.m. However, they accepted the tenant because it was a relocating existing business with an established positive reputation; it has not proved to be a conflict with the neighborhood. The JPNDC has more challenges with neighborhood acceptance regarding its unrelated affordable housing programs.

Delivery noise impacts have been mixed. Engine noise from deliveries is minimized because most of the tenants use small vans for delivery due to the small size of the business and the proximity of their clients.³¹³ However, because the vans are commercial vehicles, they make an auditory “beeping” warning when they reverse. This normally causes little disruption, as most tenants operate during normal business hours and use the brewery’s interior courtyard to turn around (see Figure 88). However, because 30 small businesses share the use of the culinary incubator, it operates 24-hours a day; this has caused an increasing amount of beeping-noises at night. This has led to complaints, but they are not widespread. Only the brewery receives deliveries via semi-trailer.

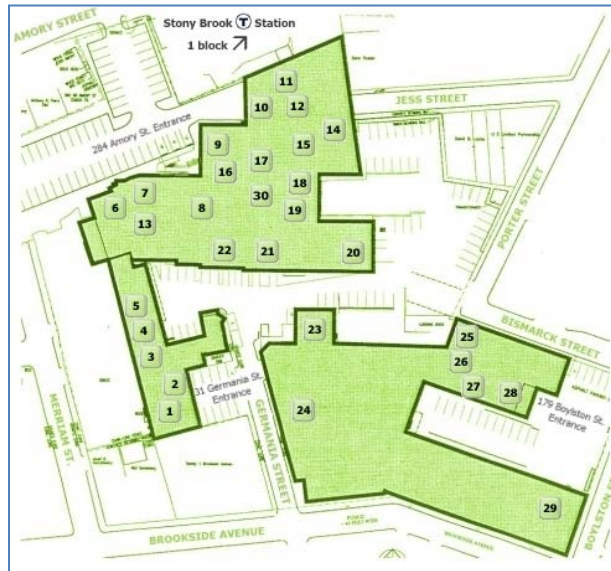


Figure 88: Brewery plan. Note interior courtyard for freight turn-around³¹⁴

Trash pick-up proved to be a more difficult impact to mitigate. It took some time for the JPNDC to find a company that would pick up after 7:00 a.m. to minimize the garbage truck’s reversal warning noise.

Odors

There have been no complaints regarding odors, although the installation of high-venting for food preparation was complicated by code issues.

Other impacts

There have been minor conflicts between uses within the complex itself; the impact of dropped weights in the gym can be felt by tenants of the floors below, and the odors from the beer and food production can sometimes be detected in the other businesses. Additionally, as the brewery has become home to more retail and dining related businesses, on-site parking has become more difficult to manage. The JPNDC did have to take special consideration to resolve drainage issues for the light industrial tenants.

³¹³ The tofu manufacturer’s impact is even smaller, as he delivers via bicycle.

³¹⁴ “Brewery Small Business Complex.”

Key Lessons

- **Benefit to careful site layout:** The site functions well in the residential neighborhood in part because of its interior courtyard, which minimizes freight loading and engine noise.
- **Decreased freight need of small businesses:** In general, the small size of the businesses and their local delivery needs obviate the need for large trucks, further enhancing neighborhood compatibility.
- **Importance of proximity:** The businesses choose to locate at the brewery in part because they can quickly deliver their goods to their clients.
- **Importance of the non-profit organization:** The JPNDC plays a critical role in creating and maintaining the space, obtaining public funding, and making industrial space available below market rates. Some businesses benefit directly from technical assistance as well.
- **Advantage of old housing stock:** The Brewery is attractive to tenants whose clients visit them at the location, because of the physical attractiveness of the old brick construction. This gives the businesses an advantage that other industrial locations lack.
- **Importance of anchor tenant:** The functioning brewery serves as a catalyst for many of the other businesses. It provides a major tenant for the property manager, offers access to equipment that would otherwise be very expensive, and brings 70,000 visitors to the site each year, which provides potential customers for the complexes' retailers and service providers.³¹⁵
- **Benefit of non-industrial tenants:** Having office and retail tenants in the project helps subsidize the industrial rents. While this mix of uses might cause conflicts in other locations, the fact that the other tenants are mission-driven non-profits likely increases their tolerance for disruption.

³¹⁵ Jamaica Plain Neighborhood Development Corporation, "Commercial Space Available."

Case Study: Mandela Grand

Overview

The Mandela Grand is a proposed development for the City of Oakland, California. It was to be configured as a series of residential towers placed on top of light industrial “pedestals” (see Figure 89). While ultimately unsuccessful, the project does provide useful examples of potential neighborhood concerns and steps that could be taken to ensure neighborhood compatibility.

The use of the proposed Mandela Grand development as a case study has several limitations: regardless of zoning, a project of similar scale would likely be impossible in most of Rainier Beach due to limited land availability, soft soils, and neighborhood concerns over height; the existing neighborhood was industrial rather than residential; and the project’s cancellation means that it is not possible to evaluate the effectiveness of the mitigation measures or the feasibility of the project. However, it is relevant to Rainier Beach because it demonstrates potential community responses to land use mixing, identifies potentially compatible land uses, and suggests methods of mitigating conflicts.



Figure 89: Elevation of proposed development³¹⁶

Project History

In 2007, the City of Oakland attempted to mix industrial and residential uses on a grand scale. Local developer Peter Sullivan proposed a 13.3 acre development in an industrial zone in West Oakland. The project generated controversy, with neighborhood members divided on whether the project would

³¹⁶ ESA, *Mandela Grand Mixed Use Development Project: Draft Environmental Impact Report* (Oakland, CA: City of Oakland Community and Economic Development Agency, December 2006), cover, <http://www.oaklandnet.com/government/ceda/revised/planningzoning/majorprojectssection/MandelaGrandDEIR.pdf>.

provide much needed economic development or destroy one of the last remaining industrial areas in Oakland.

While the project has not been officially shelved, the developer’s rezone request has been denied. The project proposal coincided with two shifts in the development environment. First, the City of Oakland placed a moratorium on all industrial rezones as it began a citywide reexamination of industrial space policies. While Oakland will continue to pursue mixed use strategies, the proposed Mandela Grand site will likely remain solely industrial.³¹⁷ Second, the housing market crashed, lowering achievable rents and making access to capital extremely limited.

Project Description

The stated goals of the project were to:

- provide opportunities for new employment
- foster infill residential development
- adaptively reuse the Pacific Pipe building
- implement feasible and sustainable development standards³¹⁸

In interviews, the developer also cited a desire to preserve industrial jobs and land.³¹⁹ He projected a growth of 600 long-term jobs – more than the site had previously employed during its 1950’s peak.³²⁰ He also hoped to leverage the site’s location near two interstate highways and a light rail station (see Figure 90).³²¹

³¹⁷ Patrick Lane (Redevelopment Area Manager, City of Oakland Community and Economic Development Agency), interview, April 13, 2010.

³¹⁸ ESA, *Mandela Grand Draft EIR*, III-8.

³¹⁹ Christopher Heredia, “Zoning Fight Pits Housing Against Industry: Panel to Take Up Plan to Put Condos on Site Set Aside for Business,” *San Francisco Chronicle*, March 21, 2007, sec. Oakland.

³²⁰ Ibid.

³²¹ Ibid.



Figure 90: Proximity to transportation. Note the availability of buses and light rail (BART) lines, and walking distance to schools and parks

Source: ESA, Mandela Grand Draft EIR, IV A-4

Development Design

The first two floors of the development were to consist of over 300,000 square feet of commercial uses, 80% of which were to be dedicated to custom manufacturing and light industrial use, with the remaining 20% to retail and other commercial uses.³²² Market-rate residential condominiums would be located above the industrial space. The scale of the development was much larger than that found in most of Oakland; there would be 1,577 residential units, located throughout eight buildings, including three 27-story, 300-foot tall towers.³²³ While eight buildings would be new, the centerpiece of the plan was the

³²² ESA, *Mandela Grand Mixed Use Development Project: Final Environmental Impact Report / Responses to Comments* (Oakland, CA: City of Oakland Community and Economic Development Agency, June 2007), II-1, <http://www.oaklandnet.com/government/ceda/revised/planningzoning/MajorProjectsSection/MandelaGrandMixedUseFEIR.pdf>.

³²³ *Ibid.*

renovation of a 1920s 47,000 square-foot timber-frame industrial building (see Figure 91).³²⁴ Building sizes are listed in the Figure 92 and Table 39 below.



Figure 91: Existing Pacific Pipe Company building³²⁵

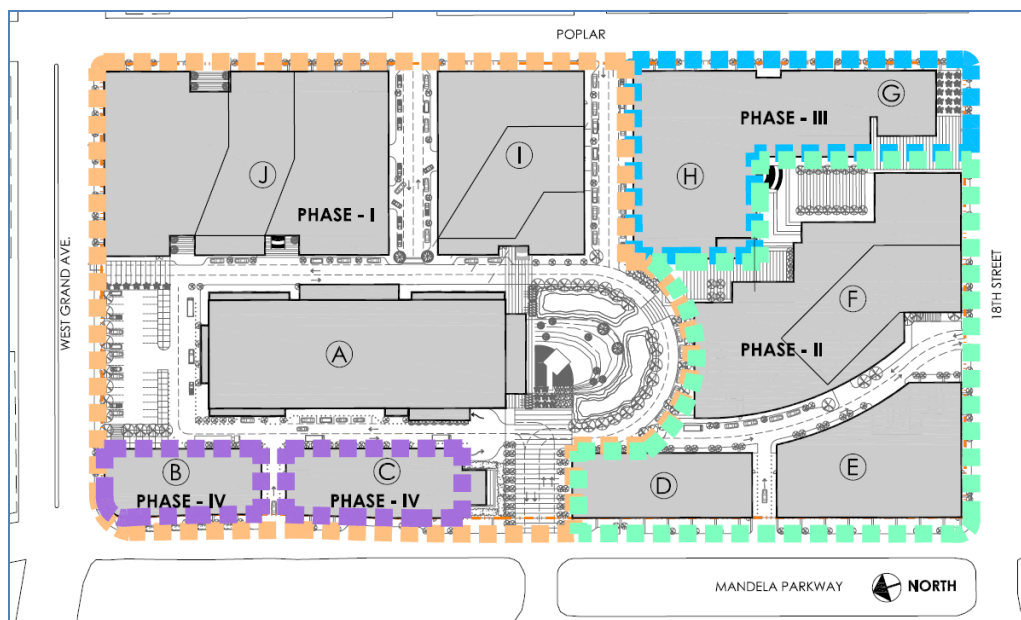


Figure 92: Proposed Mandela Grand layout³²⁶

Table 39: Square footage per workspace

Parcel	A	B	C	D	E	F	G	H	I	J	Total
Ground Level Non-Residential	55,000	13,700	16,500	15,750	24,650	28,530	6,000	29,100	13,370	40,900	243,500
Second Level Non-Residential Area	0	5,202	5,500	5,000	8,000	2,500	0	0	0	0	26,202
Residential Serving Commercial Space	0	0	0	0	0	11,000	0	0	10,000	10,000	31,000
Total	55,000	18,902	22,000	20,750	32,650	42,030	6,000	29,100	23,370	50,900	300,702

Source: Reprinted from Mandela Grand Draft EIR, p. III-35

³²⁴ Ibid., III-5.

³²⁵ Ibid.

³²⁶ ESA, *Mandela Grand Draft EIR*, III-34.

Loading for industrial uses would be located underground and within buildings. Open space would be provided both on the ground level (2.5 acres) and on top of the industrial podium (1.3 acres).³²⁷

The project would have required significant changes in the planning process because of its inclusion of residential units. In addition to modifications to the future land use map, the comprehensive plan text, and the area’s redevelopment plan, the developers also proposed the creation of a new land use type and zoning designation (“Business Mix-Urban Residential” and “Mandela Grand Zoning District”).³²⁸

Proposed Uses

The developer believed that tenants under these restrictions would be custom construction material fabricators (e.g. window-makers), food preparers, custom manufacturers, furniture-makers, research and development forms, small tool manufacturers, artisan workshops, and studios for architecture, design, and engineering firms.³²⁹ Table 40 provides the full list of uses proposed by the developer.

Table 40: Proposed uses for Mandela Grand project³³⁰

Food Preparation or Processing
<p>Custom Manufacturing</p> <p>Manufacturing, compounding (mixing ingredients), processing, assembling, packaging, treatment, or fabrication of the following products:</p> <ul style="list-style-type: none"> • Business machines, computers, audio-visual products and related technological equipment • Cameras and photographic equipment • Custom clothing and hair products • Handicraft, art objects, jewelry, iron or metal works • Medical, dental, optical, and orthopedic instruments and appliances • Model making • Musical instruments • Professional, scientific, measuring, and control instruments • Sewing garments • Sculpture/statuary
Printing, publishing, pattern-making, and sign-making
<p>Light Industrial</p> <p>Manufacturing, compounding, processing, assembling, packaging, treatment, or fabrication of articles of merchandise from the following materials:</p>

³²⁷ Ibid., III-28.

³²⁸ ESA, *Mandela Grand Final EIR*, APP-C.

