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Public Financing Strategies for Green Business Improvements

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A comprehensive project submitted in partial satisfaction of the requirements for the degree Master of Urban and Regional Planning

Client: Los Angeles County Department of Regional Planning
Faculty Advisor: Christopher Tilly

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Disclaimer

This report was prepared in partial fulfillment of the requirements for the Master in Urban and Regional Planning degree in the Department of Urban Planning at the University of California, Los Angeles (UCLA). It was prepared at the direction of the Department and of the Los Angeles County Department of Regional Planning as a planning client. The views expressed herein are entirely the author's and not necessarily those of the Department of Urban Planning, the UCLA Luskin School of Public Affairs, UCLA as a whole, or the client.

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Executive Summary

In accordance with a 2015 Los Angeles County Board of Supervisors motion promoting equity, sustainability, and affordable housing in the region, the Department of Regional Planning (DRP) initiated the Green Zones Program. Through land use policy, community engagement, and pollution prevention strategies, the program addresses environmental justice issues in communities disproportionately burdened by environmental impacts. As part of this strategy, DRP will establish new standards for recycling and solid waste uses countywide. DRP also seeks to make zoning amendments requiring existing, industrial businesses in eleven unincorporated communities to make green, on-site improvements. These amendments are the focus of this report.

The amendments promote industrial greening, reduce the risk of environmental contamination, and shield residents from business operations. However, these changes also impose direct and indirect costs on existing businesses, many of which have little capital. This research sought to inform the development of a business incentive and support program for small and medium-sized businesses located in disadvantaged communities across Los Angeles County. The question driving this project was:

What public funding methods and strategies can best help small, industrial businesses make green, on-site improvements and comply with Los Angeles County’s forthcoming Green Zones regulations?

This project examined public financing strategies and best practices that can offset the costs the proposed zoning code amendments impose on small and medium-sized industrial businesses. The purpose of this research was to support the creation of a comprehensive and effective funding program for industrial businesses in unincorporated Los Angeles County that are subject to the Green Zones ordinance.

Finally, this research was initiated and conducted prior to the global coronavirus (COVID-19) pandemic. During this economic and public health crisis, small businesses have many worries beyond greening their sites. Similarly, Los Angeles County—like all levels of government—must deal with countless issues that may take precedence over setting up a small business funding program. This research looks beyond the current crisis. The recommendations in this report thus focus on long-term improvements that will be relevant beyond just the present moment.

Background

The Green Zones Program aims to enhance public health and land use compatibility in eleven communities disproportionately burdened by environmental impacts. As part of

this effort, DRP made zoning code amendments for the eleven Green Zones communities. The resulting Green Zones Ordinance (GZO) applies to industrial, recycling, and vehicle-related uses in the Green Zones communities that are located within 500 feet of a sensitive use. Within this 500-foot buffer, industrial uses are required to comply with a number of standards, including the following:

- Solid walls along street frontage or lots adjoining sensitive uses
- Landscaping along street frontage using drought-resistant trees and plants
- Enclosed buildings for all manufacturing or repair work
- Paving of all parking, circulation, or storage areas with impervious materials
- Business identification signs visible from the public right-of-way

Depending on a business's permit type and proximity to sensitive uses, businesses will generally have between three and ten years to comply with the requirements. Communities drove many of these changes, and are supportive of the GZO as a whole. The eleven communities subject to the GZO are as followed:

- | | |
|-------------------------|------------------------------------|
| • Avocado Heights | • West Athens - Westmont |
| • East Los Angeles | • West Carson |
| • East Rancho Dominguez | • West Rancho Dominguez - Victoria |
| • Florence-Firestone | • West Whittier - Los Nietos |
| • South San Jose Hills | • Willowbrook |
| • Walnut Park | |

Literature Review

This research relates to scholarship on two distinct subjects: greening industrial areas and small business financing. These two topics correspond with the goals and the method, respectively, of this project's contribution to the Green Zones Program. While there is a significant amount of scholarly research on each of these topics, there is relatively little work done at their intersection. In addition, there is little academic or applied research on the specific type of industrial greening Los Angeles County promotes through the Green Zones Program. This review thus surveys the literature surrounding brownfield greening and remediation. Of course, not all businesses impacted by the GZO will be located on brownfields. Still, research on the need for, and consequences of, greening will apply.

The siting of brownfields and other environmental hazards is closely tied to race and class. Minority and low-income communities are much more likely to be exposed to environmental risks. While there are extensive ecological, economic, and community benefits associated with industrial cleanup, there are also concerns that greening may drive gentrification in vulnerable communities. However, the literature on environmental gentrification is conflicted. More empirical research is needed to determine if, where, and under what circumstances environmental cleanup causes gentrification.

Small businesses are a major part of the U.S. economy. Despite their prevalence, small businesses often face challenges in securing the financing they need. Racial discrimination in lending is a major barrier for many small business owners. When minority business enterprises get financing, they tend to pay higher rates and receive smaller loan amounts, hindering business growth. Public policy, particularly government loan guarantees, can overcome this barrier. Neither traditional banks nor microenterprise development organizations are particularly strong at supporting small businesses. Small businesses also face numerous other gaps that impact long-term sustainability.

This research fits into both of these subject areas. It studied how public agencies can incentivize and accelerate greening in industrial areas while supporting the existing industrial character through small business financing strategies. The broad goal is to address the myriad environmental justice issues facing communities in unincorporated Los Angeles County while ensuring that existing residents and businesses benefit from greening. The Green Zones Program has the potential to transform perceptions of industrial corridors as polluted places incompatible with residential uses, and show that greening and industrial job retention can be complementary goals.

Data & Methods

This research proceeded in three distinct phases. First, I estimated the full costs of the proposed regulation on affected businesses. Second, I surveyed local, state, and federal funding programs to identify gaps where new County programs can have the most impact. I interviewed staff involved with each program to find out more about how the programs worked and about best practices more generally. Lastly, I employed a case study approach to determine effective strategies and best practices for financing green business improvements, especially in industrial zones. I looked at a representative sample of financing programs that support green, on-site improvements on private, commercial properties. The four case studies are as followed:

- City of Los Angeles, CA – Clean Up Green Up
- City of Philadelphia, PA – Greened Acre Retrofit Program
- Michigan Saves (statewide business financing program)
- City of National City, CA – Various Programs

Key Findings

Zoning Analysis & Cost Estimation

DRP estimates the GZO will impact around 2,400 businesses across the eleven communities. The typical business affected by the GZO is compliant on two of the above

five regulations. Sites are generally paved and include enclosed structures, but lack solid perimeter walls, landscaping, and identification signs. For a baseline industrial site (0.87 acres in size, with 300 feet of street frontage), these improvements will cost around \$40,000.

Figure 1. Typical Costs for Baseline Industrial Site

Improvement	Quantity	Unit	Cost/Unit	Total Cost
Solid Wall	270	Linear Feet	\$103	\$27,920
Street Tree	13	Trees	\$63	\$820
Landscaping	1,350	Square Feet	\$8	\$10,800
ID Sign	1	Signs	\$100	\$100
Total				\$39,640

Paying for Green Business Improvements

For any business support program, Los Angeles County must be able to effectively connect businesses to funds. Two popular strategies available to local governments are revolving loan funds (RLFs) and credit enhancements. Given the structure of the GZO, the latter is a better mechanism for Los Angeles County. In particular, a loan loss reserve (LLR) would work well. With an initial pool of funds, an LLR may be more effective than an RLF. While a County-backed LLR would require preexisting relationships with financial institutions, it could be a good method to get low-cost financing to small businesses. Interviews with professional staff working on local funding programs raised several themes:

Small businesses face several challenges and need support

The current business environment is difficult for small businesses. Between rising rents, an escalating minimum wage, and a potential split tax roll, small businesses face a lot of challenges. At the same time, many small business owners struggle with business operations. Those that need the most support are least likely to have access to traditional forms of credit.

Clear communication and simple processes are key

For small businesses, many programs and policies are difficult to navigate, or are overly technical. Some may have onerous application requirements. In addition, many small business concerns involve complex topics that are poorly communicated by staff.

Many government agencies lack financial expertise

Financial and lending expertise is often unrelated to planning or scientific knowledge. Many departments that issue loans are not as well versed in lending as in other aspects of their work. One method to get around this issue is to work with third party lenders.

Funding programs tend not to support that many businesses

While Los Angeles County has several different funding programs, these programs only support a small number of businesses. Many programs must deal with funding limitations and often have stringent requirements that discourage applicants. As a result, these programs tend to support fewer businesses, but with larger amounts. With the Green Zones program, it may make sense to disburse smaller amounts to a greater number of businesses.

Prevailing Wage requirements may turn applicants away

Numerous interviewees noted the difficulties caused by prevailing wage requirements. The additional cost means the County is no longer a competitive lender, even if other loan terms are more favorable than on the commercial capital market. As a result, applicants tend to avoid using certain loan programs for construction.

Staff capacity and funding are ongoing challenges

Staffing and funding limitations were the two most common challenges mentioned during interviews. Funding programs are particularly dependant on a favorable economic and political climate. Fees are one way to maintain a relatively consistent funding stream, but they are unpopular among businesses.

Helping businesses make on-site, green improvements is not a priority

There are few resources available to small businesses hoping to green their sites and practices. Existing programs are not really set up to cover the improvements required by the GZO. Businesses have some methods to fund GZO improvements, but few resources exist to lower the cost of these improvements.

Small Business Support Programs

City of Los Angeles, CA – Clean Up Green Up

The City of Los Angeles passed Clean Up Green Up (CUGU) without creating any sort of business incentive program. The lack of a dedicated funding program made it harder for businesses—especially small businesses—to pay for the necessary improvements. CUGU also demonstrates the necessity of regulatory enforcement. With a multi-pronged policy like CUGU, simple oversight often failed to capture the full extent of business noncompliance. Finally, CUGU shows the importance and power of community organizing. The Green Zones Program would benefit from the involvement of community members and community-based organizations, at all stages of program rollout: policy brainstorming, implementation, monitoring, and enforcement.

City of Philadelphia, PA – Greened Acre Retrofit Program

Philadelphia's Greened Acre Retrofit Program (GARP) demonstrates that project aggregation can create significant cost savings. Requiring applicants to bundle multiple projects together allows the Philadelphia Water Department to select those that achieve the best result most efficiently. A key aspect of GARP is that contractors are encouraged to

apply. As a result, those most knowledgeable about the construction process and its costs are that same people that ultimately apply. As with many other programs, funding for GARP is uncertain. Since the money comes from the general fund, it needs to be negotiated on an annual basis. Uncertainty surrounding long-term funding is not unique to GARP or Philadelphia; all municipalities—including Los Angeles County—must deal with limited resources to an extent.

Michigan Saves

Michigan Saves is a highly effective program that demonstrates the value of credit enhancements. Through an LLR, Michigan Saves helps facilitate thousands of residential and commercial loans at below market rates. While LLRs do not need to be structured as a public-private partnership, this organization makes a lot of sense for Michigan Saves. This model lets each partner focus on its strengths, while saving borrowers a lot of headaches. Michigan Saves also demonstrates the value of simplicity. Often, borrowers can get approved within a day, since most terms are handled on the front end. It is likely that this straightforward process is a major reason for why Michigan Saves is so popular. Not everything about Michigan Saves can be transferred to Los Angeles County. Still, the County can certainly take lessons from the program on administrative simplicity, consumer focus, and fiscal sustainability.

City of National City, CA – Various Programs

The experience of National City demonstrates the importance of enforcement. A 2006 ordinance gave the City the power to relocate polluting industrial businesses. However, the City barely used this authority, and neighborhoods like Old Town continued to face disproportionate pollution burdens. With the GZO, Los Angeles County has an effective enforcement mechanism. The broader success of the GZO may depend on how willing the County is to enforce the letter of the ordinance. National City also shows that even well-funded municipalities run into barriers, particularly with staffing.

Recommendations

Research from all three distinct parts informed seven recommendations for Los Angeles County. While all the recommendations are tailored to the County and its Green Zones Program, many are generalizable across geographies and programs.

Facilitate inter-agency cooperation & commit to regulatory enforcement

It is key that Los Angeles County commits to enforcing the Green Zones Ordinance. A lack of enforcement may weaken compliant businesses' efforts to reduce their impact on surrounding communities. Inter-agency cooperation must be a key part of regulatory enforcement. Community-based organizations and community members are likely to be a great source of on-the-ground information about ongoing business operations.

Partner with communities on alternative compliance methods

Los Angeles County should collaborate with community organizations and businesses on how to involve communities. For example, businesses could allow community groups to adopt and maintain their landscape buffer and street trees. In these cases, some sort of agreement between businesses and community groups could save businesses money, create a new community amenity, and still fulfill the requirements set forth in the GZO.

Make the application process straightforward and open for applicants

Los Angeles County should distill information about the Green Zones Ordinance and any associated funding programs into clear, essential points. Similarly, the County should structure its funding programs to be easy to understand, and applications simple to submit. Many existing programs have onerous requirements and are difficult for small businesses to navigate.

Consider how market & regulatory conditions affect demand for funding

Even a simple, low-interest loan program may experience low take-up if external factors diminish the benefits of financing. The County should think through the various conditions affecting local funding programs, and create a program that is sensitive to current market and regulatory conditions and responds to small businesses' needs.

Work with third party lenders to establish favorable loan terms

Los Angeles County should consider working with third party lenders to issue loans. The public-private partnership (PPP) structure allows each party to focus on its strengths. The County can employ credit enhancements to negotiate favorable loan terms for prospective borrowers. A loan loss reserve model fits the Green Zones Program particularly well.

Promote aggregation to reduce project costs

The Green Zones Ordinance requires many businesses—many of which are near each other—to make very similar modifications at the same time. The ordinance thus lends itself well to project aggregation. Contractors could apply for funding on the behalf of business owners, and the County can structure the program to promote good, green jobs. Meanwhile, bundling multiple projects is likely to achieve cost savings for businesses.

Look into organizing an EIFD to fund program goals

For a more long-term strategy, Los Angeles County should study the feasibility of creating an Enhanced Infrastructure Financing District (EIFD). Los Angeles County could create an EIFD for some (or all) of the Green Zones communities, or expand its scope. An EIFD could help small businesses clean up their practices, while also supporting the broader Green Zones Program goals, such as sustainability and affordable housing.

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Introduction

In 2015, the Los Angeles County Board of Supervisors passed a motion initiating a robust work program to promote equity, sustainability, and affordable housing in the region. The Green Zones Program emerged from this motion. Through land use policy, community engagement, and pollution prevention strategies, the program addresses environmental justice issues in unincorporated communities disproportionately burdened by environmental impacts. As part of this strategy, the Los Angeles County Department of Regional Planning will make a series of changes to the zoning code, such as establishing new standards for recycling and solid waste uses, or prohibiting certain types of businesses from operating near sensitive uses. The Department also seeks to make zoning code amendments that will require existing, industrial businesses make green, on-site improvements. These amendments are the focus of this report. While an important aspect of the broader Green Zones Program, they do not constitute the full extent of that program.

This project examines public financing strategies and best practices that Los Angeles County can use to mitigate the costs the proposed ordinance imposes on small and medium-sized industrial businesses. Unlike many other environmental regulations, the proposed ordinance does not exempt existing businesses from the new regulations. This accelerates the greening process in industrial zones, but also imposes a cost on existing firms, many of which have little capital. During community outreach, stakeholders suggested that the County develop a resource program to help businesses make the required changes while preserving livelihoods. This research project seeks to inform the development of a comprehensive funding program for industrial businesses in unincorporated Los Angeles County subject to the Green Zones ordinance. The central question driving this research is as follows:

What public funding methods and strategies can best help small, industrial businesses make green, on-site improvements and comply with Los Angeles County’s forthcoming Green Zones regulations?

Client & Purpose

This research is done on the behalf of the Los Angeles County Department of Regional Planning (DRP). DRP handles all land use planning functions for unincorporated areas in the county, including long range planning, zoning enforcement, and environmental review. DRP also oversees all aspects of the Green Zones Program, which forms the basis of this research project. At 4,083 square miles, Los Angeles County is geographically one of the largest counties in the country, and nearly two-thirds of the County—2,653 square miles—is unincorporated. Approximately one million people reside in unincorporated

parts of the county, ranging from dense urban areas like East Los Angeles, to small rural communities in the Antelope Valley.

The purpose of this research is to develop a business incentive and support program for small and medium-sized businesses located in disadvantaged communities across Los Angeles County. The project estimates the full costs of the proposed regulation on these businesses. It will survey local, state, and federal funding programs to identify gaps where new County programs can have the most impact. Lastly, it looks at case studies to determine effective strategies and best practices for financing green business improvements, especially in industrial corridors. Overall, the project informs the creation of a comprehensive program that may consist of grants, loans and credit enhancements, and other forms of financial and in-kind support that help businesses comply with the new environmental regulations.