³²⁹ ESA, *Mandela Grand Draft EIR*, III-13.

³³⁰ ESA, *Mandela Grand Final EIR*, APP C 4-18.

- | | |
|---|--|
| <ul style="list-style-type: none"> • Cellophane • Clay • Cork • Fabrics and fibers • Feathers • Fur • Glass • Graphite • Hair • Leather | <ul style="list-style-type: none"> • Metal • Paper • Plastics • Rubber • Stone • Straw • Textiles • Tile • Wood (including, cabinet making & custom furniture), excluding milling |
|---|--|

Photographic developing

Manufacturing, compounding, processing, assembling, packaging, treatment, or fabrication of the following products

- Alcoholic beverages (limited to 50,000 square feet)
- Ceramics, other than handicraft
- Clothing and other textile products, other than custom clothing
- Cosmetics
- Electrical and electronic equipment and appliances
- Furniture and fixtures
- Food, except for yeast
- Ice
- Non-alcoholic beverages
- Pens, pencils, and other artists' materials
- Pharmaceuticals
- Machinery, metal tools and products
- Sporting and athletic goods
- Toiletries

Note – Manufacturing, compounding, processing, assembling, packaging, treatment, or fabrication of aircraft or watercraft, alcoholic beverages (greater than 50,000 square feet), and porcelain require conditional use permits.

Activities listed in Table 41 were specifically forbidden.

Table 41: Prohibited activities in proposed Mandela Grand Project³³¹

General Manufacturing Activities

Manufacturing, compounding, processing, assembling, packaging, treatment or fabrication of articles of merchandise *made from* the following materials:

- Chemicals
- Cotton ginning

³³¹ Ibid., APP-C 1-4.

<ul style="list-style-type: none"> • Shipbuilding (excluding watercraft production) • Sugar refining • Wood planning mill • Saw mill • Wool pulling or scouring <p>Manufacturing, compounding, processing, assembling, packaging, treatment or fabrication of the following products:</p> <table border="0"> <tr> <td> <ul style="list-style-type: none"> • Asphalt • Concrete • Charcoal, lampblack, and fuel briquettes • Disinfectants • Dyestuff • Emery cloth and sandpaper • Excelsior and packing materials • Yeast • Insect poison </td> <td> <ul style="list-style-type: none"> • Matches • Oil cloth and linoleum • Paint • Shoe polish and stove polish • Acid • Cement, lime, gypsum, and plaster of paris • Explosives • Fertilizer • Gas • Glue </td> </tr> </table>	<ul style="list-style-type: none"> • Asphalt • Concrete • Charcoal, lampblack, and fuel briquettes • Disinfectants • Dyestuff • Emery cloth and sandpaper • Excelsior and packing materials • Yeast • Insect poison 	<ul style="list-style-type: none"> • Matches • Oil cloth and linoleum • Paint • Shoe polish and stove polish • Acid • Cement, lime, gypsum, and plaster of paris • Explosives • Fertilizer • Gas • Glue
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<p>Heavy Manufacturing Activities</p> <p>Manufacturing, compounding, processing, assembling, packaging, treatment, or fabrication of articles of merchandise from the following raw materials:</p> <ul style="list-style-type: none"> • Bones, garbage, offal, and dead animals • Fat rendering • Petroleum refining • Radioactive material handling • Stocking or slaughtering of animals • Storage and distribution of natural and liquid gas and other petroleum derivatives in bulk • Tanning 		
<p>Scrap Operation Activities</p> <p>Storage, sale, dismantling or other processing on the premises of used or waste materials, and the dismantling of motor vehicles to obtain parts, except as part of a manufacturing operation.</p>		
<p>Small Scale Transfer and Storage Hazardous Waste Management Activities</p> <p>Treatment facilities with waste streams small enough to be exempt from state-level requirements</p>		
<p>Undertaking and funeral services</p>		

Neighborhood Description

The proposed site was located in West Oakland, home to residential, industrial, and commercial land uses located in relatively close proximity. The building stock was largely built before 1945. While the neighborhood is one of the few remaining industrial areas in Oakland, it has fallen into obsolescence

since WWII as businesses and employees moved to the suburbs in search of newer locations.³³² The area is entirely within the West Oakland Redevelopment Plan Area, which was declared blighted and eligible for tax increment financing.³³³ Economic activity centers on heavy industrial uses, although there is an increasing component of “artisans, crafts people, designers, musicians, and others with studios, live-work lofts, and other building spaces.”³³⁴ Existing residents tended to be younger, poorer, and more likely to be renters than the average Oakland resident.³³⁵

While Oakland economic growth had once suffered from the flight of capital to the suburbs, by the late 1990s it was seeing resurgence in its business activity and employment opportunities. It had several economic assets, including a central location in the region, good transportation and transit accessibility, relatively affordable rents, a diversified and therefore resilient economy, and increasing population growth.³³⁶ The impact of the project on housing prices was particularly scrutinized due to high regional housing costs. Home prices in Alameda County had nearly tripled from 1995 to 2005.³³⁷ Median home prices in Oakland were somewhat lower than the county in general at \$505,000 vs. \$590,073 in early 2006.³³⁸ Apartment costs were also high; average apartment rent was \$1,206 per month in 2006.³³⁹ While the project proposal does not indicate the jobs-housing balance in the immediate neighborhood, about 40% of Oakland residents had jobs in the city, and another 15% had jobs in the nearby Inner East Bay cities.³⁴⁰

Business Needs and Compatibility

The project was controversial for a number of reasons, including concerns over scale, affordability, feasibility, and use compatibility.

Scale

The size of the project was considerably larger than existing buildings in the area. The 30-story towers would have dominated the skyline in an area that was primarily low industrial buildings. Only eleven buildings in Oakland were taller than the proposed towers, and these were clustered in other areas of the city.³⁴¹ Additionally, the 1,577 living units would have brought a significant population increase to the neighborhood.

³³² ESA, *Mandela Grand Draft EIR*, IV. J-2.

³³³ *Ibid.*, IV. J-4.

³³⁴ *Ibid.*

³³⁵ *Ibid.*, IV. J-5.

³³⁶ *Ibid.*, IV. J-10.

³³⁷ *Ibid.*, IV. J-13.

³³⁸ *Ibid.*, IV. J-12.

³³⁹ *Ibid.*, IV. J-13.

³⁴⁰ *Ibid.*

³⁴¹ “Tallest Skyscrapers,” *Emporis.com*, n.d., <http://www.emporis.com/en/wm/ci/bu/sk/li/?id=102062&bt=2&ht=2&sro=1>.

Affordability/Gentrification

The project was designed to meet a variety of household sizes (30% of the units were 900-square foot one-bedrooms, 60% were 1,250-square foot two-bedrooms, and 10% were 1,500 square foot three-bedrooms). However, it was not designed to meet the housing needs of all economic groups; all of the units were intended to be sold as market-rate owner-occupied condos.³⁴²

The absence of affordable housing was opposed by the Mayor’s Housing Task Force, affordable housing advocacy organizations, and the district’s representative on the City Council, Nancy Nadel. Councilmember Nadel argued that the project would harmfully gentrify the neighborhood because existing residents wouldn’t be able to afford to rent or buy the live/work or industrial spaces.³⁴³ She also argued that the project represented a loss of industrial land because a portion of the project would be reclassified from general industrial to light industrial. In its EIR, the City was unable to quantify the extent to which the project’s market rate housing would increase surrounding property values.

The developer offered several arguments in response:

- Market rate housing was necessary to subsidize industrial development.
- Unit size variation served a variety of income levels.
- Market rate housing would better support retail in an underserved area.
- Market rate housing would attract private investment to the area.
- Higher rents would generate greater tax increment funds for use in affordable housing projects.
- The sum of other benefits, such as preservation and revitalization of light industrial jobs, the support of job training programs, and improvements in pedestrian safety would outweigh the absence of affordable housing.

Feasibility

Councilmember Nadel argued that the banks would be unwilling to lend money for the uncommon design of placing expensive condos over industrial businesses. She also doubted that people would be interested in buying expensive homes near industrial businesses and industrial traffic.³⁴⁴

³⁴² Oakland City Planning Commission, *Staff Report: Mandela Grand Mixed Use Development Project*, January 17, 2007, 4, <http://www.oaklandnet.com/government/ceda/revised/planningzoning/MajorProjectsSection/PCStaffReportFINA.L.pdf>.

³⁴³ J. Douglas Allen-Taylor, “Oakland Zoning Proposal Reversal Reflects Long-Term Community Lobbying,” *The Berkeley Daily Planet*, March 27, 2007.

³⁴⁴ Heredia, “Zoning fight pits housing against industry.”

Use Compatibility

The primary argument against the project was that residential uses were incompatible with both the proposed uses in the building and the existing industrial uses. For example, during public testimony on the EIR, one neighboring businesswoman cited her company's use of heavy trucks, scrap metal processing, and 24-hour operations would be incompatible with dense residential development.³⁴⁵ Councilmember Nadel asserted that nuisance disclosures would not protect nearby general industrial businesses from residential complaints. She also believed that the combination of increased car traffic, pedestrian traffic, and existing truck traffic would be untenable.³⁴⁶ However, the City's Final EIR found that "the project...would not result in a fundamental conflict between adjacent and nearby land uses".³⁴⁷

Despite these objections, the project was supported by others in the community, including the East Bay Small Business Council.³⁴⁸ Supporters asserted that small-scale production space was in demand, given the creativity of the Bay Area's start-up businesses. Public testimony included a suggestion that the words "light industrial" were pejorative, and that the phrase "production space for jobs" be used instead.³⁴⁹

Mitigation: Operating Standards and Design

The project developers took the unusual step of proposing operating standards to be imposed on the industrial uses to ensure compatibility with the residential units. These included sound, vibration, and air quality, and fire standards, as well as a description of tenant screening procedures.³⁵⁰ The operating standards also detailed what enforcement responsibilities would lie with the Management Association, the City of Oakland, and in some cases, the State of California.

Sound standards

- Outdoor sound levels were to have been measured 10 feet from the edge of the building, and were not to exceed 70 dBC³⁵¹ during the day (7:00 a.m. to 10:00 p.m.) and 60 dBC at night (10:00 p.m. and 7:00 a.m).³⁵²

³⁴⁵ ESA, *Mandela Grand Final EIR*, V-33.

³⁴⁶ *Ibid.*, VII-63.

³⁴⁷ *Ibid.*, III-57.

³⁴⁸ *Ibid.*, V-11.

³⁴⁹ *Ibid.*, V-22.

³⁵⁰ *Ibid.*, App B-17.

³⁵¹ dBC = "decibels relative to the carrier"

³⁵² Noise would be limited to the level of the ambient noise if the ambient noise level was greater than the 60 and 70 dBC limits.

- Operation of the “any mechanically powered saw, sander, drill, grinder, lawn or garden tool, or similar tool” was forbidden between 9:00 p.m. and 6:00 a.m.
- Testing of emergency systems was to take place between only during day time hours (7 a.m. and 7 p.m.), last less than 60 seconds, and never occur more frequently than once a month.

Vibration standards

- Tenants were forbidden from doing anything that resulted in any vibration that could be felt by the nearest resident or created a public nuisance for adjacent commercial tenants. Tenants would have been required to hire acoustical engineers to review planned mechanical and plumbing systems (including fans, air turbulence, ducts, duct breakout, control boxes and terminal devices) to ensure compliance with this restriction.
- In addition to having the primary monitoring responsibility, the Management Association would also have been required to submit annual reports to the city documenting monitoring and enforcement activities, complaints received, and actions taken to resolve complaints.

Air quality

- Tenants would have been required to meet the requirements of the American Society of Heating, Refrigerating and Air Conditioning Engineering Inc. (ASHRAE) and the Occupational Safety and Health Administration (OSHA). This would have required separate air handling systems for industrial and commercial spaces, filters on emission systems, location of air intake systems at least 30 feet in the prevailing upwind direction from exhaust sources, and permanent “entryway systems” (mats, etc) to prevent particulates from leaving doorways.
- Odors would be handled under the complaint-driven Bay Area Quality Management District process, which requires that objectionable odors not be detectable beyond property lines. Additionally, tenants capable of generating point source emissions would be required to install hoods and other control devices capable of achieving 99% particulate control.
- The Management Association would have to implement an indoor air quality monitoring plan, and produce annual reports to the City documenting monitoring and enforcement activities, complaints received, and actions taken to resolve complaints.