This research was initiated and conducted prior to the spread of the coronavirus (COVID-19) pandemic. During this economic and public health crisis, small businesses have many worries beyond greening their sites. Likely, the improvements required by the GZO will not be a priority for a while. Similarly, Los Angeles County—like all levels of government—must deal with countless issues that may take precedence over setting up a new funding small business funding program. This research looks beyond the current crisis. Greening industrial areas is a long-term goal for the County. The recommendations in this report thus focus on long-term improvements that will be relevant beyond just the present moment.

While the ultimate recommendations are tailored for Los Angeles County, this research may be useful to many different local and state governments looking to implement their own financing program. More importantly, it seeks to provide an actionable program that—in conjunction with the rest of the Green Zones program—will lead to environmental improvements while also supporting small business development in the County’s most environmentally burdened and economically disadvantaged communities. Overall, it has the potential to transform perceptions of industrial corridors as polluted places incompatible with residential uses. The overarching goal of this project is to show that greening and retaining industrial jobs can be complementary goals.

The remainder of this section provides background information on the County’s Green Zones Program and summarizes the forthcoming land use regulations proposed the Department of Regional Planning. Section 2 surveys the relevant literature on industrial greening and small business financing. Section 3 outlines the methodology used to analyze the impacts of the proposed regulations; identify the funding gaps and opportunities present to businesses in unincorporated Los Angeles County; and draw lessons from case studies of four existing funding programs. Section 4 presents the research findings. Section 5 concludes, offering recommendations for the client.

Green Zones Program

In December 2015, the Los Angeles County Board of Supervisors declared its intent to implement the County General Plan “in a manner that promotes sustainable, healthy, and well-designed environments that enhance the quality of life and public well-being for all residents in the unincorporated areas” (Solis & Ridley-Thomas, 2015, December 8). To further this goal, the Board instructed the Directors of County departments to initiate a robust and multi-faceted Equitable Development Work Program. Among other tasks, this program instructed DRP to “produce a map of contaminated sites, such as Superfund sites, brownfields, and toxic ‘hotspots’ in the unincorporated areas, and provide recommendations on targeted land use policies that can be used to improve the health and quality of life for surrounding residents” (Solis & Ridley-Thomas, 2015). The Green Zones Program emerged out of this directive.

The Green Zones Program aims to enhance public health and land use compatibility in communities disproportionately burdened by environmental impacts. To do so, the program employs three major strategies to promote environmental justice: land use policy, to set regulations on polluting sources; community engagement, to document environmental hazards and inform the aforementioned regulations; and prevention and mitigation strategies, to address existing environmental impacts and to prevent future ones. In addition, the Green Zones Program led to the creation of an Environmental Justice Screening Map. This mapping tool analyzes environmental impacts using recommendations from experts in the field and data gathered in part by community members. The Green Zones Program focuses on eleven communities:

- Avocado Heights
- East Los Angeles
- East Rancho Dominguez
- Florence-Firestone
- South San Jose Hills
- Walnut Park
- West Athens - Westmont
- West Carson
- West Rancho Dominguez - Victoria
- West Whittier - Los Nietos
- Willowbrook

These communities face some of the highest environmental burdens in Los Angeles County and California. Many are also vulnerable based on a number of key socioeconomic variables. CalEPA incorporates both environmental impacts and socioeconomic factors into its model for calculating overall risk from cumulative impacts. According to this CalEnviroScreen 3.0 model, the median Green Zones census tract is in the 87th percentile statewide for pollution burden, 88th percentile for population characteristics vulnerability, and 93rd percentile for overall risks. This vulnerability holds at both the census tract and community level. On average, Green Zones communities have a lower median household income, less educational attainment, and a greater share of residents living below the poverty line compared to Los Angeles County as a whole (Figure 1.1). They also have a greater share of non-white residents (Figure 1.2).

*Figure 1.1. Green Zones Communities - Socioeconomic Status **

	Population	Median HH Income (\$)	Below Poverty Line (%)	Less than HS Degree (%)
Avocado Heights	16,213	70,034	10.6	28.3
East Los Angeles	123,905	42,544	22.4	50.4
East Rancho Dominguez	16,027	49,614	21.6	46.5
Florence-Graham	63,821	36,289	30.2	56.5
South San Jose Hills	20,423	61,671	16.6	42.8
Walnut Park	15,915	47,857	19.3	52.9
West Athens	8,746	45,110	19.7	24.2
West Carson	22,260	68,496	8.9	16.6
West Rancho Dominguez	23,537	55,887	20.5	30.7
West Whittier-Los Nietos	27,002	67,980	9.0	27.9
Westmont	33,532	30,864	32.2	31.9
Willowbrook	22,654	40,279	25.0	47.6
Los Angeles County	10,105,722	61,015	17.0	21.8

Data: US Census Bureau, 2017 American Community Survey 5-Year Estimates, Tables S1903, S1701, S1501

Figure 1.2. Green Zones Communities - Demographics

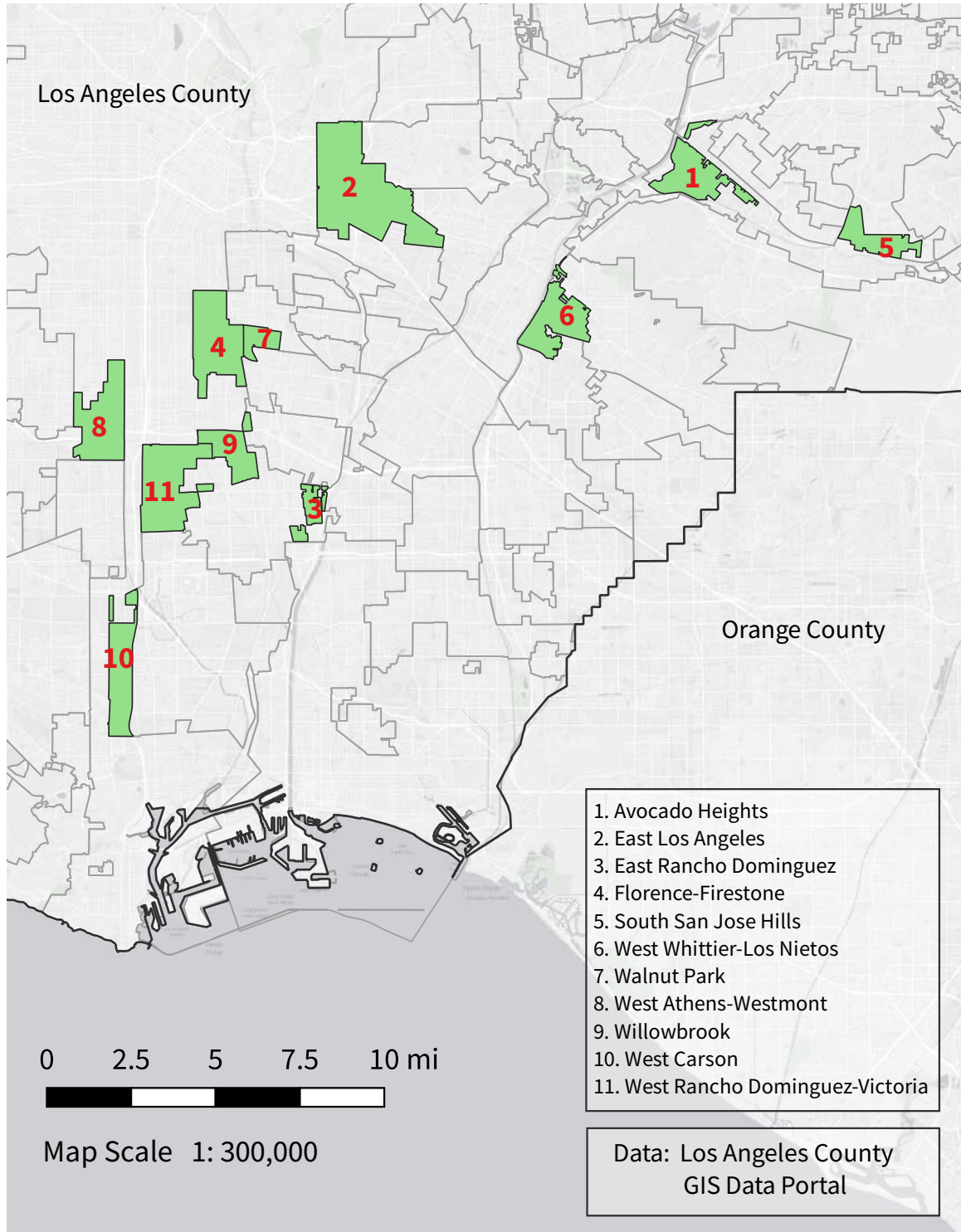
	Non-Hispanic White (%)	Black (%)	Asian (%)	Hispanic or Latino (%)
Avocado Heights	6.1	0.4	10.6	82.9
East Los Angeles	1.8	0.4	1.2	96.4
East Rancho Dominguez	1.2	14.0	0.3	83.1
Florence-Graham	0.5	7.5	0.3	91.3
South San Jose Hills	2.6	1.6	10.2	85.3
Walnut Park	1.4	0.0	0.7	97.2
West Athens	1.0	53.5	0.3	43.4
West Carson	16.7	11.3	32.1	37.1
West Rancho Dominguez	1.3	46.1	1.4	50.1
West Whittier-Los Nietos	7.7	1.0	1.1	89.0
Westmont	1.7	45.8	0.2	51.3
Willowbrook	1.1	23.3	0.2	73.7
Los Angeles County	26.5	7.9	14.3	48.4

Data: US Census Bureau, 2017 American Community Survey 5-Year Estimates, Tables B03002, B02001

* The American Community Survey (ACS) divides unincorporated Los Angeles County into several "Census Designated Places" (CDPs). However, not all CDPs align exactly with DRP's defined communities (e.g. The U.S. Census Bureau divides West Athens and Westmont into separate areas). Figure 1.1 and 1.2 display data for the twelve CDPs that roughly correspond to the eleven Green Zones communities. These data are for illustrative purposes only.

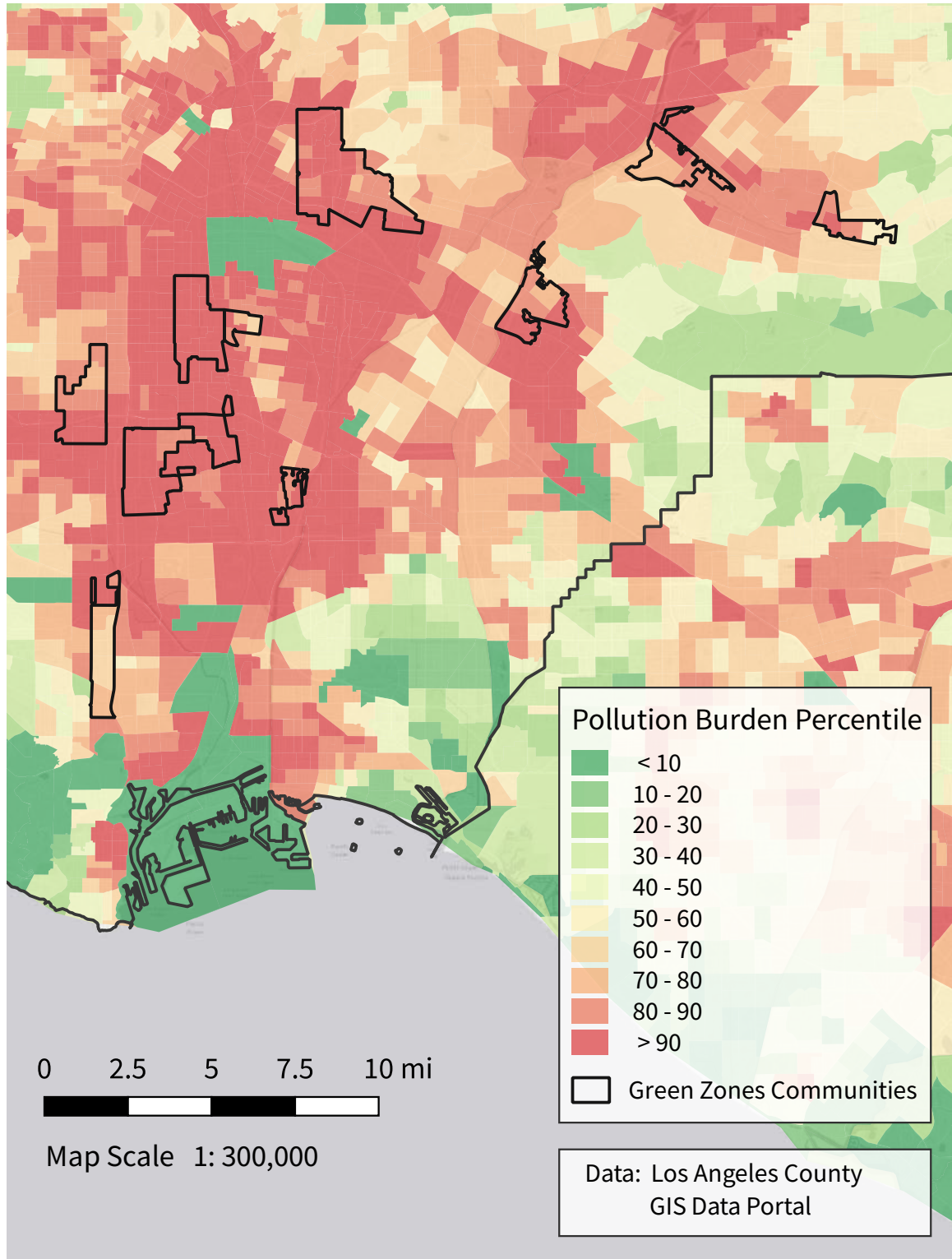
Green Zones Communities

Los Angeles County



CalEnviroScreen 3.0

Environmental Burdens by Census Tract



Green Zones Ordinance

Land use policy is a key aspect of the Green Zones Program. DRP intends to make zoning code amendments to enhance public health and land use compatibility in the eleven Green Zones communities, collectively known as the Green Zones District. The forthcoming Green Zones Ordinance (GZO) intends to promote environmental justice in communities that have been disproportionately burdened by pollution from industrial uses.

Prior to drafting this ordinance, DRP held a series of groundtruthing meetings in Florence-Firestone, Walnut Park, and East Los Angeles in which community members identified environmental hazards. In the final report-back meeting, residents provided input on potential land use policies that DRP could implement. Community members emphasized the importance of landscaping, setbacks, and buffers from sensitive uses (DRP, 2019, August 11). Others suggested requirements like solid walls around sites, enclosed structures around operations, and restrictions on vehicular traffic and operating hours. Many participants also highlighted the need for strong and effective enforcement, and faster implementation. DRP used this feedback to draft the GZO.

The GZO applies to industrial, recycling, and vehicle-related uses in the Green Zones District that are located within 500 feet of a sensitive use. The term “sensitive use” encompasses a “range of land uses where individuals most susceptible to poor air quality and toxins, or other environmental impacts are most likely to spend time” (Zoning Code Draft, 2019, December 31). The list of sensitive uses includes—among other land uses—residences, schools, parks, and hospitals. Within this 500-foot buffer, the GZO prohibits certain heavy industrial uses, such as forging works, cement manufacturers, and smelters. Other industrial uses are required to comply with a number of standards, including the following:

- Solid walls along street frontage or lots adjoining sensitive uses
- Landscaping along street frontage using drought-resistant trees and plants
- Enclosed buildings for all manufacturing, repair, or handling of hazardous materials
- Paving of all parking, circulation, or storage areas with impervious materials
- Business identification signs visible from the public right-of-way
- Driveways and loading/unloading areas placed as far from sensitive uses as feasible
- Operating hours that do not disrupt nearby residents

Depending on a business’s permit type and proximity to sensitive uses, businesses will generally have between three and ten years to comply with the requirements. A more detailed examination of GZO development standards and their associated costs is provided in the “Zoning Analysis & Cost Estimation” chapter. For more information on how the zoning ordinance was reviewed, refer to the chapter on “Data and Methods.”

Literature Review

This literature review surveys the scholarship on two distinct subjects: greening industrial areas and small business financing. These two topics correspond with the goals and the method, respectively, of this project's contribution to the Green Zones Program. While there is a significant amount of scholarly research on each of these topics, there is relatively little work done at the intersection of the two. The conclusion lays out how this research project contributes to both areas.

Key Terms

Brownfield. The Los Angeles County Department of Public Health (2019) defines brownfield as “an underused or abandoned industrial or commercial property.” This is a relatively poor definition; there is no mention of pollution of any kind—a puzzling choice for a public health agency—and it excludes active properties. Far better is U.S. EPA's, as set forth in the Small Business Liability Relief and Brownfields Revitalization Act of 2002, which states: “A brownfield is a property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant” (US EPA, 2019, October 4). The EPA is a trusted source of environmental information and definitions, and many other public bodies have adopted the same standard for a “brownfield.” However, to clear up any potential ambiguities in this definition, I take guidance from Yount (2003) who argues that the presence or potential presence of contamination should be the first consideration. Hence, I use EPA's definition, but I take it to also include active properties with potential contamination, even if those properties are not slated for expansion, redevelopment, or reuse.

Greening. Scholars and practitioners use the term “greening” to mean many different things. Some argue that greening is “the creation of open spaces within a city's built up area” (De Sousa, 2004, p.581). However, this definition is overly focused on park space, and overlooks the smaller, green interventions this research covers. An alternative definition of greening, and the one I rely on, includes “public landscaping and urban forestry projects that create mutually beneficial relationships between city dwellers and their environments” (Capital Roots, n.d). This encompasses several of the proposed Green Zones regulations, including landscape buffers and street trees, that do not create open space, but still offer ecological and community benefits to nearby residents. For the purposes of this research project, I also include the other Green Zones regulations (e.g. covered structures, paving, etc.). While these regulations may not include landscaping, their overall purpose is to protect the health, safety, and welfare of people, which corresponds well to the second part of the above definition.

Small Business. In the United States, the concept of a small business is very expansive. The US Code of Federal Regulations uses NAICS codes to set small business limits based on either number of employees or revenue (CFR §121.201). For example, Figure 2.1 shows

small business size standards—as defined in in the US Code of Federal Regulations—for a sample of industrial sectors.

Figure 2.1. Small Business Standards, Selected Industries

NAICS Code	NAICS US Industry Title	Small Business Standard
238160	Roofing Contractors	< \$16.5 million in revenue
311513	Cheese Manufacturing	< 1,250 employees
326211	Tire Manufacturing	< 1,500 employees
327310	Cement Manufacturing	< 1,000 employees
332322	Sheet Metal Work Manufacturing	< 500 employees
484110	General Freight Trucking, Local	< \$30.0 million in revenue
811111	General Automotive Repair	< \$8.0 million in revenue

Source: U.S. CFR §121.201

While precise, these sector-based standards are arguably too expansive. Under the definitions set forth in CFR § 121.201, 99.9 percent of U.S. businesses are “small businesses” (SBA, 2018). When nearly every business in the country is considered a “small business,” the term loses its utility. Furthermore, a definition that varies by sector makes it difficult to compare small businesses across sectors. The European Commission—the executive branch for the European Union—similarly sets size standards for businesses in Europe, but its definition is both simpler and narrower. According to the European Commission (2015), “small and medium-sized enterprises” generally employ fewer than 250 people and have an annual turnover of fewer than €50 million (there are also additional restrictions based on ownership structure and profits). To avoid potential complications stemming from regional economic differences and exchange rates, I use only the European Commission’s employee standard. I thus define a “small business” as one having fewer than 50 employees, and a “medium-sized business” as one having between 50 and 249 employees. Fortunately, when the U.S. Census Bureau collects business data, it includes size categories that correspond directly to these definitions. This definition is still quite inclusive; 95.13 percent of businesses in Los Angeles County, and 94.50 percent of those nationwide, are “small” or “medium-sized” businesses.

Industrial Greening

There is very little academic or applied research on the specific type of industrial greening Los Angeles County promotes with through the Green Zones Program. As a result, this section focuses heavily on the literature surrounding brownfield greening and remediation. Of course, not all businesses impacted by the GZO will be located on brownfields. Still, the research on the need for and consequences of greening will apply.

Brownfields are properties, “the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or

contaminant” (US EPA, 2019, October 4). They are thought to reduce property values and often negatively impact public health. There are over 425,000 brownfield sites in the United States; together, they cover roughly five million acres of land (Kotval-K, 2016; U.S. Environmental Protection Agency, 2016). Brownfields are located both inside and outside cities, but most are concentrated in older industrial districts in urban areas. Since the 1990s, many local governments have prioritized brownfield cleanup and revitalization, including industrial greening (De Sousa, 2004).

There are multiple benefits related to brownfield cleanup, and the greening of industrial areas more generally. Planners identify a range of economic benefits: increased property tax revenue; regeneration of local industry and tourism; reduction of sprawl; and green infrastructure provision (De Sousa, 2004). Industrial greening is also associated with many community-oriented benefits, such as scenic beauty, creation of park space or other community assets, blight removal, and increased community pride (De Sousa, 2014). When accounting for these disparate benefits, the overall social benefit of industrial greening is often sufficient to justify significant public investment (Kotval-K, 2016).

Despite the myriad benefits of industrial greening, barriers to successful implementation are prevalent. Above all, a lack of financial resources—public and private—hinders industrial greening (De Sousa, 2014). The difficulty of land acquisition and a lack of trust among stakeholders also pose challenges to site cleanup and revitalization. Furthermore, many developers believe that greenfield development is more profitable than brownfield redevelopment (Kotval-K, 2016). These barriers often necessitate public sector involvement in brownfield cleanup projects. Green (2018) finds a majority (81.5 percent) of completed brownfield cleanup and redevelopment projects involved public and private collaboration. Alberini, et al. (2015) observe that financial incentives—subsidies, tax breaks, liability relief, and reductions in regulatory burden—are effective in promoting the environmental remediation of brownfields. Such incentives alone are rarely sufficient in stimulating brownfield cleanup (Green, 2018). However, they can be an important part of a broader public-sector strategy that considers infrastructure availability and community needs (De Sousa, 2014).

Environmental Justice

Industrial greening often carries important equity considerations. It is well established that certain groups—particularly low-income people and racial minorities—experience disproportionate exposure to environmental burdens. In an extensive literature review on this issue, Mohai, Pellow, and Roberts (2009) write: “hundreds of studies conclude that, in general, ethnic minorities, indigenous persons, people of color, and low-income communities confront a higher burden of environmental exposure from air, water, and soil pollution from industrialization, militarization, and consumer practices” (p. 406). For example, Wolverton (2009) finds that industrial plants on the Toxic Release Inventory (TRI) list in Texas are much more likely to be located in areas with greater minority and low-income populations. This disproportionate exposure also extends to brownfields. Such sites are more likely to be located in both predominately minority and low-income

communities (Eckerd & Keeler, 2012). The broader phenomenon is often referred to as environmental injustice, environmental inequality, or environmental racism.

The majority of studies on environmental hazards and disamenities find that industrial siting is highly correlated with race; however, there is disagreement about whether this is driven more by market dynamics or racial discrimination (Mohai et al., 2009). In the former view industry chooses to locate in a certain community because land is cheap, thereby reducing costs. While not intentionally discriminating against people of color, because racial minorities are disproportionately low-income and more likely to live in places where housing is less costly, industry ends up locating in communities with a larger percentage of racial minorities. Meanwhile, in the latter view industry locates in communities of color because of historic and ongoing systemic racial discrimination.

Explicit prejudice may be one explanatory factor, but so too are historic, racist policy decisions, such as housing segregation and zoning, that affect present-day land use patterns and result in environmental inequality. Pulido, Sidawi, and Vos (1996) argue that these two sets of factors are inseparable. Because the process of urban and industrial development is highly racialized, individual siting decisions cannot be understood separate from race and class. Instead, the authors argue the environmental racism should be thought of as a “process” in which contemporary inequalities are part of a broader pattern of racism and discrimination (Pulido et al., 1996, p. 433).

There is a similar debate on whether minority and low-income populations follow environmental hazards, or vice-versa. The “move-in hypothesis” posits that racial minorities follow environmental disamenities due to low land prices (Pastor, Sadd, & Hipp, 2001). Certain studies provide support for this idea. Wolverton’s (2009) study of TRI plants in Texas finds that race is not significantly related to industrial plant location at the time of siting, but that plant location is positively related to current racial demographics. However, in their study of treatment, storage, and disposal (TSDF) facilities in Los Angeles County, Pastor et al. (2001) find the reverse. When controlling for other factors, “minorities attract TSDFs, but TSDFs do not generally attract minorities” (p.18). Thus, in Los Angeles County industrial uses locate in places where minority communities already live.

In addition to disparities in the siting of environmental hazards, scholars also observe differences in remediation. This is particularly prevalent in brownfield cleanup. Eckerd and Keeler (2012) find that sites in communities with a greater share of Hispanic and/or black residents tend to be cleaned up more slowly. They also observe that sites in low-income communities tend to be cleaned up relatively quickly. Thus, they note that “while the collocation of environmental disamenities and lower socioeconomic status populations seems to be a factor of both race and poverty, the inequitable remediation of these disamenities appears to be based on race, not on poverty” (Eckerd & Keeler, 2012, p. 311).

The environmental justice movement historically challenged the unequal siting and remediation of environmental disamenities. While this sort of organizing continues to be important, recent ethnographic research shows that “rather than reacting to local,

neighbourhood-level hazards as they develop, [environmental justice] groups are taking a more proactive approach to restoring nature and producing new environmental ‘goods’ in the city” (Carter, 2016, p. 5). The Green Zones Program targets eleven low- and middle-income neighborhoods where industry and environmental hazards are highly prevalent. Explicitly focused on furthering environmental justice in these communities, the program aligns closely with Carter’s description. By mandating specific improvements in these areas, the zoning regulations seek to proactively make industrial businesses greener

Environmental Gentrification

While concerns about the disparate siting and remediation of environmental hazards remain, environmental justice advocates are also increasingly concerned about gentrification in neighborhoods that have undergone greening. Checker (2011) defines green or “environmental gentrification” as “the convergence of urban redevelopment, ecologically minded initiatives and environmental activism in an era of advanced capitalism” (p. 212). Environmental gentrification appropriates the language of sustainability to serve high-end development in traditionally disinvested neighborhoods, thereby increasing prices and displacing long-time residents (Checker, 2011). Low-income residents and environmental justice advocates worry “that there is no place in the ‘sustainable’ city for industrial uses and the working class” (Curran & Hamilton, 2012, p. 1027). In response, some neighborhood residents advocate for a “just green enough” strategy, which advocates for “cleanup and green space aimed at the existing working-class population and industrial land users, not at new development” (Curran & Hamilton, 2012, p. 1028). This strategy challenges common understandings of “green” in working to promote community health while still preserving industrial uses and jobs.

Despite growing concerns, empirical evidence for environmental gentrification is tenuous. Much of the research on environmental gentrification is theoretical in nature. Banzhaf and McCormick’s (2007) found only weak and conflicting evidence of gentrification in their review of the empirical literature. Since then, new studies have not definitively supported one side or the other. Eckerd (2010) studies hazardous site cleanup in Portland, OR in the 1990s. He finds no relationship between gentrification and actual or perceived environmental improvement at the neighborhood level. He concludes that “the city’s efforts to improve the environmental conditions in its neighborhoods did not encourage gentrification” (Eckerd, 2010, p.53).

On the other hand, in their study of Superfund National Priority List (NPL) sites, Gamper-Rabindran and Timmins (2011) observe that cleanup drives household sorting by household income. Superfund cleanup results in the in-migration of wealthier and more educated households, though racial minorities do not appear to be driven out. Gamper-Rabindran and Timmins (2011) also find that Superfund cleanup increases population density in surrounding neighborhoods. Banzhaf and McCormick (2007) similarly find evidence for increasing incomes and greater housing density, but no evidence for racial impacts in their study. However, those authors also do not find evidence for rising real estate prices. In a different study, Gamper-Rabindran and Timmins (2013) observe larger

appreciation in housing prices at the lower percentiles of within-tract values as a result of Superfund cleanup, which could support the idea that environmental remediation drives gentrification.

More empirical research is needed to determine if, and under what circumstances, environmental cleanup causes gentrification. In addition, more work is needed on how remediation impacts commercial and industrial properties. The vast majority of the environmental gentrification literature focuses on housing prices and residential demographics, generally ignoring businesses. Ihlandfelt and Taylor (2002) find that hazardous waste sites negatively affect the market value of nearby commercial and industrial properties, but their study does not look at site cleanup or any associated effects. In order for the Green Zones Program to meet its expressed goal of equitable development, the County should actively monitor any effects the zoning regulations may have on residences and businesses alike.

Small Business Financing

Small businesses are a significant part of the U.S. economy. According to the U.S. Small Business Administration (2018), there are 30.2 million small businesses in the United States, which together employ around 47.5 percent of the labor force.* More than four out of five small businesses are nonemployer firms and have no employees. The number of nonemployer firms in the United States has risen sharply over the last two decades. In 1997, there were 15.4 million of these firms; in 2017, there were 25.7 million (Federal Reserve Bank of New York (FRBNY), 2019). The remainder of small businesses—employer firms—have anywhere between one and five hundred employees. Small businesses often experience precarity. The U.S. Federal Reserve System (FRS) (2019) finds that 64 percent of employer firms faced financial challenges in the previous year. Among nonemployer firms 62 percent reported financial challenges in the past year (FRBNY, 2019). During community outreach meetings, stakeholders in Green Zones communities expressed a desire for funding programs to accompany any forthcoming regulations.

Small businesses seek financing for four principal reasons: to start a business; to purchase inventory; to expand a business; and to strengthen the firm's financial foundation (U.S. Small Business Administration (SBA), 2016). Financing is critical for many small businesses. A majority (55 percent) of employer firms rely on loans or lines of credit, and an even greater proportion (70 percent) have outstanding debt (FRS, 2019). In 2018, 43 percent of employer firms, and 26 percent of non-employer firms, applied for additional credit (FRBNY, 2019). Bank loans to small businesses totaled nearly \$600 billion in 2015 (SBA, 2016). Banks provide more capital to small businesses than all other sources combined.

**For an overview of what constitutes a small business, refer to the “Key Terms” section at the beginning of this chapter.*

Financing Gaps

Despite this volume, many small businesses face funding shortfalls. In 2018, 53 percent of employer firms obtained less financing than they sought (FRS, 2019). Similarly, less than half of nonemployer firms reported that their funding needs were fully met (FRBNY, 2019). Servon, et al. (2010) study this “capital gap.” They find that mainstream banks rarely make loans of \$15,000 to \$35,000. Indeed, the FRS (2019) survey finds that a majority of businesses that seek loans of \$25,000 or less fail to receive the full amount. The actual “capital gap” may be even higher than reported. Many small businesses—particularly black-owned firms—are considered “discouraged,” and do not apply for loans out of fear of rejection (Servon, et al., 2010; FRBNY, 2019). Thus, many small business owners rely on personal credit cards and savings to cover their financing needs.

Besides bank reticence, small businesses face a range of other challenges that contribute to financing shortfalls. Many firms also face an “asset gap” (Servon, et al., 2010). Home equity loans are a crucial source of funding for many small businesses; however, these are not available to many, namely renters. Without personal assets, many business owners must rely on nontraditional—and more expensive—forms of credit. In addition, small business owners may struggle due to an “information gap” (Servon, et al., 2010). New business owners that lack financial knowledge, management experience, or awareness of available resources are often unable secure the funding they need.

Microenterprise development organizations (MDOs) seek to bridge these gaps. They provide business training and small amounts of credit (\$35,000 or less) to small businesses, offering a local alternative to mainstream lenders (Servon, 2006). However, it is unclear whether microenterprise programs are effective. Many MDOs have confused missions trying to balance poverty alleviation and economic development (Servon, 2006). As a result, their lending practices are highly inefficient, challenging the long-term sustainability of such programs. Small businesses also encounter difficulties when moving from microlending to larger, more traditional sources of credit. Many microlenders do not report to national credit bureaus, thus preventing their lenders from building a credit score sufficient for other lenders (Servon, et al., 2010). MDO training programs are also poor at reaching their target market, and rarely account for the diversity in business experience. Perhaps due to these challenges—and in spite of the prevalence of financing gaps—demand for microenterprise loans is low. Bates, Lofstrom, and Servon (2011) argue that “policy makers, funders, and the U.S. micro-lenders need to rethink the structure and offerings of [MDOs] and to gear them more specifically to the actual challenges facing their target market” (p. 265).

Lending Discrimination

Racial discrimination in lending can exacerbate financing gaps for minority-owned business enterprises (MBEs). Scholars find that MBEs experience higher costs when they borrow, receive smaller loans, and face greater rejection rates than similar white-owned firms (Bates & Robb, 2013; Bates, et al., 2011). Blanchflower (2008) observes that black

people “have to pay one percentage higher rate on their loan than would firms owned by white males with identical characteristics. Hispanics have to pay one and a half percentage points higher. Asians pay half a point higher” (p. 20). These disparities in lending rates are not explained by differences in applicants’ wealth or creditworthiness (Blanchflower, 2008; Robb & Fairlie, 2007). While Bates and Robb (2015) do not find that MBEs are less likely to receive financing, they also note that MBEs receive smaller loan amounts and face subtle barriers that discourage them from applying. As they summarize: “owner race and wealth both powerfully shape loan access: high wealth opens doors, minority ownership closes them” (Bates & Robb, 2015, p. 159).