Tenant screening

- Screening procedures were to be conducted primarily by owners, who would require potential tenants to submit plot plans, interior building layouts, estimated daily water usage, sewer discharge estimates, electrical service requirements, parking requirements, vehicular and pedestrian circulation relationship, security and lighting plans, and insurance information. Owners would review this material as well as proposed uses before requests for permits could be submitted to the City.
- The developer intended to limit future residential tenant complaints by requiring them to sign a “nuisance disclosure”, which would indicate acknowledgement of the possible nonresidential activities that could occur on the site and nearby, the permitting process and criteria governing

of those uses, and the design and operational standards that would be required of the nonresidential tenants.³⁵³

Transportation mediation

- The project also would have included transportation planning to slow on-site traffic, separation freight and pedestrian traffic, and a transportation management plan, with a possible shuttle to the nearby light rail station.³⁵⁴

Key Lessons

Key elements include the following:

- **Housing could subsidize industrial rents:** Residential development might spur the creation of industrial space by subsidizing the relatively lower rents attainable by industrial space.
- **Importance of transit:** Locations near light rail and highways are appealing to both industrial and residential developers.
- **Importance of design for compatibility:** Design considerations are extremely important to ensure that both freight and pedestrian needs are met, that air intake and emissions systems are coordinated, and that vibrations and noise are limited.
- **Importance of a single managing entity:** The creation of a management association could serve as a useful mediating entity to monitor and enforce land use compatibility.
- **Challenge of competing community values:** Although residents were interested in job creation, these concerns were outweighed by other aspects of the project.
- **Importance of labeling:** The phrase “light industrial” was viewed as an inappropriate label for the targeted jobs.
- **Advantages and disadvantages of operating standards:** The developer felt it necessary to propose binding operating standards in addition to standard zoning regulations, although it is unclear whether these standards were necessary to ensure compatibility or to improve public acceptance. The numerous operating standards proposed by the developer would have placed many restrictions on the industrial businesses. Requirements such as those requiring tenants to hire acoustical engineers would have added to the costs of start-up businesses.
- **Benefits of nuisance disclosures:** In a mixed use development, it might be possible to protect industrial tenants from residential complaints by requiring a residential “nuisance disclosure”. Of course, this would not prevent complaints from off-site neighbors.

³⁵³ ESA, *Mandela Grand Final EIR*, V-25.

³⁵⁴ *Ibid.*, III-28.

Discussion

Although it is important to understand the details of allowable setbacks, optimal building heights, and parking requirements, these discussions can mask the critical underlying social issues in Rainier Beach. This paper is written with the belief that the City has a responsibility to improve the lives of its poorest community members. The large percentage of ethnic minorities, immigrants and refugees, people of color, non-English speakers, and people without four-year degrees imply that equity considerations should be paramount in Rainier Beach development decisions.

Rainier Beach has traditionally served as an entry point for new arrivals to Seattle, providing them with an affordable place to live while they acculturate and develop their physical and social capital. Providing employment near housing could serve the double purpose of speeding capital accumulation by decreasing commute time and expense and slowing residential displacement by increasing residents' incomes.

Gentrification of the neighborhood is a delicate issue to manage. On the one hand, an influx of new residents with higher incomes will bring new money to support local businesses and new energy to devote to neighborhood improvements. On the other hand, without the provision of affordable housing and accessible employment, the increase in land prices can drive out long-term residents. In either case, to assume that City policy is helpless in the face of unstoppable gentrifying market forces is to ignore the role that policy has played in developing the current situation.

The examples of City policy impacts on the neighborhood are numerous. The light rail station might contribute to economic growth, but siting it on MLK has created ambiguity as to the location of the neighborhood's true center and reduced its ability to benefit the local business owners. The civic investments such as the schools and community center could have served as catalyst projects to spur private investment, but locating so many of these structures so close together precludes the activation of a large portion of the commercial center and the Henderson pedestrian zone. Building the community swimming pool provides an undeniable draw, but the pool's arterial-facing wall is windowless and covered with "high-crime area" signs, which enforce the perception of danger. The Neighborhood Planning Area boundaries themselves present challenges. While the borders are drawn in a manner that should place decision-making power among the residents of multi-family and commercial core business owners, the proximity of single family homes will mean that significant decisions – especially those near the boundaries like the light rail station – must pass political muster with the surrounding neighborhood. Further complicating matters, the Rainier Avenue corridor of the planning area is unique in that it is located *outside* of the urban village boundary and has no buffer between it and the surrounding single family neighborhood (see Figure 2 and Figure 51). This could cause additional conflict when trying to develop new businesses along the corridor.

Of course, there are a multitude of other factors that have made the neighborhood as it is today. However, these examples suggest that the City has had, and can continue to have, a significant role in outcomes in Rainier Beach. They also call attention to the importance of a robust neighborhood planning process and continued City involvement. The planning process should present the

neighborhood with real alternatives and make sure that the overall City goals are in line with community goals. This will benefit both the city and the neighborhood. In return for promoting accessible job opportunities with good wages and providing affordable housing and workforce training, the City receives the benefits of having a diverse community within its borders. The recommendations that follow this section will require City involvement beyond the neighborhood planning process. While low-impact production jobs could provide needed income, the City will need to play a role in recruiting small entrepreneurs, monitoring compatibility issues, and attracting developers who are willing to incorporate production business' needs in their developments. This may be challenging given the City's current budget shortages. However, it is particularly important given resident's concerns about City commitment; several interviewees suggested that the neighborhood feels the City unduly disrupted MLK businesses during light rail construction and operation, has not appropriately funded street improvement plans, and has failed to follow through with other aspects of community and business support. Regardless of the validity of these feelings, City commitment to neighborhood planning follow-through would help to rebuild trust.

Conclusion & Recommendations

This research has attempted to discern the potential for light industrial business growth in the Rainier Beach. This section reviews the equity, compatibility, and economic sustainability aspects of low-impact production businesses. It then provides recommendations for City actions, suggests different development nodes within Rainier Beach, identifies challenges to implementing the suggested strategies, and recommends areas for future research.

Equity Impacts: Benefits Accrue to the Neighborhood

Economic development strategies that promote the growth of low-impact production businesses in Rainier Beach could create jobs benefitting the poor and those without college degrees. Many of these jobs provide better wages than retail and other service jobs, and often provide living wages. The creation of any jobs in the area would decrease the travel time and related expenses incurred by residents of the area.

The neighborhood planning process itself provides an opportunity to improve equity by allowing community members to help shape their own physical and economic environment. Low-impact production jobs create a continuum of impacts; community members can decide which impacts they are willing to accept in their neighborhood.

Finally, low-impact production businesses are likely to be small, “home-grown” businesses, providing more self-reliance for the community.

Neighborhood Compatibility: Many Uses are Compatible

Many low-impact production jobs do not cause significant environmental issues, and could therefore be compatible in residential neighborhoods. Mitigation measures exist to address most on-site impacts. Other types of light industrial jobs that involve toxic chemicals or other heavy processing would be incompatible in the neighborhood. Increased truck traffic in the area would cause a decrease in air quality, but this would vary based on the type and quantity of the attracted businesses.

Providing jobs where people live would also help meet smart growth goals, by reducing commute distances. This would allow people to use transit, walking, and biking to reach their destinations rather than driving.

Economic Sustainability: Businesses to Leverage Neighborhood Assets

Targeting businesses that would benefit from a location in Rainier Beach is challenging. Rents in Rainier Beach are cheaper than those near downtown, but more expensive than those in the Duwamish MIC or cities south of Seattle. Businesses that rely on proximity to the downtown market would prefer to locate in the MIC, and businesses that rely on cheap rents would prefer to locate south of Seattle. Rainier Beach’s easy access to I-5 via the Boeing Access Road entrance is not well known. It has a generous supply of labor, but the labor pool is likely not skilled in the technology and industry-specific aspects

needed for modern production. It has a number of non-profit and public job training resources nearby. It could accommodate new light industrial buildings, but the existing supply is low and future development is likely to favor retail and residential growth. Firms that want equal access to both Seattle and SeaTac airport would find Rainier Beach a good place to locate.

Light industrial firms looking for new places to locate will likely explore other options first. Thus, Rainier Beach's primary investors are likely current or future entrepreneurs within the Rainier Valley. These start-ups will have many of the same challenges faced by other businesses in the Rainier Valley, namely lack of capital and technical knowledge.

Firms that could be compatible in Rainier Beach include small garment design firms, small catering firms, printers, photographers, furniture manufacturers, jewelry makers, and film and music studios, small craftsmen such as glass blowers, and small contractors and estimators. Service-oriented industrial workers, such as plumbers, painters, and roofers may find the area amenable to offices and small showrooms, but large-scale storage might be required elsewhere. Metalworkers and small electronic device manufacturers would have greater compatibility problems, but could potentially fit in the neighborhood.

Firms that can leverage additional clusters may prove to be more successful, such as small electronic manufacturers who leverage the growth in the health field by making medical devices or contractors who pursue green building techniques.

Finally, firms that offer services to local residents may be the most compatible. For example, furniture stores with a retail component would be able to leverage the light-rail generated residential growth. However, as pointed out in the retail study, there are limitations to the growth of retail in the area.

Business Needs

While many of the business needs are compatible with a residential neighborhood, there are several concerns that need to be taken into account. Site design and building design need to provide good freight access while high levels of direct residential exposure. Buildings need to be designed with high ceilings for storage and machinery. Low-impact production businesses also need lower rents than are typically found in other commercial environments.

Recommendations

Three types of recommendations are provided in this section. The first group of recommendations is designed to develop an understanding of neighborhood preferences. The second group is intended to promote the growth of low-impact production businesses should the community express a desire to grow in this direction. The final group of recommendations is intended to address the market factors that impede the growth of low-impact production businesses.

Determining Neighborhood Values

The potential of low-impact production jobs depends in large part on the Rainier Beach community. Whether new jobs are “worth” an increase in van or truck traffic, or whether shorter commutes outweigh potentially higher daytime noise levels is an issue of community values. Therefore the first set of recommendations relates to determining neighborhood values.

- **Involve the neighborhood in determining the appropriate balance of jobs, housing, noise levels, and other impacts**

The neighborhood planning process provides an opportunity for the community to weigh the costs and benefits of economic development strategies. For example, as shown in Figure 25, businesses that are the most compatible with residential uses tend to offer higher pay but are less accessible to lower-skilled workers. Tradeoffs about mitigation techniques can also be discussed; for example, determining how much the community values compatibility versus predictability will help determine the appropriateness of performance zoning as a mitigation tool. On a broader level, the community can discuss whether it is more concerned with residential tranquility or economic security.

The planning process also offers a chance for the City to determine what sort of skills community members have and what employment opportunities they want.

Providing tangible examples will be important to the discussion. For example, it can be difficult to visualize the difference between 14’ and 20’ ceilings, or imagine a one decibel increase in noise. Photographs and site visits can provide a means of understanding the impact these businesses would have on the streetscape and on residents’ daily lives.

One challenge to this strategy is the distribution of demographics in the wider Rainier Beach neighborhood. The differences in income and culture between planning area residents and the surrounding neighborhood could lead to conflicts. For example, residents of outlying homes could feel the effects of increased delivery traffic but would not *directly* benefit from an increase in blue-collar jobs. The City will need to determine which stakeholders will be involved in the planning process and will need to communicate the rationale and benefits of planning decisions to the wider neighborhood.

- **Develop a better label for low-impact production jobs**

Interviewees frequently commented on the lack of an accurate descriptor for neighborhood compatible production jobs. While they may technically be light industrial jobs, this label conjures up images of smokestacks and tractor trailers. Interviewees were also uncomfortable with San Francisco’s use of the term “Production, Distribution, and Repair”; this term still suffered from the “smokestack” connotation, and includes the less compatible distribution and repair categories. Real estate marketing firms could be consulted to better describe the type of business and building stock.

- **Develop neighborhood design standards as part of the neighborhood planning process**

Rainier Beach does not currently have neighborhood-specific design standards. Developing these standards as a part of the neighborhood planning process would not only help to create a feeling of place in the neighborhood, but could set clear guidelines for new business creation. Design standards would help industrial building developers to understand what elements should be included to meet neighborhood expectations.

- **Develop neighborhood performance zoning**

If the neighborhood desires more low-impact production job opportunities, or if the City is able to attract an incubator-style development, the City should work with neighborhood residents to translate the values expressed in the neighborhood planning process into enforceable performance standards. These standards would help residents know what to expect from new development and provide a clear signal to business owners on neighborhood compatibility.

- **Form a Neighborhood Advisory Council of neighborhood groups**

If performance zoning is adopted, the City can shift monitoring responsibility to a neighborhood advisory body, as the Port of Seattle does for Terminal 91 (see page 97). While the Southeast District Council covers a much wider area of Rainier Valley, it might be possible to form a committee to monitor businesses in Rainier Beach. Alternatively, members of the Rainier Beach Empowerment Committee, the Rainier Othello Safety Association, or other neighborhood associations might be interested in forming a monitoring group.

Promoting Low-Impact Production Businesses

The second set of recommendations assumes that the neighborhood would like to see an increase in low-impact production oriented jobs. These recommendations include both programmatic options and changes to the municipal code.

- **Address the information gap**

Through its interactions with business owners, the City can promote the less well known benefits of Rainier Beach. For example, when conducting economic development outreach, the City can make sure that business owners outside of Rainier Beach are aware of the proximity of the Boeing Access Road highway entrance.

The City can also make business owners and developers aware of specific parcels that would make attractive sites for industrial development. The City would need to identify attractive parcels, identify developers who have managed flex, incubator, or mixed building types in the past, and connect these developers to property owners.

The City can also conduct outreach to small entrepreneurs who are ready to expand their home businesses to incubator space. These businesses may be challenging to identify, but could be

reached by reviewing B&O tax receipts and conducting outreach through neighborhood coordinators and local non-profits.