Discrimination in lending has important consequences for racial differences in wealth. While the majority of small businesses face funding gaps, these gaps are more common and greater for Black and Hispanic business owners (FRBNY, 2019). MBEs are thus more likely to rely on informal credit sources, like family and friends (Bates & Robb, 2013). These financial capital constraints do not appear to impact entry rates for low-barrier sectors, like retail and repair, but do help explain entry rates in high-barrier sectors, such as manufacturing and wholesale (Bates, et al., 2011). Regardless of entry rates, lending discrimination has a significant impact on long-term business success. In their study of Black-owned enterprises, Robb and Fairlie (2007) find that disparities in start-up capital contribute to higher failure rates, lower sales and profit, and less employment among these firms, reducing economic advancement for Black entrepreneurs.

Government loan guarantees can help overcome this discrimination and thereby drive growth. A loan guarantee ensures that if a business defaults, the lender is repaid by the guarantee agency. For firms with little collateral, loan guarantees provide an opportunity to transition to traditional lending. Loan guarantees are a cost-effective tool for small business expansion and retention. In his study of the California State Loan Guarantee Program, Bradshaw (2002) finds that firms receiving loan guarantees increased employment, and had a default rate of only two percent. Similarly, Craig, Jackson, and Thomson (2007) find that SBA loan guarantees had a positive impact on the average employment rate within local markets, particularly for places with a large percentage of potential MBEs. They conclude that “SBA guaranteed lending will have a larger positive impact on social welfare if it is targeted to certain high-minority areas” (p. 91). However, more research needs to be done on whether public funding programs and credit enhancements discriminate against MBEs or other categories of small business. More research also needs to be done on the relationship between loan guarantees and moral hazard in lending. Saito (2014) raises this critique, but there is little empirical work on this issue.

Conclusion

Brownfields are highly prevalent in the United States, particularly in older, industrial zones in cities. The siting of brownfields and other environmental hazards is closely tied to race and class. Minority and low-income communities are much more likely to be exposed to

environmental risks. While there are extensive ecological, economic, and community benefits associated with brownfield cleanup, there are also concerns that greening may drive gentrification in vulnerable communities. However, the literature on environmental gentrification is conflicted. More empirical research is needed to determine if, where, and under what circumstances environmental cleanup causes gentrification.

Small businesses are a major part of the U.S. economy. Despite their prevalence, small businesses often face challenges in securing the financing they need. Racial discrimination in lending is a major barrier for many small business owners. When minority business enterprises get financing, they tend to pay higher rates and receive smaller loan amounts, hindering business growth. Public policy, particularly government loan guarantees, can overcome this barrier. Neither traditional banks nor microenterprise development organizations are particularly strong at supporting small businesses. Small businesses also face numerous other gaps that impact long-term sustainability.

This research project fits into both of these subject areas. It studies how public agencies can incentivize and accelerate greening in industrial areas while maintaining the existing industrial character using small business financing strategies. The broad goal is to address the myriad environmental justice issues facing communities in unincorporated Los Angeles County while ensuring that existing residents and businesses benefit from greening. This approach most closely aligns with the “just green enough” framework described by Curran and Hamilton (2012). Overall, the County’s Green Zones Program has the potential to transform perceptions of industrial corridors as polluted places incompatible with residential uses, and show that greening and industrial job retention can be complementary goals. This research project, meanwhile, proposes financing strategies that can best support this vision.

The ultimate purpose of this research is thus to inform a business incentive and support program for small and medium-sized businesses located in disadvantaged communities across Los Angeles County. This project seeks to provide an actionable program that—in conjunction with the rest of the Green Zones program—will lead to environmental improvements while also supporting small business development in the County’s most environmentally burdened and economically disadvantaged communities. While the ultimate recommendations are tailored to Los Angeles County, this research may be useful to many different local and state governments looking to green industrial areas while supporting existing businesses.

Data & Methods

The Los Angeles County Department of Regional Planning (DRP) proposed zoning code amendments that will mitigate the impact of industrial businesses on surrounding sensitive uses. These amendments promote industrial greening, reduce the risk of environmental contamination, and shield residents from business operations. However, these changes also impose direct and indirect costs on existing businesses, many of which have little capital. This research sought to inform the development of a business incentive and support program for small and medium-sized businesses located in disadvantaged communities across Los Angeles County. The broader question driving this project was:

What public funding methods and strategies can best help small, industrial businesses make green, on-site improvements and comply with Los Angeles County’s forthcoming Green Zones regulations?

This project examined public financing strategies and best practices that can offset the costs the proposed zoning code amendments impose on small and medium-sized industrial businesses. The purpose of this research was to support the creation of a comprehensive and effective funding program for industrial businesses in unincorporated Los Angeles County that are subject to the Green Zones ordinance. To provide recommendations around program design for the County, the project proceeds in three distinct sections.

Figure 3.1. Data Sources Used

Purpose	Sources
General info on LA County businesses	US Census – Annual Survey of Manufactures, County Business Patterns, and Economic Census; Bureau of Labor Statistics – Quarterly Census of Employment and Wages
Green Zones Regulations	Text of Draft Ordinance; Discussions with Client
LA County land use mapping and specific business data	LA County GIS Data Portal, Property Assessment Information System, and Assessor Portal; Datasets from Client; Site visits
Cost of GZO improvements	Interviews with contractors; RS Means; Online Research
Local funding programs	Liberty Hill – Guide to Green; LA County Small Business Resource Guide; Semi-structured interviews with staff
Case studies	Semi-structured interviews with staff; News media

First, I estimated the full costs of the proposed regulation on these businesses. Second, I surveyed local, state, and federal funding programs to identify gaps where new County programs can have the most impact. Lastly, I employed a case study approach to determine effective strategies and best practices for financing green business improvements, especially in industrial zones. Throughout this project, I used site visits,

interviews, and case study research to inform recommendations around effective program design. See Figure 3.1 for a list of data sources used for each respective research area.

Zoning Analysis & Cost Estimation

In order to better inform funding strategies, I estimated the costs that the proposed zoning code amendments will impose on businesses. DRP did not previously have estimates about the magnitude of costs associated with the GZO. As a result, I gathered data on costs through a variety of sources, including industry publications, online catalogs/stores, and interviews with vendors.

First, I carefully analyzed the text of the draft ordinance line by line, noting what on-site improvements will be required and when, or where, they apply. I followed up with DRP staff to ensure that my interpretation of the draft ordinance matched that of the department. I focused only on physical property improvements, rather than requirements that dealt with operations (such as the location of loading docks). With the former, costs are much simpler to estimate; in contrast, the impact of changing operational practices is likely to vary widely from business to business. I thus narrowed my focus to five development standards:

- Solid walls along street frontage or lots adjoining sensitive uses
- Landscaping along street frontage using drought-resistant trees and plants
- Enclosed buildings for all manufacturing, repair, or handling of hazardous materials
- Paving of all parking, circulation, or storage areas with impervious materials
- Business identification signs visible from the public right-of-way

I constructed an “average” Green Zones business through site visits and map analysis. Using shapefiles available on the Los Angeles County GIS Data Portal or provided to me by the client, I made digital maps of the eleven Green Zones Communities. Of the eleven communities, I selected two—East Los Angeles and Florence-Firestone—for more detailed analysis. I chose these areas over others after more research and discussions with the client. Among other reasons, DRP recommended I choose these communities because of extensive Green Zones outreach efforts previously done in these neighborhoods. To better analyze the GZO’s impact, I needed to look at communities where industrial and sensitive uses are in close proximity. Both neighborhoods are home to many industrial uses, many of which are near sensitive uses. DRP provided me an additional dataset that detailed on-the-ground conditions in these communities. For each neighborhood, I made more detailed maps showing the location of manufacturing zones relative to sensitive uses.

Within each of the two communities, I selected an industrial sub-area that will be subject to the GZO. Using the generated maps, I looked for large blocks (~0.75 miles around) that fell entirely within 500 feet of an existing sensitive use. In East Los Angeles, I chose a block in the northernmost section of the community, north of the 10 freeway. In Florence-

Firestone, I selected a block along the Alameda industrial corridor. These blocks were selected somewhat arbitrarily; I could have chosen among a number of blocks close to sensitive uses. This may introduce bias into the analysis. These two blocks are not necessarily representative of industrial areas in Los Angeles County. However, because I was careful to select areas that were close to sensitive uses—and in two different communities—it is likely that these areas are representative of the areas that the GZO targets. I also have no reason to suspect businesses or land use patterns in these areas being significantly different from other, nearby blocks. After selecting the two study areas, I conducted background research using data from the Los Angeles County Assessor Portal and the County GIS Data Portal. I used these data to determine the characteristics (square feet, building size, etc.) of businesses in the area. I also received information from DRP about property owners for each parcel in the block.

I supplemented this research with site visits to determine which improvements businesses will need to make. I first made a table for each block with the five aforementioned development standards as columns, and parcel numbers/addresses as rows. I conducted the site visits on a weekday in December 2019. I visited both sites in the late morning—during standard business hours—to see how businesses typically operate. To begin, I drove around the perimeter of the block to get a feel for the area. I then walked around the same block on foot. Using the matrix, I noted whether any given parcel already had the improvements required by the GZO (e.g. walls, landscaped buffers). While many businesses were closed to the public, I was able to visually verify the presence or absence of the five development standards from the public right-of-way. During the walks, I took detailed notes and photos. Overall, each site visit took approximately 45 minutes.

After the site visits, I used the various data gathered to construct a “typical” business subject to the GZO. I set up this “typical” business using the median values for square footage. I fully acknowledge that the median business size is not fully representative of all business subject to the GZO. Some businesses may be far larger, others may be smaller. A single property may also be home to multiple business tenants. However, since this exercise is intended only to provide a general estimate of costs associated with the GZO requirements, it makes sense to use a median business. Of course, costs to any one business may differ widely from the median estimate. This information will still be useful to ground recommendations on financing programs (i.e. grant or loan amounts).

To gather information about costs, I used a variety of primary and secondary sources. I conducted online research about costs associated with the required improvements to get a better understanding of the magnitude of costs. I used estimates from multiple vendors that provided per unit quotes online. I also looked at industry data sources like RSMeans to get industry accepted estimates of certain improvements. Where I could not find information on costs in industry publications or online, I spoke with local contractors and construction companies to get estimates. I used these various quotes and estimates to calculate the cost of the GZO for a “typical” business.

Funding Sources & Gaps

I examined existing funding resources available to businesses and property owners in Los Angeles County to make the required on-site improvements. Using Liberty Hill's Guide to Green and the Los Angeles County Small Business Resource Guide as starting points, I identified local programs that might fund any of the GZO requirements. I narrowed down these broader lists by purpose (do they fund any of the GZO improvement?) and geography (do they apply to businesses in unincorporated Los Angeles County?). I also searched online to catch any funding programs that were not included in either of the two guides.

I conducted online research to find out more about each of these identified programs. I looked at documents like application materials, and program descriptions on the applicable department's website. I searched for confirmation that a given program would, or would not, fund specific GZO regulations. I also spoke with program staff directly. For each program, I emailed the point of contact listed online, or in the Guide to Green, to set up a phone interview. As representatives of a program, these staff were very knowledgeable about their respective program and thus could answer all of my questions. I ultimately interviewed mid- and senior level staff at six different agencies:

- California Department of Toxic Substance Control
- City of Los Angeles Board of Public Works
- Los Angeles County Department of Consumer and Business Affairs
- Los Angeles County Department of Public Works
- Los Angeles County Development Authority
- Los Angeles County Internal Services Department

Each interview lasted approximately 20-30 minutes, during which I typed detailed notes. Interviews were semi-structured; I asked nine predetermined questions, but asked subjects to clarify their responses as needed throughout the interview. A full list of questions asked is included in the Appendix. I used these interviews to find out more about how the programs worked (i.e. type of funding, payback periods, interest rates, etc.). I also took the opportunity to explicitly ask whether a respective program would fund GZO improvements in unincorporated Los Angeles County. I also explicitly noted which improvements were not covered by any existing programs, so that the ultimate recommended funding strategies filled gaps instead of replicating existing resources.

Program Case Studies

I used four case studies from across the country to ground my ultimate recommendations for Los Angeles County. The County's Green Zones Ordinance is unique; few jurisdictions' zoning changes require existing businesses to make on-site improvements along with new ones, and none—to my knowledge—do so for the specific regulations proposed in the draft ordinance. As a result, there are no financing programs in the United States that

correspond exactly to the goals of the County's Green Zones Program (GZP). I instead looked at a sample of financing programs that support green, on-site improvements—such as clean energy upgrades, or green infrastructure—on private, commercial properties. Since these cases are not perfectly analogous to the GZP, the ultimate recommendations may be biased. However, I argue that these cases are representative because they have the same broad goal (greening) and property ownership structure (private). The four case studies are as followed:

City of Los Angeles, CA – Clean Up Green Up

The Clean Up Green Up (CUGU) ordinance was signed into law in April 2016 after a decade of community organizing. It created three pilot “Green Zones” communities—Pacoima, Boyle Heights, and Wilmington—where green development standards apply. It also established an ombudsperson position that helps businesses access financial and technical support to green their operations. This case study was selected because its regulations are highly similar to the County's Green Zones regulations. Indeed, the County was influenced in part by CUGU. It is thus useful to examine this program, its strengths and its weaknesses, for this research project.

City of Philadelphia, PA – Greened Acre Retrofit Program

To fulfill an agreement with US EPA to reduce combined sewer overflows, Philadelphia's Greened Acre Retrofit Program incentivizes green interventions on private property. The City employs two measures: a modified stormwater billing system and a green infrastructure grant program. The grant program encourages private design and construction firms to bundle projects and apply on behalf of property owners, leading to lower-cost retrofit opportunities. This case study shows how an innovative approach to grant administration can create an effective program and drive greening.

Michigan Saves (statewide business financing program)

Michigan Saves calls itself the “nation's first nonprofit green bank.” It makes affordable financing and other incentives available through credit enhancements, specifically a loan loss reserve, to private sector loans. It also monitors a network of contractors that make green improvements. While not a publicly run program, Michigan Saves performs the same function that the public sector does in other states. It also has strong partnerships with private sector lenders, contractors, and municipalities. It is thus a good example of how financing strategies can incentivize green improvements on private property.

City of National City, CA – Various Programs

National City is a small city with many industrial businesses located near San Diego. While a much smaller municipality (population ~61,000) than Los Angeles County, National City has a number of programs that incentivize greening in industrial areas. Long home to a robust environmental justice movement, National City recently incorporated the concept into its general plan. Since then, the city has received a great deal of federal funding for its programs. The case of National City offers possibilities for what a very well-funded program rooted in environmental justice can look like. Also, funding programs, unlike

many other government programs, are often quite scalable, so jurisdiction size is not necessarily a reason to exclude a case study.

For each case study, I began by conducting background research. I looked at primary sources such as ordinances, application documents, and the program website. I specifically searched for information about the technical aspects of the program, such as eligibility requirements, funding amounts, and steps to apply. I then examined a range of secondary sources, including scholarly journals, news media, and official statements from the applicable governmental entity. All the documents I came across were publicly available. With these sources, I sought information about the program's purpose, how it works, and its impacts.

I then conducted interviews of professional staff people. Published sources alone cannot provide a comprehensive look at the strengths and weaknesses of a program. During these interviews, I specifically examined measures of *effectiveness* for each program. Of course, effectiveness is a somewhat ambiguous term that may refer to a variety of outcomes. I thus looked at a number of variables that together can help demonstrate effectiveness including, but not limited to:

- Number of businesses supported
- Types (by sector, size, etc.) of businesses supported
- Number of green improvements made
- Environmental benefits resulting from the program
- Other community benefits resulting from the program
- Public sector resources (staff and funds) required
- Dependence on external funding
- Long-term program sustainability
- Business satisfaction with program
- Replicability
- Scalability

For each case study I interviewed two professional staff people that worked on the program. I primarily spoke to employees at public agencies, but also talked to staff at private companies when applicable, such as when the program was run as a public-private partnership (i.e. Michigan Saves). I chose to interview professional staff because they are best equipped to speak about the advantages and disadvantages of a given program. In overseeing a program, they draw on the experience of working with dozens, if not hundreds, of businesses. Professional staff are also well-positioned to speak broadly about the successes and challenges they faced in implementing and operating a given financing program.

In addition to professional staff, I hoped to interview program applicants that were successfully funded. In contrast with public sector staff, an applicant can only provide a single data point for a given program. However, applicants could provide critical end-user

insight into how programs function. They might offer a different perspective on the strengths and weaknesses of a funding program and can also speak on their experience with program administration. By speaking with both program representatives and applicants, I hoped to get a balanced perspective on the effectiveness of a given funding program. Unfortunately, I was unable to interview program applicants. My attempts to contact applicants were unsuccessful. Without input from this group, my interview sample may be somewhat biased. Nonetheless, I believe the sample selected provided a well-rounded perspective on the strengths and weaknesses each program. Following up with applicants represents a great opportunity for future research on program efficacy.

I conducted interviews between January and March of 2020. I found program staff primarily through department or company websites and reached out initially via email. I used a variety of sources to find program applicants to contact. In some cases, the department or company website published a list of successful applicants. I also asked the program staff for a list of applicants during my interviews in a “spitball” fashion.

All interviews were semi-structured (for a list of questions, refer to the Appendix). I asked several predetermined questions, but followed up on certain points when necessary. During the interviews, I typed up notes. After I completed all the interviews, I performed narrative analysis on the notes I took. I looked for common thoughts, phrases, and sentiments across interviews. I specifically compared applicant interviews with program staff interviews for any similarities or points of departure. I sought to answer broad questions about the efficacy of each financing program. I also attempted to tease out unique strengths and weaknesses of each program in order to frame my ultimate recommendations to my client.

Zoning Analysis & Cost Estimation

In accordance with the 2015 Los Angeles County Board of Supervisors motion promoting equity, sustainability, and affordable housing in the region, DRP initiated the Green Zones Program. Through this program, DRP advances environmental justice in unincorporated communities disproportionately burdened by environmental impacts. Now, to further this goal, DRP intends to make zoning code amendments that will require existing, industrial businesses make green, on-site improvements. These amendments are referred to as the “Green Zones Ordinance” (GZO). Using a draft ordinance dated from December 31, 2019, I analyzed the proposed GZO regulations. Using information gathered from two site visits, I quantified the costs these regulations may impose on businesses.

Ordinance Review

The GZO centers environmental justice, noting that industrial uses often have an adverse impact on surrounding residents. It focuses on eleven communities, collectively known as the “Green Zones District.” From the outset, the GZO emphasizes its broader purpose:

The Green Zones District is established to promote environmental justice in the areas that are disproportionately affected by toxic pollutants and contaminants generated from various land uses ... [to] protect the health, safety, and general welfare of people living, working, and recreating in the surrounding areas (Zoning Code Draft, 2019, December 31). *

The GZO applies to industrial, recycling, and vehicle-related uses in the Green Zones District that are located within 500 feet of a sensitive use. The term “sensitive use” refers to a “range of land uses where individuals are most likely to reside or spend time ...” (T. Farris, personal communication, 2020, May). The list of sensitive uses includes—among other land uses—residences, schools, parks, and hospitals. The GZO applies to all uses where any a portion of that use’s lot falls within the 500-foot radius. Within this buffer, the GZO prohibits certain heavy industrial uses, such as forging works and smelters. Other industrial uses are required to provide the following:

- Solid walls, 8-12 feet high and six inches thick, along street frontage or lots adjoining sensitive uses, for uses where outdoor storage, operations, or circulation is visible. Any type of fence or wire is prohibited, save for metal gates that restrict vehicular access
- Stored materials, vehicles, and equipment may not exceed the height of the wall
- Surfacing of all parking, circulation, or storage areas with impervious materials

** The language quoted in this section comes from a preliminary version of the ordinance shared with the author. This draft is used only for illustrative purposes, and should not be taken as established legal fact. The legal requirements discussed in this paragraph and throughout the paper will first require approval from the County Board of Supervisors, and are thus subject to change.*

- Enclosed buildings for all manufacturing, repair, or handling of hazardous materials, unless another regulatory agency requires natural ventilation
- Business identification signs displaying contact information, 4-9 square feet in size, permanently affixed to a wall and visible from the public right-of-way
- Driveways and loading/unloading zones placed as far from sensitive uses as feasible.
- A landscaped buffer, five feet in width, on street frontage, along solid walls unless it encroaches on required parking or existing buildings. Landscaping should use drought-resistant trees and plants, with one tree planted for every 100 sq. ft. of landscaping

Property owners may request modifications if there are physical barriers that make certain standards unreasonable. All modifications must provide an alternative way to prevent negative environmental impact and otherwise be consistent with the goals of the GZO. The ordinance also sets additional performance standards, such as limited hours of operation. The remainder of this report focuses on the physical development standards listed above. The development standards will apply to new and existing businesses alike. While most zoning code amendments exempt existing uses, grandfathering them in, the GZO requires existing businesses to comply with the set standards as well. Figure 4.1 lists the time from the effective date of the ordinance that existing businesses have to comply with the regulations. New businesses will have to comply before receiving planning approval. Going forward, most uses will need at least a CUP to legally operate. DRP thus has an effective enforcement mechanism. Existing uses will need to demonstrate compliance with the GZO if they are to get a renewed permit. Businesses must fully comply with all applicable requirements or cease operations.

Figure 4.1. Compliance Timeline for Existing Businesses

Permit Type	< 100 ft from Sensitive Use	100 – 500 ft from Sensitive Use
Subject to Site Plan Review	3 Years – Signage	5 Years – All Regulations, Except Full Enclosure
	5 Years – All Others, Except Full Enclosure	10 Years – Full Enclosure
	10 Years – Full Enclosure	
Newly Subject to CUP	5 Years – Walls, Landscaping, Signage 10 Years – All Others	10 Years – All Regulations
Existing CUP	Upon expiration of permit, or until new discretionary permit required	Upon expiration of permit, or until new discretionary permit required

Source: Zoning Code Draft, 2019, December 31

The required improvements will impose costs on both property owners and businesses. The responsibility of improving sites will ultimately rest with the owner, who is often not the business operator. However, business operators may end up bearing some or all of the costs associated with the regulations. Construction may disrupt business activity. Furthermore, businesses will need to ensure that major physical modifications (i.e. covered structures) are compatible with their existing equipment, operations, and site requirements. Owners may also request businesses to pay for the necessary additions, or

else withhold renewing the lease. So, while the legal burden falls upon the property owner, the final costs may fall upon the either owner or the tenant. DRP estimates that the zoning code amendments will impact approximately 2,400 existing businesses (T. Farris, personal communication, 2020, January).

Area Case Studies

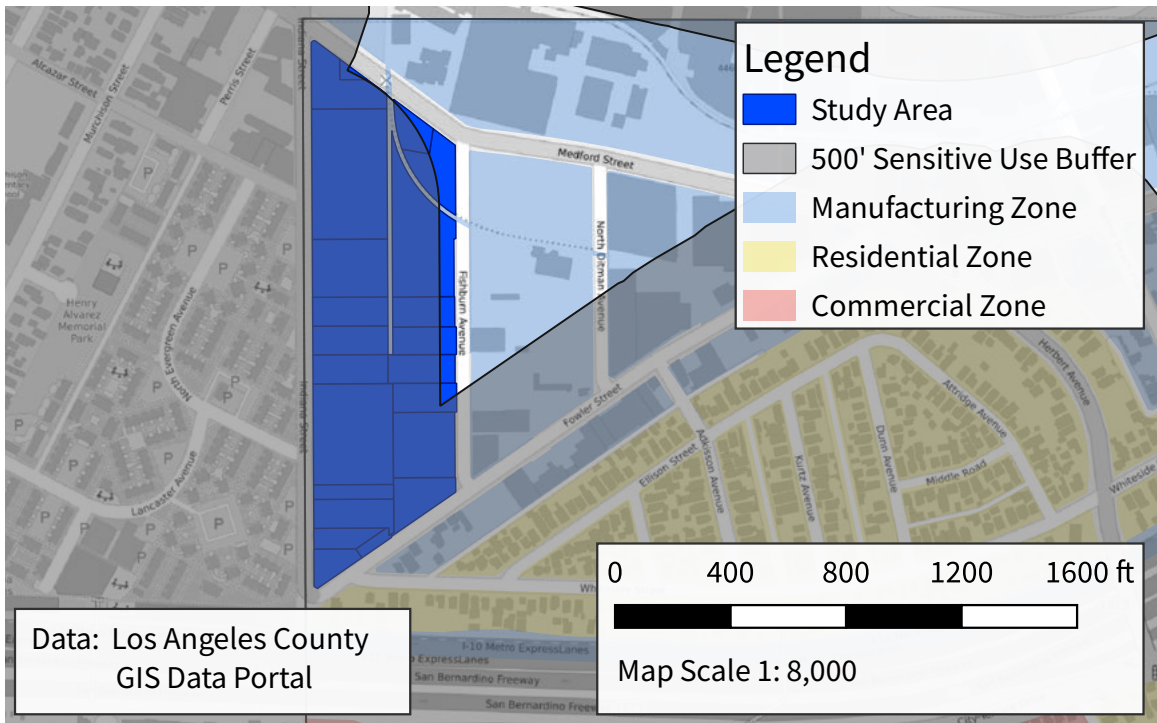
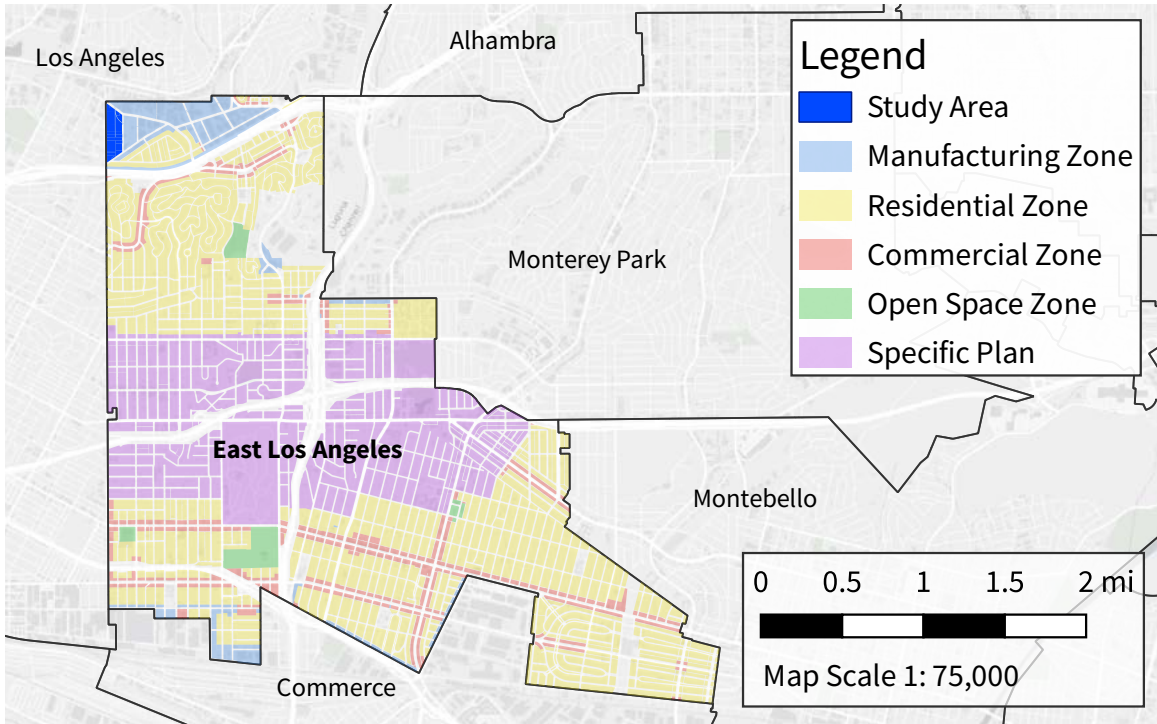
East Los Angeles

East Los Angeles is a densely populated community located about four miles east of downtown Los Angeles. For decades, the neighborhood has been home to the single largest Hispanic community in the United States (Benitez, 2004). According to the 2017 American Community Survey, 96.4 percent of residents identified as either Hispanic or Latino. Nonetheless, there is a great amount of diversity within this community. Recent immigrants and newcomers from other parts of the United States reside alongside families that have lived in the neighborhood for several generations (Benitez, 2004).

Like most Green Zones communities, East Los Angeles may be considered vulnerable based on several key socioeconomic variables. The median household income (\$42,544) is thirty percent lower than that for the County as a whole (\$61,015); 22.4 percent of residents earn below the poverty line; and more than half of residents (50.4 percent) lack a high school degree. The community also faces numerous environmental burdens. Four major freeways—the 5, 10, 60, and 710—cut through the neighborhood, carrying traffic that negatively impacts local air quality. There is a relative lack of green space. East Los Angeles has roughly one park acre per 1,000 residents; the county average is 3.3 acres per 1,000 residents (L.A. County Dept. of Parks & Recreation, 2015). Industrial businesses are highly prevalent. There are 186 auto repair shops, 92 manufacturers, and 20 recycling facilities located in the neighborhood.

The area selected for in-depth examination is located in the northwest corner of East Los Angeles, just north of the 10 Freeway (See Map on next page). It is a trapezoidal block bounded by Medford Street to the north, Fishburn Avenue to the east, Fowler Street to the south, and Indiana Street to the west (see Area Map on the next page). The study area encompasses 22 different parcels, all of which are zoned M-2 (Heavy Manufacturing). It includes various industrial businesses, including recycling facilities and a towing company. It is directly adjacent to the Ramona Gardens Public Housing Community, as well as many single-family homes. The entire study area—all 22 parcels—are located within 500 feet of an existing sensitive use, or zone, so all businesses would potentially be subject to the Green Zones regulations. According to CalEnviroScreen, the census tract that covers this area is in the 98th percentile statewide for pollution burden, and in the 94th percentile for population characteristics. As a result, this tract is in the 99th percentile statewide for overall CalEnviroScreen Score.

Area Case Study



Florence-Firestone

Florence-Firestone is an unincorporated community located approximately six miles south of downtown Los Angeles. A majority of residents (91.3 percent) identify as either Hispanic or Latino. Overall, the neighborhood may be considered vulnerable based on a range of socioeconomic and environmental variables. Over half (56.5 percent) of residents have less than a high school degree and nearly a third (30.2 percent) earn below the poverty line. The median household income (\$36,289) is more than forty percent lower than the county average (\$61,015). There is only about one park acre per 1,000 residents, far lower than the county average of 3.3 acres per 1,000 residents (L.A. County Dept. of Parks & Recreation, 2015).