The City could conduct feasibility analyses for mixed-use production/residential buildings as the City of Los Angeles did in 2006. While private sector feasibility analyses might be more accurate, the City's analysis might spur private interest.

- **Simplify the design process**

The City can simplify the process needed to develop in the Rainier Beach by publicizing design expectations identified in the neighborhood planning process. More aggressively, it can develop pre-approved building designs. These add certainty to the development process and streamline the approval process. Such an approach was taken in Portland, Oregon and Sacramento, California to promote the development of infill housing.³⁵⁵

- **Promote the development of low-impact production businesses with retail components**

The City has already helped identify the potential retail home furnishings niche through the Rainier Valley Retail Strategy study. It could work with neighborhood business groups and existing furniture manufacturers to identify business owners who might be interested in opening a custom furniture shop in Rainier Beach. This would capitalize on the retail gap and incorporate production-oriented jobs into the development process.

- **Change the zoning code to promote low-impact production businesses**

The City could make modifications to the zoning code to promote low-impact businesses. It could increase the height requirements of ground floor uses, or it could extend the height bonuses to first floor low-impact production businesses, provided that they met frontage requirements. It could exempt certain businesses under set square footages from the acoustic reviews. It could provide bonuses for interior loading spaces, rollup doors, or alley development. The City should consult with existing low-impact production businesses to see where frontage requirements are problematic. The City could also assess whether setback requirements could be lowered for businesses below a certain size.

More aggressive changes to the zoning code could include developing mixed residential/industrial zones similar to those discussed in the case studies. This zoning type would be applied south of the Neighborhood Planning Area in the Commercial 1 or General Industrial 2 zones. A similarly aggressive change would be to require low-impact production uses in first floor developments. However, both of these options are likely to incur administrative and community objection.

³⁵⁵ "Infill House Plans," *City of Sacramento, Community Development Planning*, March 4, 2010, <http://www.cityofsacramento.org/dsd/planning/infill-house-plan-program/>; "Competition Background - Overview," *City of Portland, OR Development Services*, n.d., <http://www.portlandonline.com/bds/index.cfm?&a=271560&c=51302>.

- **Be discerning when attracting small businesses**

Focus business support and attraction on businesses that offer niche services and customization with high levels of value added per employee. Ideal businesses will have a range of required skills, and will provide opportunities to train on technology-driven tasks. These businesses are most likely to be successful and provide living wages to employees.

- **Design “nuisance disclosures” for projects mixing residential and production uses**

Requiring residents of industrial/residential mixed-use projects to sign nuisance disclosures could provide production-oriented businesses with more assurance that they will not be displaced. These disclosures signal production-oriented businesses that they will be accepted on-site neighbors, although this would not prevent complaints from off-site neighbors. This technique was used in San Francisco PDR districts.

Addressing Market Challenges

The final set of recommendations deal with the market challenges of Rainier Beach. Other cities and neighborhoods offer stronger attractions for light industrial businesses. Therefore, the City can help tip the balance by increasing the competitive advantage of the Rainier Beach neighborhood.

- **Implement preferential purchasing**

The City could use its considerable purchasing power to favor goods made in Rainier Beach. Tying City purchasing to social goals has precedent in existing policies that require departments to increase purchasing from minority and women-owned businesses and to choose recycled products over less environmentally friendly goods.³⁵⁶ This strategy could also take the form of increased outreach to low-impact production businesses in Rainier Beach or subcontracting requirements on large contracts.³⁵⁷

- **Provide tax cuts and programmatic funding**

The City can fund programs promoting the growth of low-impact production jobs in Rainier Beach. Economic development organizations already exist that can offer expertise, but could potentially expand their reach or geographic focus with additional funding. Additionally, a portion of the City’s \$40 million in federal New Markets Tax Credits could be directed towards low-impact production development in Rainier Beach.³⁵⁸

³⁵⁶ “Small and WMBE Business Outreach,” *City of Seattle, Department of Executive Administration*, n.d., <http://www.seattle.gov/executiveadministration/smallbusiness/>.

³⁵⁷ Timothy Bates, “Utilizing Affirmative Action in Public Sector Procurement as a Local Economic Development Strategy,” *Economic Development Quarterly* 23, no. 3 (August 1, 2009): 180-192.

³⁵⁸ City of Seattle Department of Planning and Development, “City of Seattle New Markets Tax Credit Areas (NMTC),” February 16, 2010, http://www.cityofseattle.net/economicdevelopment/pdf_files/NMTC%20Map%20Seattle.pdf; City of Seattle Office of Economic Development, “City establishes \$40 million.”

- **Pair place-based strategies with workforce development**

The City could make the neighborhood more attractive for low-impact production businesses by improving the skill-level of the neighborhood's residents. The technology expertise required for production work can make it difficult to find qualified employees. By conducting concentrated outreach to connect neighborhood residents with skills training agencies such as the community college system, the City could make Rainier Beach residents more attractive to businesses.

- **Attract a non-profit anchor**

With the exception of the Rainier Avenue auto-repair businesses in the northern end of the planning area, little production synergy exists. Having a local cluster of businesses supports the exchange of ideas and resources. Bringing in a moderately sized non-profit production business or property manager could be a catalyst for the development of a local cluster.

This strategy has the added benefit of reducing effective rents for production-oriented businesses. Several of the case studies highlight the importance of non-profits in supporting small production-oriented businesses. Mission-driven organizations provide a place for businesses that would otherwise be driven out by higher-rent producing uses.

A non-profit anchor provides other advantages as well. It can provide technical assistance that small businesses need, it can provide a single point of contact for neighbors to manage compatibility issues, and it can do the outreach necessary to find potential neighborhood entrepreneurs.

Potential Locations of Low-impact Production Jobs

These strategies need not be applied equally throughout the Rainier Beach neighborhood. Low-impact production businesses could be matched to the appropriate node. Variations in existing noise, topography, and other local conditions can help determine placement. For example, south of Henderson Station, MLK enters a small valley (see Figure 93). This could affect noise and residential encroachment potential. Likewise, there are pockets of properties along Rainier Avenue that already experience a moderate degree of noise (see Figure 94). Firms locating in these areas would be less of a noise concern because of the higher ambient noise levels.

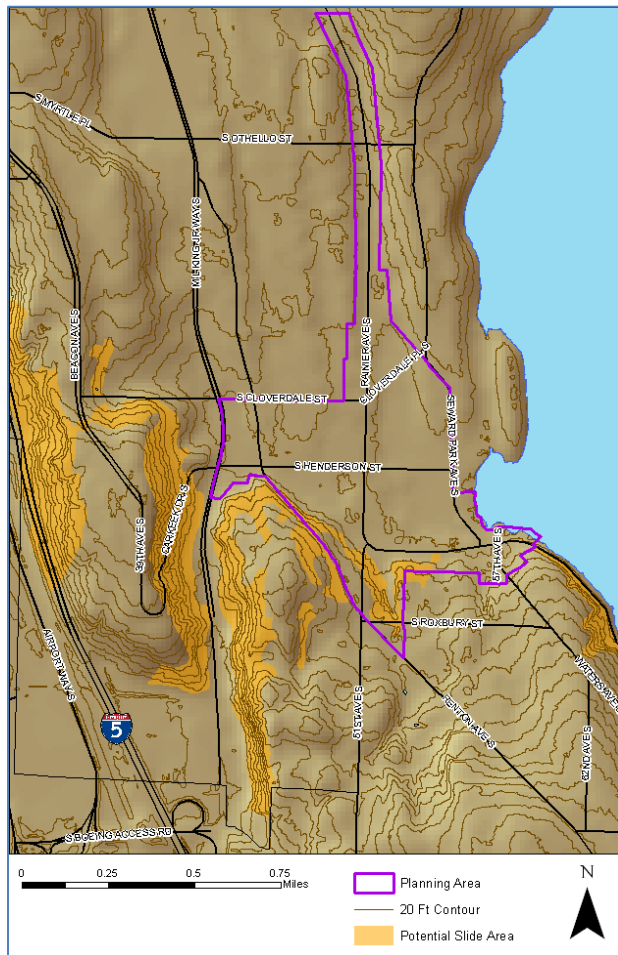


Figure 93: Rainier Beach topography

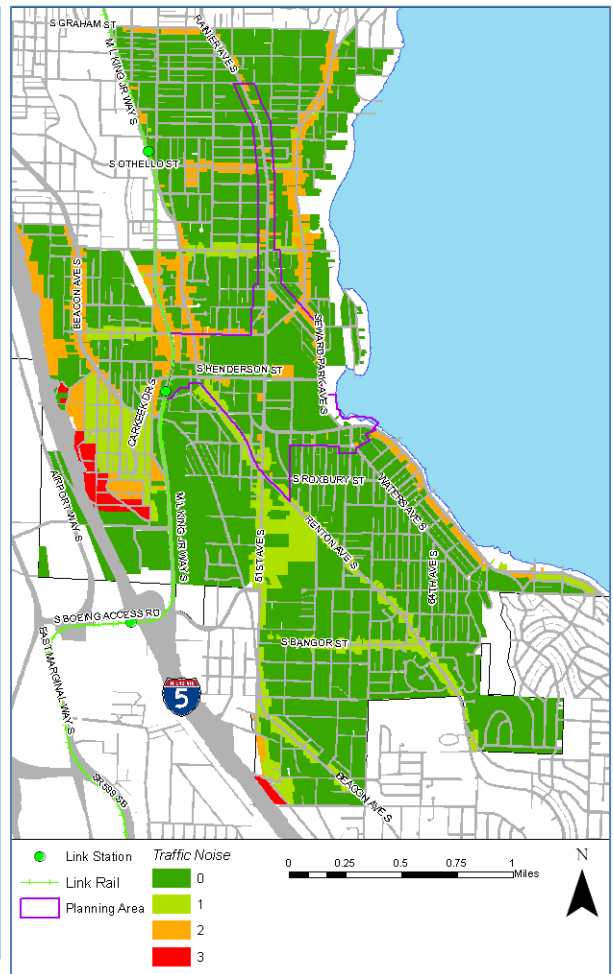


Figure 94: Rainier Beach census tracts traffic noise

Note valley to the south of planning area and existing moderate traffic noise areas that might be appropriate for low-impact production business. Also note that Assessor noise level is outdated; new on-the-ground measurements should be taken.

Source: Data from WAGDA (Figure 93, 94) and King County Assessor (Figure 94). Mapped with ArcGIS 9.

One possible treatment of the nodes within Rainier Beach is displayed in Figure 95.

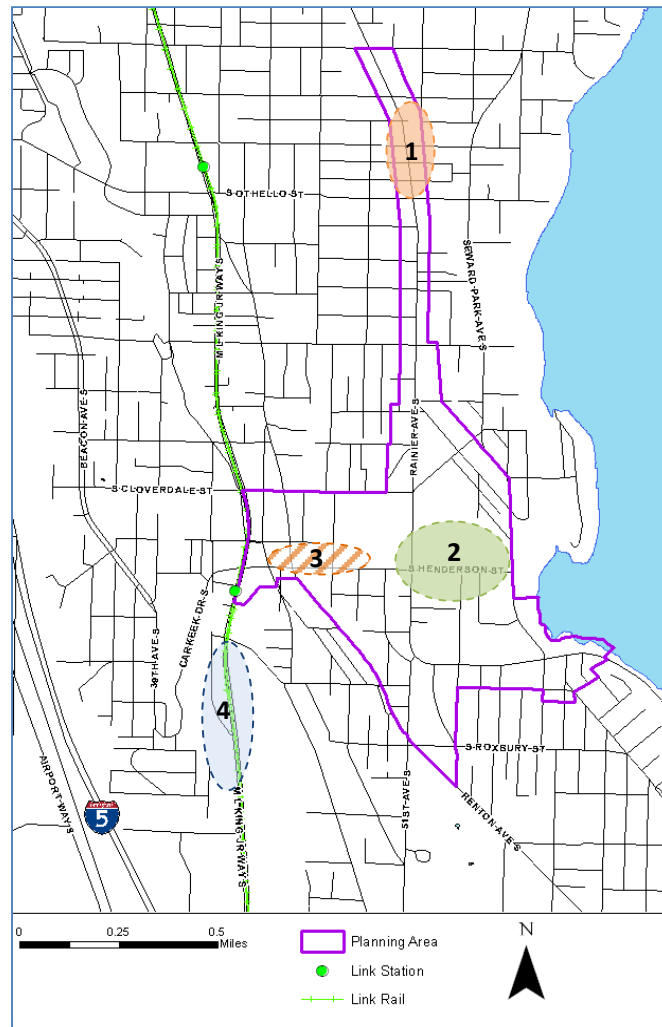


Figure 95: Potential development nodes. Each node could accommodate a different intensity of business development

Source: Data from WAGDA. Mapped with ArcGIS 9.

- Area 1:** The portion of Rainier Avenue that lies to the north of the commercial hub may be more attractive for incubator and some smaller flex buildings types. These businesses need less truck traffic, and would represent an intensity of land use somewhat greater than the auto-repair businesses which currently reside in the area. These businesses would best function in clusters to promote their exchange of ideas and resources. Several areas along Rainier Ave already have moderate noise levels. This area is least likely to interfere with the planned Rainier Avenue/Henderson commercial core pedestrian environment. Some of these lots may be large enough to accommodate site design that engages the surrounding properties while shielding them from loading noises and other impacts.

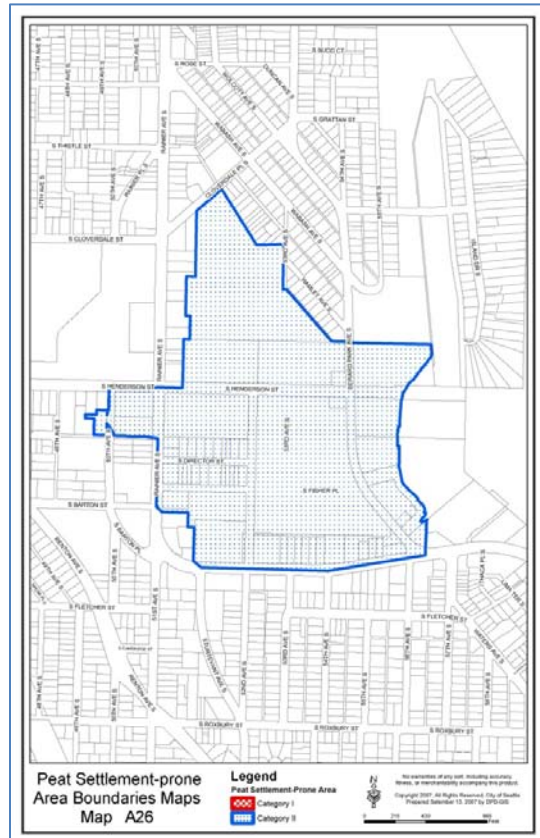


Figure 96: Peat settlement-prone area. Constructing multi-story buildings could be more complicated in this area.

Source: City of Seattle Department of Planning and Development, “Peat Settlement-prone Area Boundaries Maps, Map A26,” September 13, 2007

- Area 4:** Businesses with greater potential for noise creation could locate just to the south of the station. The topography of the area limits encroachment from the east and west, although it may also limit the depth available for development. This area could also serve a development such as that described in the Boulder Steel Yard study. Note in Figure 53 that the Steel Yard development relies on a larger lot size in order to create a layout that accommodates commercial and residential uses. It could be possible to design the site layout with industrial-service buildings facing MLK, thereby shielding residential development from the noise of the light rail. This type of development could be used as a buffer between the high density residential development anticipated around the station and the commercial uses to the south. As discussed above, such a development could include businesses that would make use of the light rail for delivery, such as a culinary incubator. This area also provides the best location for businesses that provide van delivery services, since it has the closest access to the highway entrance. Note, however, that this area could potentially experience landslides, which would require a more technical review of feasibility.

Strategic Challenges

Creating economic development strategies with the goal of promoting small, low-impact production businesses is not without its risks. These include the challenges of economic development and land use timeframes, ensuring that benefits accrue to current residents, and successfully targeting businesses.

The chief challenge to the strategies discussed above is the time frame involved in economic development and land use planning. Building life can be very long; therefore, production space that is designed poorly or limits growth in the neighborhood will impact the neighborhood for a long time. For example, if the City allows single-story production space with negative off-site impacts to be produced near the light rail station, it could deter the growth of transit-oriented residential development.³⁵⁹ A second time-related challenge lies in the rate of residential displacement. Demographic data suggests that the low-income people this strategy is meant to serve are already being displaced from Rainier Beach. Establishing new businesses and creating new production space take time and therefore do not offer an immediate solution to displacement.

While one of the strengths of low-impact production businesses is that they hire people with the same skills as Rainier Beach residents, there is no guarantee that the businesses will actually hire from within the neighborhood. Ironically, the transportation investments in the neighborhood also make it easier for Rainier Beach employers to hire workers from a broader geographic area. Community benefit agreements, City contracting stipulations, and loan requirements can all encourage businesses to hire locally, but not every business will be subject to these criteria. In contrast, programs that focus on workforce development would allow community members to better compete for jobs throughout the region. Ideally, these workforce development programs would work in concert with low-impact production businesses to give local residents an edge in the hiring process.

Finally, interviewees suggested that targeting specific types of businesses for economic development can be more challenging than other strategies. Providing workforce training or helping established businesses expand may both require less effort than identifying and growing start-up companies or enticing businesses to relocate.³⁶⁰ This means that the City could have to work harder to convince partner organizations to adopt the strategies discussed above.

Future Research

The City could better focus its efforts by gaining a better understanding of the three subjects: the dynamics of the MIC, the skills held by neighborhood residents, and the role of existing low-impact production businesses in Seattle.

Better understanding the role of the MIC with regard to small, low-impact production businesses would help align City efforts regarding economic development. It would help resolve the conflicting

³⁵⁹ Marshall Foster (Director of Planning, Seattle Department of Planning and Development), interview.

³⁶⁰ Greg Anderson (Small Business Development Officer, Rainier Valley Community Development Fund), interview.

information regarding the advantages and disadvantages of locating these businesses outside of the Manufacturing and Industrial Zone.

A better understanding of the community's skill sets would be useful in targeting business attraction and development. For example, the Manufacturing Institute has created a list of twenty-five skills relating to personal effectiveness and academic, workplace, and technical competencies that could be used to assess the competitiveness of the existing workforce.³⁶¹ While the census provides information on residents' occupation, it is less useful for identifying the *skills* residents use at their jobs, and even less useful for identifying talents that have yet to be leveraged for income (ex., the cooking skills of the chefs in the La Cocina case study). The neighborhood planning process and working with local workforce training organizations could help build this knowledge.

Finally, future research could attempt to understand the role of existing low-impact production businesses in Seattle, particularly their quantity, size, and businesses potential. This would help identify the market growth potential for the sector and would identify more business owners who could instruct the City on their business-specific needs.

³⁶¹ "NAM-Endorsed Skills Certification System" (The Manufacturing Institute, n.d.), <http://www.manufacturingskills.org/pdf/FINAL-chart-careers.pdf>.

Glossary

(Andrea Lehner)

Career ladders. A career ladder is a structured sequence of job positions through which a person can build skills and gain higher wages within a company or an industry.

Community economic development. Economic development is “a process of creating and utilizing physical, human, financial, and social assets to generate improved and broadly shared economic well being and quality of life for a community or region.”³⁶² Economic development strategies have evolved over the years from 1960’s tax abatement policies that were meant to attract specific industries and ensure they are profitable. Since then, economic development has also come to include equity considerations for a fair distribution of growth, considerations for environmental sustainability, and finally recognition of market solutions and even metropolitan or regional planning as good tools for revitalization. The new economic development is not government incentives for specific businesses, but instead is focused on raising the standards of living and improving the quality of life through a process that specifically decreases inequality in metropolitan development and standard of living.³⁶³ Community economic development engages neighbors, local institutional organizations and political processes to encourage growth in jobs, income, and business growth.³⁶⁴ Community economic development recognizes the wide array of tools available to encourage local economic growth.

Curb cuts. Curb cuts are the break in the curb where parking lots connect with the street. Curb cuts facilitate vehicular access to buildings, but disrupt the pedestrian environment by allowing cars to cross the sidewalk.

Dock-high loading. Buildings with dock-high loading have large doors that open directly onto loading docks so that heavy goods can be rolled directly on to trucks, eliminating the vertical movement of freight.

Floor plates. The floor plate of a building refers to the amount of floor space that is uninterrupted by structural columns. Larger floor plates allow for more customization in production flow and accommodate larger production equipment.

Local small business. The terms “local small business” and “entrepreneurship” will be often used in this report and have been used differently by various organizations. The Small Business Act simply defines “small business” as independently owned and operated, and not the leader in the industry in which it

³⁶² Seidman, Karl. “Capital Availability and Economic Development” in *Economic Development Finance*. Thousand Oaks: Sage Publications, 2005. Page 5.

³⁶³ Fitzgerald, Joan and Nancy Green Leigh. “Redefining the Field of Local Economic Development” in *Economic Revitalization: Cases and Strategies for City and Suburb*. Thousand Oaks: Sage Publications, 2002. Chapter 1.

³⁶⁴ Shaffer, Ron; Stever Deller, and Dave Macouiller. “Rethinking Community Economic Development” *Economic Development Quarterly*. 2006, Issue 20, Pages 59-74.

operates.³⁶⁵ The American Independent Business Alliance (AMIBA) further identifies what it means to be independent and defines “local independent business” as having the following three elements:

1. Private, employee, community, or cooperative ownership,
2. At least 50% owned by area residents,
3. Full decision-making function for the business lies within its owners, and
4. Limited number of locations, all within a single state or region.³⁶⁶

For this study’s purposes in Rainier Beach, we will use a blend of these definitions. The small business must be independent, as defined above by AMIBA while also entrepreneurial, defined by the Small Business Act as *not* a dominant leader in its operating industry.

Low-impact production. Non-retail commercial businesses that create lighter impacts on surrounding properties than traditional light industry, including businesses such as small printers, craft workshops, custom woodworkers or other custom manufacturers, and food preparation.

Stakeholders. Many are involved in the development and success of a community. Stakeholders are those who each have a role in the success of a community. The growth and success of Rainier Beach, for example, may depend on the residents, business owners, property owners, employees, policy makers, community groups, and other local institutions working together.

Unskilled worker. Unskilled workers are those who have not received any post secondary education or other career training. These workers are at a particular disadvantage as all types of jobs are beginning to incorporate higher levels of technology.

³⁶⁵ Small Business Act (Public Law 85-536), Section 3(a)(1). Small Business Administration website. http://www.sba.gov/idc/groups/public/documents/sba_homepage/serv_small_bus_act.pdf Accessed March 4, 2010. Page 6.

³⁶⁶ “About the Independent Business Alliance.” AMIBA’s website. http://amiba.net/about_ibas.html Accessed on March 3, 2010.

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The Eastern Neighborhoods Rezoning Options Workbook explains the various intensities of production, distribution, and repair businesses. The report provides examples of the types of business that could be considered PDR.

City and County of San Francisco Planning Department. *Industrial Land in San Francisco: Understanding Production, Distribution, and Repair,* July 2002. <http://www.sf-planning.org/Modules/ShowDocument.aspx?documentid=4893>.

“Understanding PDR” identifies the role that PDR jobs play in the broader San Francisco economy, including their competitiveness and compatibility.

Community Land Use and Economics Group, LLC. *Retail Development Strategy for Rainier Valley.* Arlington, Virginia: City of Seattle Office of Economic Development, December 2009. <http://www.seattle.gov/economicdevelopment/pdfs/Retail%20development%20strategy%20for%20Rainier%20Valley%20-%20final%20report.pdf>.

The retail development strategy assesses the current state and future growth potential for retail in the Rainier Valley. It finds that retail growth is most feasible by expanding product lines in existing stores rather than attracting new retail owners. It also finds that the area is over zoned for retail, particularly along the MLK corridor.

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Sommers, Paul, Mark Gardner, and Juliet Scarpa. *Skills Required: Preparing Puget Sound for Tomorrow's Middle-Wage Jobs*. Seattle Jobs Initiative, March 3, 2008. <http://www.seattlejobsinitiative.com/policy/publications/documents/SJIMWJReport07242008.pdf>.

Seattle Job's Initiative's *Skills Required* report identifies the occupations most likely to provide living wages to workers without four-year degrees. There is overlap between these "middle-wage" jobs and the low-impact production jobs discussed in this paper.

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- Matt Houghton, Workforce Development Manager, Seattle Office of Economic Development, April 27, 2010
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- W. Scott Carter, Principal, Pacific Real Estate Partners, April 23, 2010
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- Don Vehige, GGLO Architects, April 20, 2010
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Appendix I: Business-Specific Findings

The following issues arose in response to inquiries on specific business types, and presents opportunities for future investigation.

Green Jobs

Community organizations, such as the Rainier Beach Empowerment Coalition and 4Culture, are interested in creating “green jobs” such as weatherization and home energy audits. However, based on the interviews and literature review, it appears that the definition, potential, and needs of “green jobs” is still ambiguous. Some defined green industries as those that produced standard products in a more efficient way, while others defined them as businesses that produced goods or services that reduced consumers’ energy use. While the Seattle Jobs Initiative’s Skills Required report includes Green Building and Clean Technology as middle-wage job clusters, it is unable to project accurate job growth because of the confusion over the industry.³⁶⁷ This lack of clarity would make it difficult to target this sector in a Rainier Beach economic development strategy.

However, despite the difficulty in choosing jobs to target, the sector does have several benefits. The Clean Tech sector in particular is already more concentrated in the Puget Sound than in other regions, and public policies in Seattle and King County are being shaped to support even further growth.³⁶⁸ Green job training programs have been also able to draw attention at a federal level; in 2009, South Seattle Community College’s Georgetown Puget Sound Industrial Excellence Center received \$4 million from the federal government, \$1 million from the state government, and \$200,000 from a private foundation to support green jobs training, business development, and entrepreneurship training.³⁶⁹ The Center currently offers courses in residential energy auditing, weatherization, and specialized contract training. Other funds have been generated from the American Recovery and Reinvestment Act. Thus, businesses in the green sector should find an increasing amount of public investment, and, through training programs, an increasing number of skilled workers.