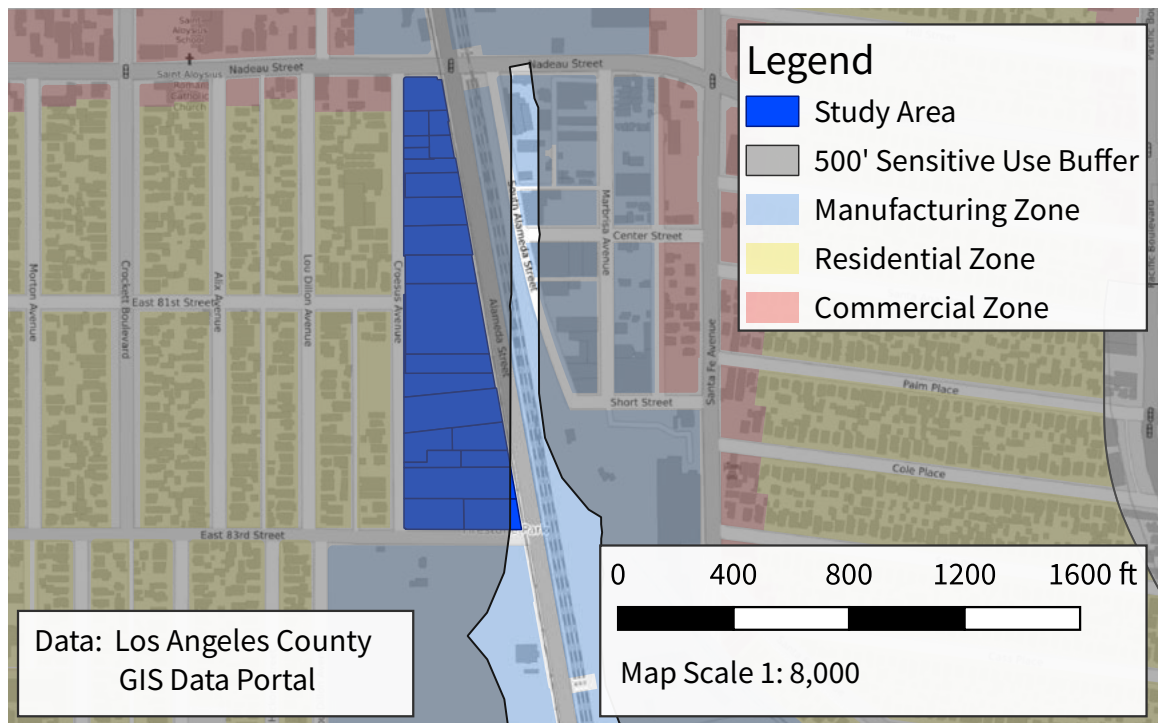
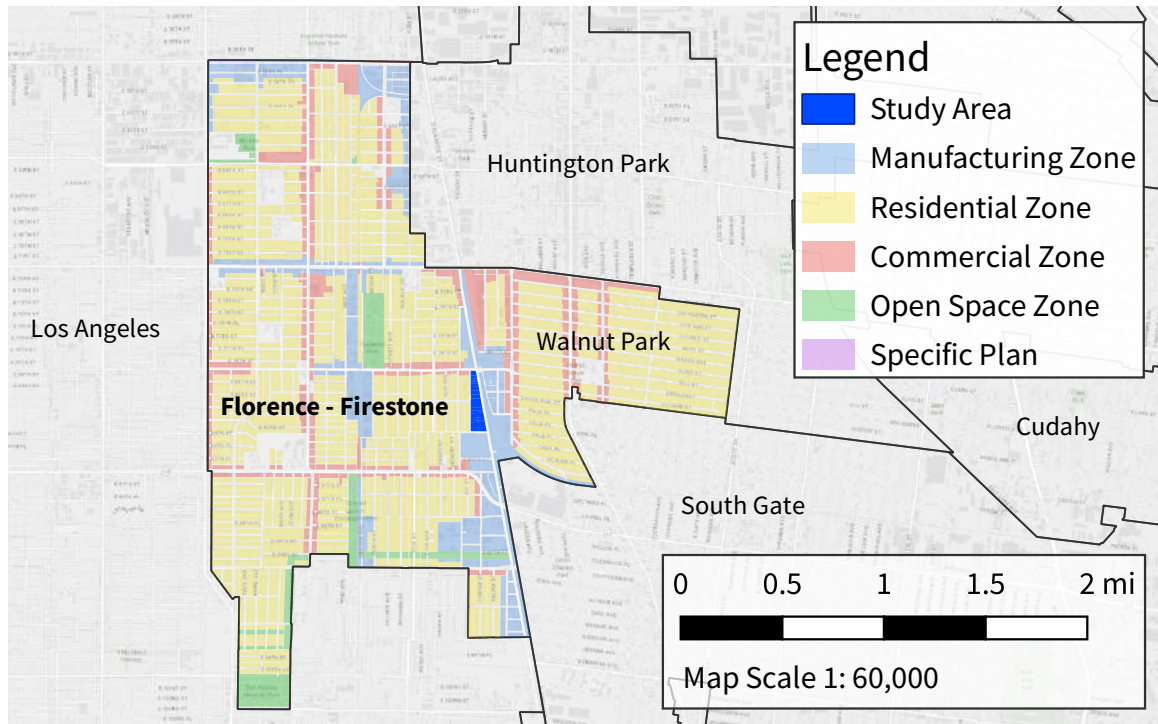
The community has a strong industrial presence, which often produces significant land use conflicts. Historically, the neighborhood was home to large industrial employers like the Goodyear and Firestone Tire companies. Beginning in the 1960s, and continuing into the 1970s and 1980s, deindustrialization hit Florence-Firestone, resulting in widespread unemployment and business closure (DRP, 2019, September). The industrial character of the community remains today. There are 145 auto repair shops, 74 manufacturing businesses, and 66 recycling facilities located in the neighborhood. However, many historic industrial properties are poorly maintained, non-compliant with current development standards, and in dire need of reinvestment (DRP, 2019, September). As industry shifted from manufacturing towards other industrial uses, all while the residential population grew, the mismatch between adjacent land uses increased. Thus, a key goal of the Florence-Firestone Community Plan is to “resolve the incompatibility between proximate industrial and residential land uses to improve the health and welfare of the community” (DRP, 2019, September, p.10).

The area chosen for further study is located on the eastern edge of Florence-Firestone, near the border of Walnut Park. It is a long and narrow block bounded by Nadeau Street to the north, Alameda Street to the east, 83rd Street to the south, and Croesus Avenue to the west (See Area Map on next page). Alameda Street is one of the region’s largest industrial corridors. Within Florence-Firestone it is almost exclusively zoned for manufacturing. The study area is no different; all 22 parcels in this block are zoned M-2 (Heavy Manufacturing). It includes several auto parts stores and industrial suppliers.

The study area is located near a range of sensitive uses. A residential zone is located directly to the west, while Nadeau Street is a major commercial strip. The whole study area—all 22 parcels—are located within 500 feet of an existing sensitive use. As a result, all businesses would potentially be subject to the forthcoming Green Zones regulations. According to CalEnviroScreen, the census tract that encompasses the study area is in the 93rd percentile statewide for pollution burden, and in the 94th percentile for population characteristics. Combining those two scores gives this census tract an overall CalEnviroScreen Score that is in the 98th percentile statewide.

Florence - Firestone

Area Case Study



Site Visits

I conducted both site visits on a weekday in December 2019. At each site, I walked the perimeter of the block and visually examined the businesses from the public right-of-way. I observed general characteristics of each area on a workday. In addition, for each business, I recorded the presence—or absence—of five development standards to be required by the GZO:

- Business identification signs visible from the public right-of-way
- Paving of all parking, circulation, or storage areas with impervious materials
- Solid walls along street frontage or lots adjoining sensitive uses
- Landscaping along street frontage using drought-resistant trees and plants
- Enclosed buildings for all manufacturing, repair, or handling of hazardous materials

Both focus areas shared many broad characteristics in terms of the above development standards.* This is not entirely surprising, as both areas are zoned M-2 (Heavy Manufacturing), feature similar industrial businesses, and are close to sensitive uses. Still, each block had unique aspects, and offered somewhat different experiences for residents and pedestrians.

East Los Angeles

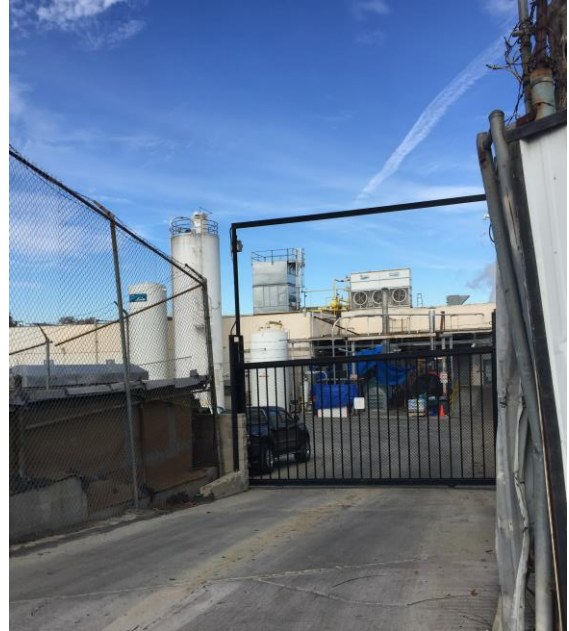
The focus area is highly industrial; the block includes two recycling businesses, an industrial kitchen, and a distribution center, among others. Throughout the block, there is a lot of chain link fencing visible. Nearly all of these businesses conduct most or all of their operations indoors, making it difficult to ascertain the exact nature of some firms. Buildings are generally one-story, and made of brick. While the operations are indoors, certain business practices are somewhat incompatible with the neighboring residential uses. Some business operations, particularly those of the recycling companies, generate a lot of noise. Many businesses receive delivery trucks which enter and exit from the same streets as residents.

The environment is difficult for pedestrians to navigate. On the north side of Fowler Street, and on portions of Fishburn Avenue, there are no sidewalks. Cars park along many of these areas, though it is unclear if they belong to workers at the businesses or to nearby residents. There is relatively little non-commercial traffic. There is very little greenery along Fowler, Fishburn, or Medford Street. Some businesses have some sort of landscaping, but it is generally set back from the public right-of-way. As a result, there is almost no shade along these streets. Along Indiana Street, which faces the Ramona Gardens public housing development, the environment is more pedestrian-friendly. The area between the sidewalk and the street is planted with grass. In a few sections, there are even trees that provide shade and greenery. However, one business's loading docks face out onto the street here. Photos from the site visit are displayed on the following pages.

* For the rest of this section, I use the community name (i.e. East Los Angeles) to refer to the specific focus area.

East Los Angeles

Area Case Study – Photos



Above: Along Fowler Street, industrial operations face residences with only fencing as a buffer. Deliveries enter from the same street where residents and customers park. This side of Fowler Street has very little greenery, and no sidewalks, making the environment a difficult one for pedestrians.



Above: An orange tree is a rare spot of greenery among the industrial nature of Fowler Street.



Above: A small fenced off area becomes a place where trash accumulates.



Above: The rare lot that remains unpaved. The zoning code amendments would require the owner to pave over the dirt lot.

East Los Angeles

Area Case Study – Photos



Above: On Indiana Street, this loading docks of this business directly face the Ramona Gardens public housing development.



Above: An example of a sign already compliant with the forthcoming Green Zones regulations concerning signs.



Above: This business has a plethora of landscaping in front of their building that includes shrubs, grasses, and trees.



Left: A strip of unkept grass buffers a building. The owner will likely find planting additional trees, bushes, or plants straightforward.



Left: On Indiana Street, an attractive buffer adds greenery and shade to the area.

Florence - Firestone

While also highly industrial, the focus area also includes sections much more amenable to nearby residents. Compared to East Los Angeles, there are fewer and less varied businesses on this block. Each one takes up more area, however. For the most part, businesses in the focus area deal with the automotive sector. There is a salvage yard, an auto parts store, and various repair shops. In addition, there is a gas station currently under construction in the northernmost parcel in the focus area. These industrial land uses are generally screened from nearby sensitive uses, at least along Croesus Avenue. Most business along Croesus Avenue have solid—albeit thin—walls, that shield the facing residential uses. From the right-of-way, it is difficult to see any business operations. There are no sidewalks on the east side of Croesus, but about half the block has a landscaped buffer at least five-feet deep with plants and trees.

As a major industrial corridor, Alameda Street presents an entirely different environment. The street itself has four lanes of very fast-moving traffic. There is a relatively wide sidewalk, but almost no visible greenery or shade. On this side, businesses generally use metal fencing to delineate their property. These fences are not setback, and are directly adjacent to the sidewalk. As a result, operations are often visible, as are many cars, parts, and equipment stored out in the open. It is somewhat difficult to determine where properties begin and end.

Some businesses use handmade signs to advertise services, but several do not have any signage at all. Since the focus area constitutes one long, narrow block, the businesses that face out onto Alameda Street often abut Croesus Avenue as well. Thus, while some businesses are largely compliant with GZO regulations on one side of their property, the other side will still require investment to bring it up to the standards spelled out in the ordinance. Photos from the site visit are displayed on the following pages.

Florence - Firestone

Area Case Study – Photos



Top: Along the Alameda corridor, industrial operations are easily visible to the public. Most properties are shielded only with a fence, if at all.



Above: An illegible sign makes it difficult to see what business is located on the premises. It makes it more difficult to raise complaints about potential problems with the site.



Left: Industrial and delivery vehicles park and make deliveries on the same street as residences.



Left: Barbed wire and a warning sign indicate the danger or hazard of an industrial property.

Florence - Firestone

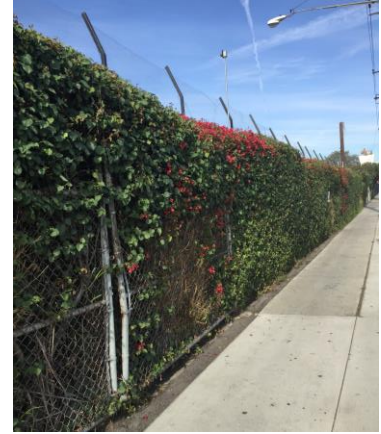
Area Case Study – Photos



Above: A handmade sign on Alameda Street advertises products and services, with a phone number to call.



Above: A fun business façade on Alameda Street. Buildings abutting the right-of-way would likely not need to provide an additional landscaped buffer.



Above: A hedge and fence screen a property. It is unclear if the Green Zones program would accept this buffer as is.



Above: A landscaped buffer on Croesus Avenue, when paired with a solid wall, successfully shields an industrial property from nearby residences. The zoning code amendments will promote property improvements such as the one above, or similar.

Development Standards

In both Florence-Firestone and East Los Angeles, businesses lacked signage as laid out in the GZO. Businesses often employed homemade, painted signs advertising their goods and services. But few of these signs listed businesses' contact information, or provided numbers for the applicable regulatory agencies. Over the course of the two site visits, I saw one business that was fully compliant with the forthcoming regulations regarding signage.

In contrast, nearly all properties were compliant with the paving regulations. Whether in Florence-Firestone or East Los Angeles, industrial businesses located operations, storage, and parking on fully paved lots. The only exceptions were a handful of vacant lots in East Los Angeles, which were entirely unimproved. GZO regulations would most likely not apply to those parcels, though any business that wanted to set up shop there would need to comply with the paving (and all the other) requirements prior to applying for a permit.

Most businesses had some sort of fence—typically made of chain link—running along the property line. Several of these had barbed wire running along the top. The GZO would prohibit any sort of fencing or wire for businesses, save for use in vehicular access gates (Zoning Code Draft, 2019, December 31). Rather, such businesses would need to construct a solid wall to screen their premises. Some businesses already had solid walls, but few met the standard defined in the GZO. Existing walls were typically made of wood, or some sort of board, and not masonry. Often, these walls were only an inch or two thick — short of the six-inch thickness required by the GZO. As a result, nearly all businesses would need to construct or reconstruct a wall that meets DRP's standards.

Similarly, few—if any—businesses were fully compliant with the proposed regulations around landscaping. In Florence-Firestone, one business had a well-maintained landscape buffer, but only along Croesus Avenue. That same business did not have any greenery on the side facing Alameda Street. Meanwhile, one business in East Los Angeles had lush landscaping in front of its building, but did not have the required buffer. For the most part, the other businesses had little landscaping. Trees were rare, particularly in East Los Angeles. It is likely that installing a landscaped buffer will be the most common improvement businesses have to make. This installation will also impact any existing walls that abut the property line. Walls will have to be moved back at least five feet to make room for landscaping.

Lastly, most businesses appeared compliant with the enclosure requirements, though this standard was by far the most difficult to evaluate. In East Los Angeles, nearly all businesses had dedicated buildings for operations. There was very little open storage of materials or equipment. In Florence-Firestone, there was relatively more outdoor activity. Several businesses had a significant area devoted to outdoor storage. However, most actual work appeared to take place in enclosed or partially covered structures, though this was at times difficult to determine. Similarly, it was not possible to evaluate whether any hazardous materials were handled. Overall, it is likely that most businesses will not need to build new

structures to continue operations, but—again—this is difficult to precisely forecast, and will require a case-by-case review by DRP.

Figure 4.2. Focus Area Businesses Fully Compliant with GZO Standards

Development Standard	Fully Compliant Businesses
Business identification sign	1 / 15
Paving for circulation, parking, or storage	15 / 15
Solid walls along street frontage, no fencing	1 / 15
Landscaping buffer along street frontage	0 / 15
Enclosed buildings for manufacturing/repair	13 / 15

Across the two focus areas, there were fifteen clearly identified businesses. Figure 4.2 above records how many businesses were fully compliant with the selected regulations specified in the draft ordinance. At least in these two areas, businesses are generally compliant with some of the GZO regulations, though not all. Businesses are relatively similar to each other. Most are already compliant with some of the regulations—paving and enclosure, specifically—but lack the rest. Assuming that the surveyed areas are representative of industrial areas across the eleven Green Zones communities, it is likely that most industrial businesses in Green Zones communities will have to make the same three on-site improvements: signage, solid walls, and landscaping. Most businesses will not have to make improvements that require the most extensive construction. Again, businesses may ask DRP for modifications so they can meet the goals of the GZO in alternative methods; however, to get a more accurate measure of costs imposed by the GZO the remainder of this analysis does not consider this avenue.