“Green collar jobs,” or traditionally blue-collar jobs within the green sector, overlap considerably with the low-impact production realm, and offer many of the same benefits. The Seattle Jobs Initiative found that green collar jobs typically provided living wages, good benefits, healthy working conditions, opportunities for advancement, and career possibilities for low-income people and those without four-year degrees.³⁷⁰ However, the Seattle Jobs Initiative’s report also concluded that the growth in this sector would require extensive workforce development to overcome the shortage of interested workers with the necessary skills (ex. critical thinking, math, and energy efficiency-specific skills).³⁷¹ It should also be noted that green industry jobs are not automatically good jobs; research by the advocacy

³⁶⁷ Sommers, Gardner, and Scarpa, *Skills Required*, 11.

³⁶⁸ Juliet Scarpa, *A Growing Green Economy: Opportunities of Tomorrow* (Seattle Jobs Initiative, March 2009), 2-4.

³⁶⁹ Joe Hauth, “College Receives Major Federal Grant” (Puget Sound Industrial Excellence Center, September 23, 2009), [http://georgetown.southseattle.edu/pdf/PSIEC%20\\$4%20million%20%20RELEASESeptember%2023.pdf](http://georgetown.southseattle.edu/pdf/PSIEC%20$4%20million%20%20RELEASESeptember%2023.pdf).

³⁷⁰ Scarpa, *A Growing Green Economy*, 7-8.

³⁷¹ *Ibid.*, 11.

organization Good Jobs First found that low-paying and non-unionized green industry jobs were common and subject to more off-shoring than previously thought.³⁷²

In order to understand the potential for growing low-impact production businesses within the green sector, the City should talk to existing businesses in each of the green economy sectors: Energy Efficiency, SmartGrid/Smart Energy, Renewable Energy, BioFuels, Green Building, Alternative Transportation, Recycling & Waste Management, and Sustainable Agriculture.³⁷³ Additional understanding of the logistical and spatial needs of these industries could be gained from talking to green jobs training agencies, such as the community colleges, regional utilities, and local organizations such as Got Green and Laborers International Union of North America.

Glass Blowing

Glass blowing was suggested as a potential industry for Rainier Beach. While Tacoma is better known for its glass production, several examples exist in Seattle, including Glassybaby in the Madrona neighborhood, Seattle Stained Glass in Wallingford, and Viscosity in Rainier Beach.

These companies provide niche products, and incorporate a retail component. Glassybaby began in a repurposed dairy building in Greenlake and now operates in a 5,700 square foot studio and retail space in the Madrona neighborhood.³⁷⁴ It primarily produces small, colorful votive candle holders. In 2009, it employed 70 people (full and part-time), including 30 glass blowers.³⁷⁵

Glassworks are not necessarily neighborhood compatible; they require care to prevent the spread of dust from raw materials and the release of chemicals from the glass melting process.³⁷⁶ Glassybaby must charge high prices in order to pay for the high quality studio air filters.³⁷⁷

The Seattle Stained Glass building demonstrates a design that has both positive and negative aspects. The neighborhood benefits from the building's contribution to a pleasant street environment, with brick walls, pedestrian scale awnings, many windows, street trees, and sidewalks (see Figure 97). Additionally, freight functions are conducted largely through the use of small vans rather than large trucks. However, the buildings two roll-up doors are located on a residential side street, which brings freight traffic off the main arterial and in to the residential neighborhood (see Figure 98). While this likely exposes the residential neighbors to more business noise, the effects are probably mitigated to some extent by the use of the neighboring house for storage.

³⁷² Philip Mattera, *High Road or Low Road? Job Quality in the New Economy* (Good Jobs First, February 3, 2009), 5.

³⁷³ Scarpa, *A Growing Green Economy*, 5.

³⁷⁴ Cecelia Goodnow, "Small Retail: It's the inner glow that sells handblown glassybabys," *Seattle Post-Intelligencer*, February 15, 2008, http://www.seattlepi.com/business/351463_retail16.html.

³⁷⁵ Melissa Allison and Amy Martinez, "Glassybaby Grows With a Little Help from Jeff Bezos," *Seattle Times Newspaper*, November 27, 2009, sec. Retail Report, http://seattletimes.nwsourc.com/html/retailreport/2010365213_retailreport27.html.

³⁷⁶ *Compilation of Air Pollutant Emission Factors, Volume I: Stationary Point and Area Sources* (Research Triangle Park, NC: Office of Air Quality Planning and Standards, Office of Air and Radiation, U.S. Environmental Protection Agency, January 1995), <http://www.epa.gov/ttn/chief/ap42/ch11/final/c11s15.pdf>.

³⁷⁷ Goodnow, "Small Retail."



Figure 97: Seattle Stained Glass front view. Note attractive storefront, walkable pedestrian environment, and loading off of non-arterial street.³⁷⁸



Figure 98: Seattle Stained Glass rear view. Note use of vans for delivery, high ceilings, covered loading, and multiple rollup doors.³⁷⁹

Welding

Small-scale welding can fit into the low-impact category. It is also regarded as an entry point into a well-paying middle wage career track by the Seattle Jobs Initiative, which offers welding courses. However, one interviewee singled out welding as an odor-creating activity and questioned the effectiveness of mitigation efforts.³⁸⁰ This activity warrants further investigation before widespread promotion.

³⁷⁸ "2510 North 45th Street, Seattle, WA 98103-6910," *Google Maps*, n.d., <http://maps.google.com/maps?q=seattle%20stained%20glass&oe=utf-8&rls=org.mozilla:en-US:official&client=firefox-a&um=1&ie=UTF-8&sa=N&hl=en&tab=wl>.

³⁷⁹ *Ibid.*

³⁸⁰ W. Scott Carter (Principal, Pacific Real Estate Partners), interview.

Food Preparation

While food preparation may leverage talents of Rainier Beach residents, it has a high start-up capital cost, which could create a barrier to entry for local entrepreneurs. One housing professional indicated that her first step of renting out commercial space is to determine whether the previous tenant was a restaurant.³⁸¹ The high cost of commercial grade kitchen ducting was a strong incentive to replace previous restaurants with new restaurants and avoid installing restaurants where none existed before. Other economic development literature questions the availability of job ladders in food preparation.³⁸²

Garment work

Interviewees suggested that garment work would be particularly appropriate for the Rainier Beach because of recent immigrants' potential experience with the work and because of the low levels of external impacts. Like the broader manufacturing category, mass production of garments has plummeted in the U.S.; the number of sewers and garment manufacturers dropped 66% from 858,000 to 283,000 from 1994 to 2004.³⁸³ However, there are existing established businesses in Seattle that manufacture niche outdoor sport garments, such as Outdoor Research, Cascade Designs, and Filson Clothing (see Figure 99 and Figure 100). While these companies have outsourced some of their production overseas, all still create some of their own products in the Duwamish MIC. Small businesses could attempt to supply or service this cluster.

Filson, for example, has found its market niche by manufacturing and wholesaling small runs of very specialized high end clothing, such as waxed canvas hunting jackets.³⁸⁴ The company offers clothing repair and custom orders for discontinued patterns as well.³⁸⁵ Their 80-person sewing workforce is largely female and Asian, and is unionized with health benefits.³⁸⁶ However, these jobs do not provide high wages; workers are paid by the piece and averaged \$10/hour in 2005.³⁸⁷

³⁸¹ Maiko Winkler-Smith (Executive Director, Seattle Chinatown International District Preservation and Development Authority), interview.

³⁸² Linda Struyk, "The Brewery Project: An Analysis of the Options for, and Feasibility of a Food Processing Incubator in Jamaica Plain" (master's thesis, John F. Kennedy School of Government, Harvard University, 1990), 12, http://www.ksg.harvard.edu/rappaport/downloads/paes/struyk/brewery_project.PDF.

³⁸³ Alwyn Scott, "Final Cut for Textile Quotas: Poor Nations No Longer Guaranteed Work," *Seattle Times*, December 12, 2004, sec. Business & Technology, http://seattletimes.nwsourc.com/html/business/technology/2002116717_apparel12.html.

³⁸⁴ Lynda V. Mapes, "The Genuine Article," *Seattle Times*, July 1, 2005, sec. Pacific Northwest Magazine, <http://community.seattletimes.nwsourc.com/archive/?date=20050701&slug=pacificpfilson03>.

³⁸⁵ Ibid.

³⁸⁶ Ibid.

³⁸⁷ Ibid.



Figure 99: The 38,000-square-foot Filson factory and retail store, 1555 4th Avenue South ³⁸⁸



Figure 100: Filson sewing floor

Note the high ceilings, sturdy floor, and ductwork that allow Filson to operate at scale. Distribution is conducted from a similarly sized nearby warehouse.

³⁸⁸ Bill Miller, "Filson Stakes it's Claim," *Filson*, November 2002, <http://www.filson.com/corp/index.jsp?page=article1>.

Appendix II: Middle-Wage Occupations, Seattle Jobs Initiative

Growth of Middle-Wage Occupations in the Construction Industry Cluster in the Puget Sound Region, 2004-14	
Occupation	Projected New Direct Jobs
Carpenters	2,902
Construction laborers	2,025
First-line supervisors/managers of construction trades and extraction workers	1,523
Electricians	1,177
Painters, construction and maintenance	904
Operating engineers and other construction equipment operators	854
Plumbers, pipefitters, and steamfitters	824
Drywall and ceiling tile installers	668
Roofers	552
Construction managers	524
Cost estimators	453
Tapers	441
Sheet metal workers	429
Truck drivers, heavy and tractor-trailer	406
Cement masons and concrete finishers	315
Telecommunications line installers and repairers	307
Structural iron and steel workers	304
Heating, air conditioning, and refrigeration mechanics and installers	210
First-line supervisors/managers of office and administrative support workers	197
Glaziers	194
Elevator installers and repairers	144
Pipelayers	143
Executive secretaries and administrative assistants	133
Maintenance and repair workers, general	125
Tile and marble setters	111
Payroll and timekeeping clerks	109

Growth of Middle-Wage Occupations in the Aerospace Industry Cluster in the Puget Sound Region, 2004-14	
Occupation	Projected New Direct Jobs
Aircraft Structure, Surfaces, Rigging, and Systems Assemblers	1,211
Aircraft Mechanics and Service Technicians	701
Drafters, All Other	432
Purchasing Agents, Except Wholesale, Retail, and Farm Products	418
Industrial Engineering Technicians	411
Business Operations Specialists, All Other	373
Engineering Technicians, Except Drafters, All Other	354
Executive Secretaries and Administrative Assistants	189
Electrical and Electronics Repairers, Commercial and Industrial Equipment	160
First-Line Supervisors/Managers of Production and Operating Workers	153
Computer-Controlled Machine Tool Operators, Metal and Plastic	129
Machinists	121
Tool and Die Makers	119
Welders, Cutters, Solderers, and Brazers	110
Industrial Machinery Mechanics	100
Transportation Inspectors	94
Maintenance and Repair Workers, General	92
Cost Estimators	79
Production, Planning, and Expediting Clerks	70
Mechanical Drafters	65
Painters, Transportation Equipment	59
Metal Workers and Plastic Workers, All Other	59
Truck Drivers, Heavy and Tractor-Trailer	55
Maintenance Workers, Machinery	51

Growth of Middle-Wage Occupations in the Logistics & International Trade Industry Cluster in the Puget Sound Region, 2004-14	
Occupation	Projected New Direct Jobs
Truck Drivers, Heavy and Tractor Trailer	1,525
Cargo and Freight Agents	244
Flight Attendants	231
Transportation Workers, All Other	200
First Line Supervisors/Managers of Transportation and Material Moving Machine and Vehicle Operators	178
Dispatchers, Except Police, Fire, and Ambulance	167
Sailors and Marine Oilers	157
Captains, Mates, and Pilots of Water Vessels	155
Aircraft Mechanics and Service Technicians	152
First Line Supervisors/Managers of Office and Administrative Support Workers	131
Ship Engineers	90
Bus and Truck Mechanics and Diesel Engine Specialists	80
Maintenance and Repair Workers, General	76
First Line Supervisors/Managers of Helpers, Laborers, and Hand Material Movers	73
Transportation, Storage, and Distribution Managers	61
First Line Supervisors/Managers of Mechanics, Installers, and Repairers	50