Cost Estimation

While the enforcement and monitoring of the GZO comes during business permitting, the ultimate responsibility to make the necessary on-site improvements will fall on the property owner. Of course, some businesses will own their site, but this does not change the structure of the regulation. According to the Los Angeles County Property Assessor, there are 21 distinct owners for the 44 parcels in both focus areas. Many parcels are registered under a family trust, or a limited liability corporation, so it is difficult to determine who actually manages and rents out each property. Three owners hold non-contiguous parcels. For the purpose of this analysis, I treat non-contiguous sites separately, as owners would likely rent out these sites to separate businesses. Businesses generally prefer to have all operations on one site. Thus, there are 24 sites spread across the two focus areas, with nine in Florence-Firestone and fifteen in East Los Angeles.

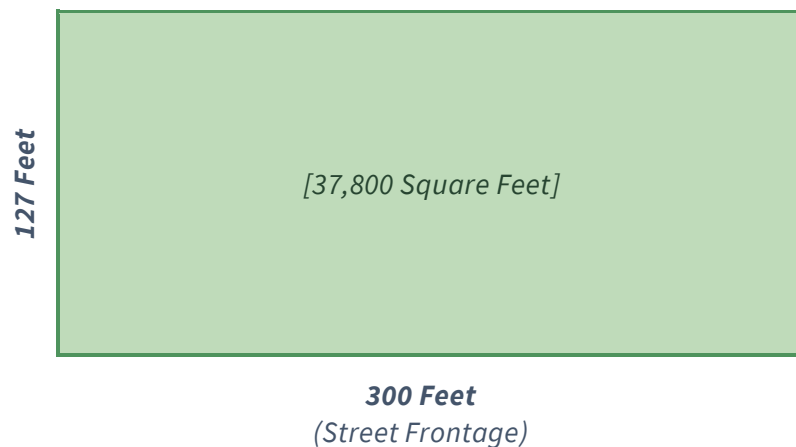
In general, the sites in Florence-Firestone are slightly larger than those in East Los Angeles. They also have more street frontage. Figure 4.3 compares site characteristics across the two areas.

Figure 4.3. Focus Area Median Site Characteristics

Location	Site Area (sq. ft.)	Street Frontage (ft.)
East Los Angeles	35,510	261
Florence-Firestone	40,403	325
All Focus Areas	37,757	297

The typical site—after rounding—is approximately 37,800 square feet, and has 300 feet of street frontage (Figure 4.4). The following cost estimations use this “typical” site as a base model. The baseline industrial site will need to add landscaping, street trees, and a solid wall along the street frontage. Businesses on the site will also need to provide a business identification sign. I assume that the baseline site will have one driveway thirty feet wide for employees, industrial vehicles, and/or customers to enter and exit the property. Thus, the baseline site has 270 feet of street frontage that require the aforementioned improvements.

Figure 4.4. Baseline Industrial Site



Each site will require a solid wall along the entire street frontage, save for the driveway. In addition, each site will need to provide at least 1,350 square feet of landscaped buffer (270 ft frontage · 5 feet setback). Each site will be required to have one tree for every 100 square feet of landscaped area. Thus, the baseline site will need 13 trees (1,350 square feet ÷ 100 square feet, rounding down). The site will also require a business identification sign. However, the typical site will not need additional paving or new enclosed structures; nearly every site in the focus areas was already compliant with these regulations.

Figure 4.5. displays the costs associated with five different perimeter wall types, divided into material and installation costs per square foot. Based on the GZO regulations and the baseline site dimensions, the wall for which costs are estimated is eight feet high, 270 feet wide, and at least six inches thick. The five wall types listed in Figure 4.5 all use concrete, generally the cheapest material included in Square Foot Costs (Doheny, 2019). Most likely, businesses will lean towards cheaper options. A multiplier of 1.11 is used, as recommended

by Doheny (2019), which adjusts the total cost to reflect greater construction costs in southern California.

Figure 4.5. Perimeter Wall Costs

Type*	Materials/SF	Installation/SF	Cost/SF	Total Cost†
A	\$5.65	\$18.10	\$23.75	\$56,943
B	\$5.45	\$6.80	\$12.25	\$29,371
C	\$5.45	\$6.95	\$12.40	\$29,730
D	\$3.21	\$8.05	\$11.26	\$26,997
E	\$3.32	\$7.35	\$10.67	\$25,582

Sources: Doheny, 2019

As mentioned, property owners will likely prefer cheaper options to comply with GZO regulations. Options B through E represent some of the lowest cost options, not just in Figure 4.5, but among all those listed in *Square Foot Costs*: the most commonly used industry publication for construction cost estimation. Of course, owners will choose options based on a number of factors, including costs, existing site conditions, and aesthetics. The above figures represent what is likely to be the lower bound of costs for a “typical” site. The average cost of the four lower cost options (Type B through E) is \$27,920, which includes both materials and installation. This is approximately \$103 per linear foot.

The Los Angeles County Department of Public Works runs an online Tree Services Locator (2020) tool. This tool lists recommended trees for each unincorporated community in the county. I looked through the tree species recommended for the eleven Green Zones communities and noted which species were present on all eleven lists. I then narrowed the species down by spread, water requirements, and growth space. The five species listed in Figure 4.6 are likely to be good options for businesses looking to comply with the GZO. All five require only five feet of growth space, can be placed ten feet from one another, and need very low, low or moderate watering (Tree Services Locator, 2020).

* A: Cast in place Concrete, 8' high, 6" thick, plain finish

B: Tilt-up concrete, 6" thick, broom finish

C: Tilt-up concrete, 6" thick, steel trowel finish

D: Concrete block, 8"x8"x16", hollow, no fill, regular

E: Concrete block, 8"x8"x16", hollow, no fill, lightweight

† Multiplied overall square foot costs by the following factors: 8' (height) * 270' (width) * 1.11 (average regional multiplier across zip codes of Green Zones communities). See Doheny (2019).

Figure 4.6. Recommended Tree Species, Unit Cost

	Vendor 1	Vendor 2	Vendor 3	Vendor 4	Average
Western Redbud	\$55	\$79	\$55	\$60	\$62
Little Gem Magnolia	\$48	\$79	\$85	\$92	\$76
Smoke Tree	\$65	\$79	\$75	\$52	\$68
Chinese Fringe Tree	x	\$59	\$75	\$52	\$62
Narrow-Leafed Pittosporum	\$40	x	x	\$52	\$46

Sources: See Appendix for list of vendors

Figure 4.6 shows per unit costs for the five selected tree species. Cost estimates from local vendors were readily available. I surveyed four vendors in southern California about per unit tree costs. A list of vendors is included in the Appendix. Costs vary by vendor and tree species, but a single tree on average costs approximately \$63 (\$820 for thirteen).

Landscaping costs are far more variable. Even with specific site dimensions (i.e. 1,350 square feet) costs depend on plant species selected, plant spacing, and the mix between cheaper ground cover or turf and more expensive shrubs or flowering plants. Industry publications estimate that landscaping (including materials and installation) runs approximately \$8 per square foot (Doheny, 2019). This figure falls into the ranges listed by various online sources (Landscaping Costs, 2020; Cost to Install Landscaping, 2020).

I used the same approach to estimate sign costs as with street trees. I surveyed four vendors about costs. For consistency across vendors, I estimated costs using a 2-foot by 3-foot sign with pre-drilled holes and masonry mounting. Figure 4.7 displays costs of this base sign for three different sign materials. On average, a basic business identification sign costs around \$98.

Figure 4.7. Business Identification Sign, Unit Cost

	Vendor 1	Vendor 2	Vendor 3	Vendor 4	Average
Aluminum	\$127	\$121	\$87	\$90	\$106
Alumalite	\$107	\$101	x	x	\$104
PVC	\$103	x	\$64	\$91	\$86

Sources: See Appendix for list of vendors

Figure 4.8 shows the costs that the baseline site will need to take on to meet the new GZO regulations. A business located on a typical business will need to pay nearly \$40,000 to comply with the GZO. Since the costs used were conservative estimates, this figure reflects the lower-bound of costs. Of course, this number is a simplification; actual costs may vary widely across businesses, even for the same set of improvements.

Figure 4.8. Typical Costs for Baseline Industrial Site

Improvement	Quantity	Unit	Cost/Unit	Total Cost
Solid Wall	270	Linear Feet	\$103	\$27,920
Street Tree	13	Trees	\$63	\$820
Landscaping	1,350	Square Feet	\$8	\$10,800
ID Sign	1	Signs	\$100	\$100
Total				\$39,640

Other Costs

Besides the hard costs associated with GZO improvements, businesses may encounter a range of other costs. The above analysis looks exclusively at the cost of materials and installation (labor). Each improvement may also come with its own set of soft costs. Over the course of a business's lifespan, all these costs may add up. While it is beyond the scope of this report to quantify every cost associated with the GZO requirements, the following represents a partial list of potential business outlays:

- Landscaping Design
- Site Planning
- Architectural & Engineering
- Permits & Fees
- Demolition (i.e. of existing fencing)
- Grading & Site Preparation
- Equipment Purchase or Rental
- Lighting / Electrical / HVAC (for new, enclosed structures)
- Construction Financing
- Additional Insurance
- Ongoing Maintenance

Not all of these costs will apply to every single business. A business's costs will depend on the extent of its required improvements and current site layout. For example, sign installation is likely to be very straightforward. The processes of adding landscaping and planting trees are also likely to be quite simple, though may require some permits. Complexity increases if landscaping plans require large-scale redesign of site layout. More intensive improvements—particularly those that require construction—will be more complex. A business that needs to construct a perimeter wall may need to demolish an existing fence, find a suitable contractor, develop plans, and prepare the site. In addition, businesses will need to obtain the necessary permits, and pay for additional soft costs, such as insurance or financing. Businesses seeking to pave their lot or construct enclosed structures will likely need to go through a similar process. Again, the above list of costs will not apply to each and every business; rather, such costs will depend on the scope of the required improvements. It is likely that most businesses will encounter at least some of these costs, however.

Paying for Green Improvements

Los Angeles County currently has several funding programs for small businesses. However, none of these programs fund all of the specific improvements required by the Green Zones Ordinance (GZO). Existing funding programs' goals differ from those of the Green Zones Program. In certain cases, small businesses in unincorporated Los Angeles County could use existing funding programs to pay for some of the GZO requirements. However, businesses would need to make other changes and meet further criteria in order to be considered for funding. Thus, most existing programs cannot be easily adapted to fund GZO improvement, though may prove useful in special cases. This chapter provides an overview of different financing mechanisms; analyzes current funding programs available to businesses impacted by the GZO; and summarizes interviews with program staff.

Financing Mechanisms

Los Angeles County has several methods by which it can raise money to help businesses pay for green, on-site improvements. It can use existing tax dollars (general funds) or raise new ones. The County can issue fees on new development or business operations and direct the proceeds towards funding. It can also apply for state and federal grants, issue bonds, or take out loans. Lastly, Los Angeles County can enter into a public-private partnership (PPP). Each different financing mechanisms has unique strengths and weaknesses (Figure 5.1). The County should carefully weigh these characteristics and consider its priorities before choosing any one option.

Figure 5.1. Financing Mechanisms Overview

	Advantages	Disadvantages
General Funds	• Uses existing funding system • Consistent year to year	• Competition for funds
Fees	• Specific fees allow direct allocation of costs for services	• May be unreliable if market slows • Requires more administration
Grants	• Existing sources available • Does not require repayment	• Often highly competitive • May require funding match • Generally one-time or project-specific
Bonds	• Steady funding over bond period	• Requires approval for issuance • Requires full repayment
Loans	• Often easier to obtain • Low- or no-interest financing	• One-time source of funds • Requires full repayment
PPP	• Leverages private funding • Shared risk	• Perceived loss of public control • Requires contract negotiations

Figure adapted from *Getting to Green* (2014).

Enhanced Infrastructure Financing District

In addition to the mechanisms listed above, Los Angeles County also has a relatively new mechanism through which it can raise funds. In 2015, California adopted SB 628, which authorized the formation of Enhanced Infrastructure Financing Districts (EIFDs). These districts allow multiple government entities to voluntarily agree to contribute a portion of their property tax revenue from a defined district for the construction of infrastructure projects. EIFDs thus promote regional cooperation around infrastructure investment and economic development. They can be used to fund traditional infrastructure like parks and transportation improvements, but can also emphasize goals like sustainability, energy efficiency, brownfield restoration, and affordable housing (Day, 2016). Recent examples of EIFDs include one in the City of West Sacramento and one in the City of La Verne.

EIFDs are separate government entities, formed through Joint Powers Authority of cities, counties, and special districts. Entities work together to put together a funding plan that combines sources. Participating bodies do not have to be geographically contiguous. Local governments can form EIFDs without voter approval. In Los Angeles County, Board of Supervisors approval is needed to enter into or form an EIFD (after the project area is determined). Generally, the project area is a geographically small portion of the lead agency's jurisdiction. Once this is done, the lead agency must put together an Infrastructure Finance Plan that lays out a plan for the EIFD and subsequently hold a public hearing. The lead agency then establishes a Public Financing Authority, which governs the formed EIFD. The EIFD gets revenue from the property tax increment from its participating agencies. EIFDs can also issue bonds, but require 55 percent voter approval before doing so. One of the best options for raising funds thus necessitates strong community support (Amador, 2016). EIFDs have other ways to generate revenue. They can use tax increment financing, levy various fees, or take out loans as well.

While EIFDs can bring many benefits, institutional challenges have thus far prevented widespread uptake. Again, EIFDs can significantly aid large-scale planning efforts. They are better suited for comprehensive planning than for raising project-level financing (Amador, 2016). However, administration of an EIFD can be cumbersome and costly. Local jurisdictions are responsible for the ultimate outcomes, but authority is ceded to the state, which oversees Public Financing Authorities (Amador, 2016). Perhaps for this reason, counties have been wary about EIFDs. As one EIFD expert notes: "EIFDs require voluntary and affirmative contributions from participating agencies—but the bias against jurisdictional cooperation largely remains intact" (Randall, 2018, p.2). Los Angeles County recently joined La Verne's EIFD, promising to contribute financial assistance towards development around the city's forthcoming L (Gold) Line station (City of La Verne, 2020).

While it may be difficult to overcome this bias, the upside of doing so is great. Los Angeles County could create an EIFD for the eleven Green Zones communities, or expand its geographic scope to include other communities facing similar environmental justice issues. The EIFD could then help fund green improvements and preserve existing industrial businesses while simultaneously adding affordable housing and restoring brownfields. With the County's recent work with La Verne, there is likely existing experience and

capacity to take on such a project. An EIFD could help small businesses clean up their practices, while also supporting the broader goals of the Green Zones Program.

Selected Funding Methods

In the case that Los Angeles County is able to raise funds to help businesses cover the cost of improvements, it needs to consider how to disburse these funds. Many of the mechanisms by which the County can raise money can also be used to distribute funding. For example, the County can set up a grant or loan program. There are many existing grant and loan programs currently administered by Los Angeles County. The remainder of this section discusses two types of funding methods used by local governments across the United States: revolving loan funds and credit enhancements. Both are popular methods of providing or extending financing to small businesses.

Revolving Loan Funds

A Revolving Loan Fund (RLF) is a gap financing measure primarily used to assist small businesses. An RLF is self-replenishing. As small businesses make interest and principal payments on loans their payments go towards issuing new loans. An RLF simply needs initial capitalization, which generally comes from a combination of public and private sources. Through agencies like HUD, EPA, and EDA, the federal government has several competitive programs that help seed local RLFs. State and local governments also use tax set-asides, general obligation bonds, direct appropriations, or the state lottery fund to capitalize funds (Revolving Loan Funds & Development Finance, n.d.). RLFs administered by public agencies often offer lower interest rates and more flexible terms than in the commercial capital market (Revolving Loan Funds, n.d.).

Figure 5.2. Revolving Loan Fund Overview

Advantages	Disadvantages
• Simple to set up; expertise may exist in-house • Cheap, potentially evergreen source of funds • Can shape eligibility requirements to fit market and program goals	• If government the administrator, requires staff time/expertise • Need to have starting capital • Often slow to revolve, especially when longer term • Must conduct credit analysis on borrower (or risk higher default rate) • Collateral may be required from borrowers

Figure 5.2. lists some pros and cons associated with RLFs. They are effective at providing cheaper access to credit. Across the United States RLFs help small businesses pay for new construction, façade and building renovation, property improvements, or capital equipment. However, they can be limited in their impact. Often, funds revolve slowly, thereby limiting the number of businesses that can be served at once. With the Green Zones Program, hundreds—if not thousands—of businesses will need to make

improvements. A RLF may only be able to fund a handful of these businesses, especially if the pool of funds is small or if loan terms are lengthy.

The Council of Development Finance Agencies publishes guidelines for effective RLF management (Revolving Loan Funds & Development Finance, n.d.). It recommends that agencies issue loans at competitive rates so that RLFs can generate enough interest rate payments to replenish the fund. It also recommends that agencies decide in advance specific loan terms and limits; application and origination fees; and whether applicants need equity to match loans. RLFs are a relatively straightforward way of providing funding for small businesses. However, to set up an effective RLF Los Angeles County may need to make decisions that reduce the fund's popularity with small businesses (e.g. charge application fees, issue loans at market rate, etc.).