Appendix III: Allowable Uses in Seattle Commercial Zones

Uses in Commercial Zones						
USES		PERMITTED AND PROHIBITED USES BY ZONE(1)				
		NC1	NC2	NC3	C1	C2
A. AGRICULTURAL USES						
	A.1. Animal Husbandry	A	A	A	A	P
	A.2. Aquaculture	10	25	P	P	P
	A.3. Horticulture	10	25	P	P	P
B. CEMETERIES						
C. COMMERCIAL USES						
C.1. Animal Shelters and Kennels						
		X	X	X	X	P
C.2. Eating and drinking establishments						
	C.2.a. Drinking establishments	CU-10	CU-25	P	P	P
	C.2.b. Restaurants	10	25	P	P	P
C.3. Entertainment Uses						
	C.3.a. Cabarets, adult (15)	X	P	P	P	P
	C.3.b. Motion picture theaters, adult	X	25	P	P	P
	C.3.c. Panorams, adult	X	X	X	X	X
	C.3.d. Sports and recreation, indoor	10	25	P	P	P
	C.3.e. Sports and recreation, outdoor	X	X	X(2)	P	P
	C.3.f. Theaters and spectator sports facilities	X	25	P	P	P
C.4. Food processing and craft work						
		10	25	25	P	P
C.5. Laboratories, Research and development						
		10	25	P	P	P
C.6. Lodging uses						
		X(3)	CU-25(3)	P	P	P
C.7. Medical services (4)						
		10	25	P	P	P
C.8. Offices						
		10	25	P	35(5)	35(5)
C.9. Sales and services, automotive						
	C.9.a. Retail sales and services, automotive	10(6)	25(6)	P(6)	P	P
	C.9.b. Sales and rental of motorized vehicles	X	25	P	P	P
	C.9.c. Vehicle repair, major automotive	X	25	P	P	P
C.10. Sales and services, general						

	C.10.a. Retail sales and services, general	10	25	P	P	P
	C.10.b. Retail sales, multipurpose	10(7)	50	P	P	P
C.11. Sales and Services, heavy						
	C.11.a. Commercial sales, heavy	X	X	25	P	P
	C.11.b. Commercial services, heavy	X	X	X	P	P
	C.11.c. Retail sales, major durables	10	25	P	P	P
	C.11.d. Retail sales and services, non-household	10	25	P	P	P
	C.11.e. Wholesale showrooms	X	X	25	25	P
C.12. Sales and services, marine						
	C.12.a. Marine service stations	10	25	P	P	P
	C.12.b. Sales and rental of large boats	X	25	P	P	P
	C.12.c. Sales and rental of small boats, boat parts and accessories	10	25	P	P	P
	C.12.d. Vessel repair, major	X	X	X	S	S
	C.12.3. Vessel repair, minor	10	25	P	P	P
D. HIGH-IMPACT USES		X	X	X	X	X
E. INSTITUTIONS						
E.1. Institutions not listed below		10	25	P	P	P
E.2. Major institutions subject to the provisions of Chapter 23.69		P	P	P	P	P
E.3. Religious Facilities		P	P	P	P	P
E.4. Schools, Elementary or Secondary		P	P	P	P	P
F. LIVE-WORK UNITS(8)		P	P	P	P	P
G. MANUFACTURING USES						
G.1. Manufacturing, light		X	10	25	P	P
G.2. Manufacturing, general		X	X	X	P	P
G.3. Manufacturing, heavy		X	X	X	X	X
H. PARKS AND OPEN SPACE		P	P	P	P	P
I. PUBLIC FACILITIES						
I.1. Jails		X	X	X	X	X
I.2. Work-release centers		CCU-10	CCU-25	CCU	CCU	CCU
J. RESIDENTIAL USES(9)						

J.1. Residential uses not listed below	P	P	P	P	CU(10)
J.2. Caretaker's quarters	P	P	P	P	P
K. STORAGE USES					
K.1. Mini-warehouses	X	X	25	40	P
K.2. Storage, outdoor	X	X	X(11)	P	P
K.3. Warehouses	X	X	25	25	P
L. TRANSPORTATION FACILITIES					
L.1. Cargo terminals	X	X	X	S	P
L.2. Parking and moorage					
L.2.a. Boat moorage	S	S	S	S	S
L.2.b. Dry boat storage	X	25	P	P	P
L.2.c. Parking, principal use, except as listed below (12)	X	25	P	P	P
L.2.c.i. Park and Pool Lots (12)	P (13)	P	P	P	P
L.2.c.ii. Park and Ride Lots (12)	X	X	CU	CU	CU
L.2.d. Towing services	X	X	X	P	P
L.3. Passenger terminals	X	X	25	P	P
L.4. Rail Transit Facilities	P	P	P	P	P
L.5. Transportation facilities, air					
L.5.a. Airports (land-based)	X	X	X	X	X
L.5.b. Airports (water-based)	X	X	X	X	S
L.5.c. Heliports	X	X	X	X	X
L.5.d. Helistops	X	X	CCU	CCU	CU
L.6. Vehicle storage and maintenance					
L.6.a. Bus bases	X	X	X	CCU	CCU
L.6.b. Railroad switchyards	X	X	X	X	X
L.6.c. Railroad switchyards with a mechanized hump	X	X	X	X	X
L.6.d. Transportation services, personal	X	X	P	P	P
M. UTILITY USES					
M.1. Communication Utilities, major (14)	X	X	X	CCU	CCU
M.2. Communication Utilities, minor (14)	P	P	P	P	P
M.3. Power Plants	X	X	X	X	X
M.4. Recycling	X	X	X	P	P
M.5. Sewage Treatment Plants	X	X	X	X	X
M.6. Solid waste management	X	X	X	X	X
M.7. Utility Services Uses	10	25	P	P	P

KEY

A = Permitted as an accessory use only

CU = Administrative Conditional Use (business establishment limited to the multiple of 1,000 sq. ft. of any number following a hyphen, pursuant to Section 23.47A.010)

CCU = Council Conditional Use (business establishment limited to the multiple of 1,000 sq. ft. of any number following a hyphen, pursuant to Section 23.47A.010)

P = Permitted

S = Permitted in shoreline areas only

X = Prohibited

10 = Permitted, business establishments limited to 10,000 sq. ft., pursuant to Section 23.47A.010

20 = Permitted, business establishments limited to 20,000 sq. ft., pursuant to Section 23.47A.010

25 = Permitted, business establishments limited to 25,000 sq. ft., pursuant to Section 23.47A.010

35 = Permitted, business establishments limited to 35,000 sq. ft., pursuant to Section 23.47A.010

40 = Permitted, business establishments limited to 40,000 sq. ft., pursuant to Section 23.47A.010

50 = Permitted, business establishments limited to 50,000 sq. ft., pursuant to Section 23.47A.010

NOTES

(1) In pedestrian-designated zones, a portion of the street-level street-facing facade of a structure along a designated principal pedestrian street may be limited to certain uses as provided in section 23.47A.005.D.

In pedestrian-designated zones, drive-in lanes are prohibited (Section 23.47A.028).

(2) Permitted at Seattle Center.

(3) Bed and Breakfasts in existing structures are permitted outright with no maximum size limit.

(4) Medical services over 10,000 sq. ft. within 2,500 feet of a medical Major Institution Overlay boundary require conditional use approval, unless they are included in a Major Institution Master Plan or dedicated to veterinary services.

(5) Office uses in C1 and C2 zones are permitted up to the greater of 1 FAR or 35,000 square feet as provided in subsection 23.47A.010 D. Office uses in C1 and C2 zones are permitted outright with no maximum size limit if they meet the standards identified in subsection 23.47A.010 D.

(6) Gas stations and other businesses with drive-in lanes are not permitted in pedestrian-designated zones (Section 23.47A.028). Elsewhere in NC zones, establishing a gas station may require a demonstration regarding impacts under Section 23.47A.028.

(7) Grocery stores meeting the conditions of subsection 23.47A.010 E are permitted up to 23,000 sq. ft. in size.

(8) Subject to subsection 23.47A.004 G.

(9) Residential uses may be limited to 20 percent of a street-level street-facing facade pursuant to subsection 23.47A.005.C.

(10) Residential uses are conditional uses in C2 zones under Section 23.47A.006 B3, except as otherwise provided above in Table A or in that section.

(11) Permitted at Seattle Center, see Section 23.47A.011.

(12) In pedestrian-designated zones, surface parking is prohibited adjacent to principal pedestrian streets pursuant to Section 23.47A.032.B.2.

(13) Permitted only on parking lots existing at least 5 years prior to the establishment of the park and pool lot.

(14) See Chapter 23.57, Communications Regulations, for regulation of communication utilities.

(15) Subject to subsection 23.47A.004.H.

(Ord. 123046 , Sections 30, 65, 2009; Ord. 122935 , Section 2, 2009; Ord. 122411 , Sections 2, 3, 2007; Ord. 122311 , Section 44, 2006)

Appendix IV: San Francisco PDR Classifications by SIC Code

Table 42: San Francisco PDR classifications³⁸⁹

	Industry Type	2-digit SIC Codes
Production	Printing & Publishing	27
	Other Printing & Binding	27
	Photography Services	72,73,38
	Graphic Design, Int.Design & Signs	35,39
	Radio, T.V. Stations & Comm Services	48,73
	Garment Manufacturing	23
	Other Apparel	22
	Utilities	86,48,49
	Sound Recording/Film Prod	36,38,78
	Catering & Food Processing	20,21
	Building Construction & Maintenance	17,15,16,34,33,32,14,28
	Concrete Works	17
	Furniture Mfg & Repair Woodwork	25,24,32
	Landscaping/Horticulture & Animal Services	75,78
	Chemicals/Plastics/Leather Goods Mfg	31,30,28,51
Distribution	Wholesale Printing & Publishing	51
	Wholesale Apparel	51
	Transportation & Delivery Services	47
	Taxi/Limo/Shuttle	41
	Trucking, Freight, & Packing	42,73,47
	Parcel Shipping & Courier Services	45,44
	Public Warehousing & Storage	42
	Wholesale Flowers	51
	Food & Beverage Wholesale & Distribution	51
	Wholesale Construction & Distribution	50,51
	Furniture Wholesale & Showrooms	50,73
	Interior, Household & Appliance Wholesale	50,73
	Large & Heavy Equipment Wholesale	35,50
	Wholesale Auto Parts	50
	Export/Import Trading Companies	50,51
	Jewelry Wholesale Mfg	39,38,73,50
	Waste Management	49
Repair	Auto Wrecking & Scrap Storage Yards	50,73
	Furniture Mfg &.Wood Work Repair	73,76
	Appliance Repair	76
	Auto & Boat Repair, Parking& Renting	75

³⁸⁹ City and County of San Francisco Planning Department, *Industrial Land in San Francisco*, 17.

Appendix V: San Francisco PDR Timeline

- 1998 – Department of Planning begins investigating Eastern Neighborhoods land use, hires consultant to conduct detailed study.³⁹⁰
- 1999 – In response to consultant’s findings, Department of Planning publishes Zoning Options for Industrial Land report recommending options for interim controls intended to stabilize industrial land until permanent zoning controls are developed.
- August 1999 – Planning Commission adopts resolution to establish interim controls on non-industrial growth.³⁹¹
- 2000-2003 – Department of Planning holds five to six community workshops in each Eastern Neighborhood to discuss community goals, reiterate goals back to the community for confirmation, discuss zoning options, and propose and revise neighborhood area plans.³⁹²
- 1/2002 – Department of Planning releases *Profiles of Community Planning Areas*.
- 7/2002 – Department of Planning holds a “Community Summit,” featuring a panel of experts in real estate development, economic development, and community planning issues. Three hundred people attend, including representatives from the Port, the Redevelopment Agency, the Mayor's Office of Economic Development, City Supervisors, businesses, property owners, residents, and developers.
- 2/2003 - Department of Planning publishes *Community Planning in the Eastern Neighborhoods: Rezoning Options Workbook Draft* – This document details the Light, Medium, and Core PDR services that are discussed in the body of this report.
- 7-9/2003 – Citywide action plans on alleys and open space are released.
- 9/2003 – Department of Planning releases a memo stating their commitment to public benefits zoning. The memo stresses the need for livable neighborhoods and predictable development regulations. It defines the “elements of place” (walkability, transportation choices, gathering places, connectedness to city’s wider community), and the essential physical improvements needed by the Eastern Neighborhoods (community facilities, affordable housing, open space, streets and alleys).
- 2/2004 – Fearing that its 1999 interim resolution was not preventing industrial displacement, the Planning Commission passes another resolution, creating overlay zones to show where PDR and housing uses are encouraged or discouraged.³⁹³

³⁹⁰ City and County of San Francisco Planning Department, *Eastern Neighborhoods Proposed Permanent Zoning Controls: An Overview*, October 6, 2005, 3, <http://www.sf-planning.org/Modules/ShowDocument.aspx?documentid=2574>.

³⁹¹ *San Francisco Planning Commission, Resolution No. 14861*, 1999.

³⁹² City and County of San Francisco Planning Department, “Past Presentations, Reports and Publications,” *San Francisco Planning Department*, n.d., <http://www.sf-planning.org/index.aspx?page=1678>.

³⁹³ Dean L. Macris, “Memo to Members of The Planning Commission Regarding Consideration of Adoption of a Commission Policy for the Review of Building Permits and Approvals in the Eastern Neighborhoods Prior to the Adoption of the Eastern Neighborhoods Area Plans and Code Amendments,” May 11, 2007, <http://www.sf-planning.org/Modules/ShowDocument.aspx?documentid=3823>; *San Francisco Planning Commission, Resolution No. 16727*, 2004.

- 4/2005 – City consultants publish *Supply/Demand Study for Production, Distribution, and Repair (PDR) in San Francisco's Eastern Neighborhoods*.
- Early 2006 – Department of Planning holds open houses in each neighborhood area.
- Late 2006 – Preliminary Draft policies and plans are presented to the public.
- 8/2006 – San Francisco Board of Supervisors passes a nuisance ordinance which requires landlords to “must disclose the potential for industrial interference, such as noise, odors, dust, and operation of machinery, before leasing adjacent residential property” in order to legally protect pre-existing industrial use from potential conflicts with adjacent residential housing.³⁹⁴
- 1/2007 – The City Board of Supervisors passes a resolution elaborates the policies governing the zoning change, and calling for final studies on the anticipated effects.³⁹⁵
- 3/2007 – Department of Planning and Development publishes assessment of socio-economic impacts of the new zoning.
- 2007 – Department of Planning and Development presents revised draft plans to the public for comment.
- 12/2007 – Department of Planning publishes Public Benefits Eastern Neighborhoods Needs Assessment.
- 4/2008 – New area plans are adopted.
- 5/2008 - Final Eastern Neighborhoods Feasibility Analysis for public benefits plan is published.
- 5/2008 - Planning Department releases *Eastern Neighborhoods Nexus Studies* which establishes the connections between anticipated development impacts and development fees.
- 8/2008 – Planning Commission approves rezoning.
- 12/2008 – Board of Supervisors approves rezoning.

³⁹⁴ *San Francisco Administrative Code: Residential and Industrial Compatibility and Protection Ordinance, ordinance no. 223-06, 2004.*

³⁹⁵ *San Francisco Board of Supervisors, Resolution No. 20-07, 2007.*

Appendix VI: Boulder Steel Yards Tenants

Firm	Type	More Information
Always Power	Electrical engineering	http://www.alwayspower.com/
various	Physical therapists	
various	Psychologists	
Carbon Space	“Coop” office company	http://www.carbonspacecoop.com/index-2.html
Action Marketing Group	Online marketing	http://www.action-marketing-group.com/
Room 214	Social media and word-of-mouth marketing	http://room214.com/about
Electric Rain, Inc	Multimedia software	http://www.erain.com/Company/
Arch 11	Architecture	http://www.arch11.com/contact/directions/
Wishgarden Herbs	Herbal remedy wholesaler	http://www.wishgardenherbs.com/index.php?load=about
AW Impressions	Stone, brick, and tile contractor	
Sergios Roofing Inc	Roofing contractor	
Hammerwell, Inc.	General contractor	http://www.hammerwell.com/
Beaded Impressions	Gemstone component and bead distributor	http://beadedimpressions.com/
Where There Be Dragons	Youth travel	http://www.wheretherebedragons.com/
Michael Robson Photography	Photography	http://michaelrobson.com/
BMC West	Custom doors and windows sales	http://www.bmcwest.com/locations/default.aspx?area=5&location=316
The Highland Group, Inc.	Affordable housing consultancy	http://www.thehighlandgroupinc.com/

Appendix VII: Allowable Uses in Boulder Steel Yards

Use Modules	B1	B2	I1	I2	I3	I4
	Steel Yards: Arterial frontage	Steel Yards: Arterial corner	Adjacent Parcels to North and South	Adjacent Parcels Across RR Tracks	Manufacturing Zone	Steel Yards: Residential and Industrial
Detached dwelling units	A	A	*	U	U	*
Detached dwelling unit with two kitchens	*	*	*	*	*	*
Duplexes	A	A	G	U	U	N
Attached dwellings	A	A	G	U	U	N
Mobile home parks	*	*	*	*	*	*
Townhouses	A	A	G	U	U	N
Live-work	*	*	U	U	U	A
Cooperative housing units	*	*	*	U	U	*
A. If <20% of total units	A	G	G	U	U	N
B. If ≥20% of total units	U	U	U	U	U	U
A. Accessory dwelling unit	*	*	*	*	*	*
B. Owner's accessory unit	*	*	*	*	*	*
C. Limited accessory unit	*	*	*	*	*	*
Caretaker dwelling unit	*	*	A	A	A	A
A. Congregate care facilities	A	C	*	U	U	*
B. Custodial care	U	*	*	U	U	*
C. Group homes	C	C	*	*	*	*
D. Residential care facilities	C	C	*	U	U	*
E. Fraternities, sororities, and dormitories	A	G	*	U	U	*
F. Boarding houses	A	G	*	U	U	*
Home occupation	C	C	C	C	C	C
Transitional housing	C	C	C	C	C	C
Art or craft studio space ≤2,000 square feet	A	A	A	A	*	A
Art or craft studio space >2,001 square feet	A	A	A	A	*	A
Commercial kitchens and catering	*	*	A	A	A	A
Indoor amusement establishment	*	U	*	*	*	*

Use Modules	B1	B2	I1	I2	I3	I4
	Steel Yards: Arterial frontage	Steel Yards: Arterial corner	Adjacent Parcels to North and South	Adjacent Parcels Across RR Tracks	Manufacturing Zone	Steel Yards: Residential and Industrial
Museums	U	A	U	U	U	U
Restaurants (general)	n/a	n/a	C	C	C	C
Taverns (general)	n/a	n/a	*	*	*	*
Restaurants and taverns no larger than 1,000 square feet in floor area, which may have meal service on an outside patio not more than 1/3 the floor area, and which close no later than 11:00 p.m.	n/a	n/a	n/a	n/a	n/a	n/a
Restaurants and taverns no larger than 1,500 square feet in floor area, which may have meal service on an outside patio not more than 1/3 the floor area, and which close no later than 11:00 p.m.	U	A	n/a	n/a	n/a	n/a
Restaurants and taverns over 1,000 square feet in floor area, or which close after 11:00 p.m., or with an outdoor seating area of 300 square feet or more	n/a	n/a	n/a	n/a	n/a	n/a
Restaurants and taverns that are: over 1,500 square feet in floor area, outside of the University Hill general improvement district; over 4,000 square feet within the University Hill general improvement district; or which close after 11:00 p.m.	U	U	n/a	n/a	n/a	n/a
Restaurants and taverns in the University Hill general improvement district that are greater than 1,500 square feet and do not exceed 4,000 square feet in floor area, and which close no later than 11:00 p.m.	n/a	C	n/a	n/a	n/a	n/a
Restaurants and taverns with an outdoor seating area of 300 square feet or more within 500 feet of a residential zoning district	U	U	n/a	n/a	n/a	n/a
Small theater or rehearsal space	*	U	A	A	U	A
Temporary outdoor entertainment	C	C	C	C	C	C
Hostels	U	G	*	U	U	*
Bed and breakfasts	*	*	*	*	*	*

Use Modules	B1	B2	I1	I2	I3	I4
	Steel Yards: Arterial frontage	Steel Yards: Arterial corner	Adjacent Parcels to North and South	Adjacent Parcels Across RR Tracks	Manufacturing Zone	Steel Yards: Residential and Industrial
Motels and hotels	U	A	*	*	*	*
Airports and heliports	*	*	*	*	*	*
Cemeteries	*	*	*	*	*	*
Daycare, home	*	*	*	*	*	*
Daycare center with ≤50 children	A	U	U	U	U	U
Daycare center with >50 children	A	U	U	U	U	U
Day shelter	C	C	C	C	C	C
Emergency shelter	C	C	C	C	C	C
Essential municipal and public utility services	A	A	A	A	A	A
Governmental facilities	A	A	A	A	A	A
Mortuaries and funeral chapels	U	U	*	*	*	*
Nonprofit membership clubs	U	G	*	*	*	*
Overnight shelter	C	C	C	C	C	C
Private elementary, junior, and senior high schools	A	G	*	*	*	*
Public elementary, junior, and senior high schools	A	A	A	A	A	A
Public colleges and universities	A	A	A	A	A	A
Private colleges and universities	U	*	*	U	U	*
Public and private office uses providing social services	A	G	*	U	*	U
Religious assemblies	A	A	*	*	*	*
Adult educational facility with <20,000 square feet of floor area	A	G	A	A	A	A
Adult educational facilities with ≥20,000 square feet or more of floor area	A	G	U	U	U	U
Vocational and trade schools	U	G	A	A	A	A
Data processing facilities	A	G	*	A	A	A
Financial institutions	U	A	*	*	*	*
Hospitals	*	*	*	*	*	*
Medical or dental clinics or offices or addiction recovery facilities	A	A	*	*	*	*
Medical and dental laboratories	A	A	U	A	*	U
Offices, administrative	A	A	*	A	A	*
Offices, professional	A	A	*	*	*	*

Use Modules	B1	B2	I1	I2	I3	I4
	Steel Yards: Arterial frontage	Steel Yards: Arterial corner	Adjacent Parcels to North and South	Adjacent Parcels Across RR Tracks	Manufacturing Zone	Steel Yards: Residential and Industrial
Offices, technical; with <5,000 square feet of floor area	A	A	A	A	A	A
Offices, technical; with >5,000 square feet of floor area	A	U	*	A	A	A
Offices - other	A	A	*	*	*	*
Campgrounds	*	*	U	U	U	*
Outdoor entertainment	U	*	*	*	*	*
Park and recreation uses	A	A	A	A	A	A
Indoor recreational or athletic facilities	A	A	A	U	U	A
Animal hospital or veterinary clinic	U	U	A	A	A	U
Animal kennel	*	U	A	A	U	A
Antennas for wireless telecommunications services	C	C	C	C	C	C
Broadcasting and recording facilities	A	G	A	A	A	A
Business support services <10,000 square feet	*	A	A	U	U	A
Business support services ≥10,000 square feet	*	U	U	U	U	U
Industrial service center	*	*	*	*	*	*
Non-vehicular repair and rental services without outdoor storage	*	*	A	U	*	A
Neighborhood business center	*	*	*	*	*	*
Personal service uses	A	A	*	*	*	*
Accessory sales	C	C	C	C	C	C
Convenience retail sales ≤2,000 square feet	U	A	C	C	*	C
Convenience retail sales >2,000 square feet	U	A	*	C	*	C
Retail fuel sales (not including service stations)	U	C	C	C	*	U
Retail sales ≤5,000 square feet	*	A	*	*	*	*
Retail sales >5,000 square feet but ≤20,000 square feet	*	A	*	*	*	*
Retail sales >20,000 square feet	*	U	*	*	*	*

Use Modules	B1	B2	I1	I2	I3	I4
	Steel Yards: Arterial frontage	Steel Yards: Arterial corner	Adjacent Parcels to North and South	Adjacent Parcels Across RR Tracks	Manufacturing Zone	Steel Yards: Residential and Industrial
Building material sales ≤15,000 square feet of floor area	*	*	A	A	A	A
Building material sales >15,000 square feet of floor area	*	*	U	U	U	U
Temporary sales	C	C	C	C	C	C
Automobile parking lots, garages, or car pool lots as a principal use	U	U	A	A	A	U
Car washes	*	*	*	*	*	*
Drive-thru uses	*	*	*	*	*	*
Fuel service stations or retail fuel sales	U	U	C	C	*	U
Sales and rental of vehicles	*	*	A	A	*	*
Sales and rental of vehicles within 500 feet of a residential use module	*	*	C	C	*	*
Service of vehicles with no outdoor storage	*	U	A	A	A	A
Service of vehicles with limited outdoor storage	*	*	A	A	*	A
Building and landscaping contractors	*	*	A	A	A	A
Cleaning and laundry plants	*	*	A	A	A	A
Cold storage lockers	*	*	A	A	A	A
Computer design and development facilities	A	G	*	A	A	A
Equipment repair and rental with outdoor storage	*	*	A	A	A	A
Lumber yards	*	*	A	A	*	*
Manufacturing uses ≤15,000 square feet	*	*	A	A	A	A
Manufacturing uses >15,000 square feet	*	*	U	A	A	A
Manufacturing uses with potential off-site impacts	*	*	*	U	U	*
Outdoor storage	*	*	A	U	A	*
Outdoor storage of merchandise	*	*	C	C	C	C
Printers and binders	*	*	A	A	A	A
Recycling centers	*	*	U	U	U	U
Recycling collection facilities -	*	*	U	U	U	U

Use Modules	B1	B2	I1	I2	I3	I4
	Steel Yards: Arterial frontage	Steel Yards: Arterial corner	Adjacent Parcels to North and South	Adjacent Parcels Across RR Tracks	Manufacturing Zone	Steel Yards: Residential and Industrial
large						
Recycling collection facilities - small	*	C	C	C	C	C
Recycling processing facilities	*	*	U	U	U	*
Self-service storage facilities	*	*	A	U	*	*
Telecommunications use	A	G	*	A	A	A
Warehouse or distributions facilities	*	*	A	A	A	A
Wholesale business	*	*	A	A	A	A
Open space, grazing and pastures	*	*	*	*	*	*
Crop production	*	*	*	*	*	*
Mining industries	*	*	*	*	U	*
Firewood operations	*	*	A	A	A	*
Greenhouse and plant nurseries	*	*	A	A	A	A
Accessory buildings and uses	A	A	A	A	A	A

A: Allowed use.

C: Conditional use.

*: Use prohibited.

U: Use review.

G: Allowed use provided that it is located above or below the ground floor.

M: Allowed use provided at least 50% of the floor area is for residential use and the nonresidential use is less than 7,000 square feet per building, otherwise use review.

N: Allowed use provided at least 50% of the floor area is for nonresidential use, otherwise by use review.

n/a: Not applicable; more specific use applications apply.