Credit Enhancements

Credit enhancements are another way for local governments to get financing to small businesses. A credit enhancement is anything that improves the chances that a loan will be repaid (Credit Enhancements, n.d.). There are several different types of credit enhancements, including interest rate buydowns, loan guarantees, and loan loss reserves. Collectively, they encourage private lenders to issue loans outside their typical credit profile, and can be used to convince these lenders to offer more favorable loan terms. Credit enhancements can thus overcome many of the challenges small and minority-owned businesses face in the credit market.* Michigan Saves uses enhancements to extend financing to small businesses; the program is profiled extensively in the next chapter.

Interest rate buydowns allow borrowers to get financing with more favorable interest rates. A third party provides upfront payments to a lender in exchange for a lower interest rate for a portfolio of loans. Most buydowns last a few years, with subsequent loan payments increasing to a standard rate once the buydown expires. Loan guarantees are third party obligations to assume debt in the case that the original borrower defaults. Since loan guarantees by nature make lending less risky for creditors, it incentivizes lenders to issue loans they otherwise would not. This allows people who have difficulty qualifying for loans acquire financing. Loan guarantors have an incentive to mitigate risk. In particular, public guarantors “must be highly conscientious stewards of scarce public funding” (Loan Guarantees, n.d.). Guaranteed projects should be technically and financially viable. Often, guarantors will limit risk exposure by capping the guarantee amount.

Loan loss reserves (LLRs) operate similarly to loan guarantees. A reserve of funds covers a prespecified amount of loan losses. In cases of default, the lending institution can draw on the reserve to cover losses. Typically, the LLR only covers a portion of the losses (i.e. 80-90%). This ensures that the financial institution retains an incentive to issue high-quality loans. LLRs are commonly used by state and local governments to provide partial risk coverage to lenders. Publicly backed LLRs use public funds to support financial institutions

* For more on credit enhancements and their impact on credit markets, refer to the Literature Review.

in offering more favorable loan terms. Funds can come from a variety of sources, including utilities, contractors, and institutional donors.

LLRs work best when that target market consists of a large number of smaller transactions (Primary Characteristics of Loan Loss Reserve Funds, n.d.). The Green Zones Program will require many businesses to make a range of on-site improvements, many of which will need relatively small expenditures. As a result, the program lends itself well to the LLR model. With an initial pool of funds, an LLR may be more effective than an RLF given the target market as it could get more loans out to businesses without waiting for them to revolve. While a County-backed LLR would require preexisting relationships with financial institutions, it could be a good method to get low-cost financing to small businesses.

Local Funding Programs

Los Angeles County currently has several incentive programs available to small businesses, but few that would help pay for GZO-required improvements. Most of the existing grant and loan programs focus on economic development; they require job creation in return for financial support. The GZO does not directly promote economic development. The GZO produces a wide range of environmental and social benefits, and may also foster upstream economic development through increased demand for certain goods and services, but it does not directly create jobs at impacted businesses. Other programs—such as the EPA’s Brownfields Program—focus on environmental remediation, but these generally require target sites to be far more polluted than most of those that are home to businesses affected by the GZO. Overall, businesses will find it difficult to get program support to make the required GZO improvements. However, businesses and property owners may have some flexibility if they bundle the GZO improvements with other allowable expenditures, such as energy-efficient upgrades. Los Angeles County should provide guidance to small businesses on how they can use other existing programs to partially fund GZO requirements alongside other green improvements.

Figure 5.3. Local Funding Program Interviews

Agency	Level	Program
Dept. of Public Works	County	Recycling Market Development Zone
Dept. of Toxic Substance Control	State	Revolving Loan Fund
Dept. of Consumer & Business Affairs	County	Office of Small Business
LA County Development Authority	County	Various Loan Programs
Internal Services Dept.	County	Property Assessed Clean Energy
Board of Public Works	City	City Plants *
LA County Development Authority	County	SMART Funding

* Businesses affected by the GZO are not eligible to apply for this source, but points raised during the interview about issues like program administration are still relevant to Los Angeles County.

I interviewed staff working on several business incentive programs (Figure 5.3).^{*} All programs, except for City Plants, are theoretically available to businesses located in Green Zones communities. But again, due to various restrictions not all of these programs will be relevant to businesses impacted by the GZO, particularly if they only seek financing to make the GZO improvements.

Interview Themes

Small businesses face several challenges and need support

The current business environment is difficult for small businesses. Between rising rents, an escalating minimum wage, and a potential split tax roll, small businesses face a lot of challenges. As one interviewee put it, “everyone’s just trying to stay alive.” Small businesses differ from larger businesses. They have less capital, and often less capacity to weather tough times. One staff person lamented that small businesses have few protections. Other interviewees mentioned that a lot of small business owners struggle with business operations. These businesses need the most assistance—financial and technical—from the County. In addition, low credit scores create barriers for small businesses looking for funding from traditional sources. As a result, many applicants to County funding programs are those that have significant challenges getting outside financing. These businesses often have no collateral, and little experience with lending. It thus takes a while to structure a feasible deal with these applicants.

Clear communication and simple processes are key

For small businesses, many programs and policies are difficult to navigate. Certain programs require a lot of supporting documentation, such as tax returns going back several years. Large businesses may have on-staff accountants to complete program applications, whereas small businesses often struggle. One interviewee stated that small businesses take longer to apply for programs. In addition, many small business concerns involve complex topics that are not well communicated. An interviewee from the County’s Office of Small Business noted that many staffers are too technical, which is frustrating for small businesses. The Office tries to respond to these concerns and distill complicated policies. With any new program, Los Angeles County should seek to make the application process as straightforward as possible. The County should also distill information about the GZO and any associated funding programs into clear, essential points. As one staff person noted, simple factsheets in multiple languages can go a long way in helping small business owners figure out certain programs and policies. DRP’s webpage on the Green Zones Program already has some flyers in both English and Spanish.

Funding programs tend not to support that many businesses

While Los Angeles County has several different funding programs, these programs only support a small number of businesses. LACDA’s portfolio in its entirety only amounts to 30-

^{*} For a more detailed description of interview methods, see the “Data & Methods” chapter. A list of interview questions is included in the Appendix.

40 loans. One reason for this may be the challenge of working with businesses. According to a staff person working on the Property Assessed Clean Energy (PACE) financing program, businesses will often request modified loan contracts. This adds both cost and complexity. As a result, the County has only a few commercial PACE projects, compared to a much larger portfolio of residential projects. Most likely, a bigger reason is the significant amount of funding different programs provide. For example, the SMART funding program only funded four or five businesses in the last year, but most businesses received over a million dollars in funding. Similarly, with RLFs money is often slow to revolve, especially when the loan amount is large and the term long. With any funding program, Los Angeles County has to balance the number of loans with the amount of funding available. There is no one recommendation on how to best do this; different approaches have different strengths and weaknesses. However, with the Green Zones program it may make sense to disburse smaller amounts to a greater number of businesses.

Prevailing Wage requirements may turn applicants away

Numerous interviewees noted the difficulties caused by prevailing wage requirements. The cost associated with these regulations turns businesses away. According to one staff person, prevailing wage requirements add 20-30 percent in additional cost to a loan. Another interviewee mentioned that this additional cost means the County is no longer a competitive lender, even if other loan terms are more favorable than on the commercial capital market. As a result, applicants tend to avoid using certain loan programs for construction. While the LACDA's Tenant Improvement Loan Program does not require prevailing wage, the Manufacturing Loan, Revolving Loan, and SMART Funding programs do. With these programs, borrowers will instead purchase machinery or other capital goods that do not trigger prevailing wage. One staff person concluded by calling for a pool of money that could fund construction without prevailing wage. This sort of funding pool may be unrealistic given current local and state laws. The GZO will require many businesses to undertake new construction projects (i.e. solid walls or enclosed structures). In developing a new funding program alongside the GZO, Los Angeles County should be aware of the challenges small businesses see with prevailing wage, particularly how it impacts demand for construction.

Staff capacity and funding are ongoing challenges

Staffing and funding limitations were the two most common challenges mentioned during interviews. For example, an interviewee with the Department of Consumer and Business Affairs noted the difficulty of directly assisting all businesses that need it while also proactively developing resources like multilingual factsheets, how-to videos, or marketing materials. With only a few dedicated staff members, work can pile up. Funding particularly is an issue. Many existing programs derive funding from one-time allocations, such as a competitive state grant. Others that receive more regular allocations (like from the general fund) are highly dependent on the political climate. One interviewee noted that a number of loan programs have come close to being cut in the past. Fees are one way to maintain a relatively consistent funding stream, but they are unpopular among businesses.

Many government agencies lack financial expertise

Financial and lending expertise is often unrelated to planning or scientific knowledge. California's Department of Toxic Substance Control has struggled getting RLF money out to businesses. While the department is well equipped to deal with scientific matters, it lacks expertise on the financial side, and thus cannot do all of the underwriting in-house. Furthermore, many businesses have previous relationships with lenders, and do not want to transition to an unproven financing source. Meanwhile, PACE loans are issued by a third-party lender. Lenders go through a competitive solicitation process, which the County uses to negotiate more predictable and favorable loan terms (e.g. an interest rate of 5-9 percent). The third parties handle both the lending and administrative work. At least on the residential side, this structure facilitates a far greater number of loans.

Funding for on-site, green improvements is not currently a priority

There are few resources available to small businesses hoping to green their sites and practices. Existing programs are not really set up to cover the improvements required by the GZO. As one interviewee stated, "there is nothing within the County specifically for going green [as in the GZO]." According to a staff person at LACDA, small businesses have more pressing issues to worry about than going green. The County's small business resources reflect these priorities. Similarly, a different interviewee mentioned that greening efforts, such as tree planting programs, are "always the first to get cut" in the budget. Some funding programs are pretty expansive. Likewise, private financing is readily available to some businesses. Businesses could potentially use either of these methods to fund GZO improvements, but few resources exist to lower the cost of these improvements.

Other Relevant Programs

There are two other programs available to local small businesses that may help fund GZO improvements. LACDA's RENOVATE program provides grant funds for business façade improvement, including any design and engineering work. Meanwhile, the Metropolitan Water District's Commercial Turf Replacement program helps businesses transition to water conscious landscaping through rebates. I was unable to interview staff at either of the programs to confirm that they could fund GZO requirements.

With RENOVATE, eligible businesses could use grant funds to pay for certain GZO improvements, including—potentially—signs, solid walls, and landscaping. However, businesses must be located on County-designated commercial corridors or in retail centers (RENOVATE, n.d.). It is likely that this requirement excludes most industrial businesses in Green Zones communities, though some may still be eligible. Meanwhile, through the Commercial Turf Replacement Program the Metropolitan Water District offers rebates of \$2.00 per square foot of converted yard. However, it requires conversion from traditional turf grasses to more sustainable varieties. It is unlikely that this program would pay for new landscaped buffers and street trees.

Summary

Los Angeles County has several different options to obtain funds to help businesses make GZO improvements, such as using general funds, issuing bonds, or applying for external grants. Different funding mechanisms have various strengths and weaknesses; the best option depends entirely on the County's priorities and values. However, one ambitious, but strong alternative involves setting up an Enhanced Infrastructure Financing District (EIFD) to raise funds. There are only a few examples of this model in California, and setting one up requires a lot of work. However, an EIFD could be extremely useful in raising funds for small businesses while also supporting the other aspects and goals of the Green Zones Program.

Similarly, there are a number of ways to disburse funds to small businesses, including grants and loans. Two popular strategies on the public-sector side are revolving loan funds (RLFs) and credit enhancements. Based on the cost of the GZO requirements and the limited timeframe businesses have to apply, Los Angeles County should avoid the former. While a sound model, an RLF would not get funding to enough businesses in a short span of time. They are ineffective when there is great demand for funding all at one time.

In contrast, credit enhancements may be a much better strategy for the County to consider. Through a loan loss reserve (LLR), to name just one method, Los Angeles County could leverage a far greater amount of private funds, while still ensuring that loan terms are fair and predictable. There are several good examples of LLRs within California, including GoGreen Financing, which is administered by the California Alternative Energy and Advanced Transportation Financing Authority in the State Treasurer's Office (About the Program, 2020). Also, the Small Business Loan Program run by the California Pollution Control Financing Authority relies on the LLR model (California Capital Access Program for Small Business, 2020).

Staff working on existing funding programs in Los Angeles County have a great deal of knowledge about program administration and small business needs. In interviews, they repeatedly noted the importance of clear communication, the challenges of funding tied to prevailing wage requirements, and ongoing issues of limited resources. They also mentioned that there are few resources in the County for going green and that many public agencies lack the financial expertise to independently operate a loan program. For all future business incentive programs, Los Angeles County should note this advice, and use it to improve their operations.

Small Business Support Programs

I used four case studies from across the country to ground my ultimate recommendations for Los Angeles County. The cases profiled include three public sector programs from Los Angeles, Philadelphia, and National City, CA, and one public-private partnership from Michigan. Los Angeles County's Green Zones Ordinance is unique. Few other jurisdictions' zoning changes require existing businesses to make on-site improvements along with new ones, and none—to my knowledge—do so for the specific regulations proposed in the draft ordinance. As a result, there are no financing programs in the United States that correspond exactly to the goals and methods of the County's Green Zones Program. I thus looked at a sample of financing programs that support green, on-site improvements—for example, clean energy upgrades and green infrastructure—on private, commercial properties. These cases were not perfectly analogous to the Green Zones Program, so the ultimate recommendations may be biased. However, because these case studies had the same overarching goal (greening) and property ownership structure (private), I argue that they are representative and have much to teach Los Angeles County.

Los Angeles, CA – Clean Up Green Up

The City of Los Angeles passed the Clean Up Green Up (CUGU) ordinance in 2016, following a decade of community organizing. CUGU applies to three communities within the city: Pacoima, Boyle Heights, and Wilmington. In these districts, new and expanding businesses must reduce their environmental impact on surrounding residents. CUGU requires these businesses to implement a range of design-related regulations through the City's zoning code.

In 2006, grassroots community organization from the aforementioned neighborhoods joined together to form the Los Angeles Collaborative for Environmental Health and Justice (Los Angeles: Clean Up Green Up, 2018). Residents in these communities faced outsize environmental impacts from the many industrial uses nearby, impacts that compounded historic discriminatory land use practices. Michele Prichard, Senior Director at Liberty Hill—an organization heavily involved with CUGU—states: “what is really evident here is a systemic land-use problem, where we have conflicting land use, we have sensitive populations of children and families ... day by day exposed to these hazardous chemicals” (Solomon, 2019). From its outset, the Collaborative organized against the concentration of environmental hazards in their neighborhoods, and sought to use community power to change the zoning code (Solomon, 2019).

Existing regulatory measures were inadequate to address incompatible land uses. Furthermore, the broader system of uncoordinated facility-by-facility regulation was itself an issue. This method of monitoring and regulating industrial uses failed to recognize the cumulative environmental impacts such uses produced, and thus did not adequately

protect human health (*Hidden Hazards*, 2010). In response, the Collaborative started a community-based research and ground-truthing process. Residents documented the existing hazards and sensitive land uses in their communities, generating key data that would inform the creation of CUGU. They found that publicly available data only partially capture level of toxic air pollutants in a neighborhood. They also noted that the environmental impact of several small businesses clustered together can be just as great as that of a single, larger business (*Hidden Hazards*, 2010).

All the organizing made a difference. In 2013, the Los Angeles City Council directed the Department of City Planning to begin working on what would become the Clean Up Green Up initiative. Three years later, City Council approved the final ordinance. CUGU applies to the communities where organizing started: Pacoima, Boyle Heights, and Wilmington. The ordinance explicitly calls back to the issues that galvanized communities. It states:

the cumulative environmental impacts resulting from concentrated industrial land use, on-road vehicle travel, and heavily freight-dominated transportation corridors in close proximity to homes, schools and other sensitive uses is a pervasive problem in Los Angeles ... Local land use regulations can be an effective tool to address multiple emitting sources and foster community transformation with new development standards (CUGU Clean Up Green Up District, §13.18, 2020)

The ordinance requires all new and expanding businesses to reduce their environmental impact on nearby residents through various on-site measures. New developments within 1,000 feet of a highway must implement more stringent air filtration standards. Meanwhile, any new business adjacent to a “publicly habitable space” (e.g. residence, school, park, etc.) must comply with requirements on signage, perimeter walls, landscaping, and enclosure, among others (CUGU Clean Up Green Up District, §13.18, 2020). These developments must also adhere to stricter setback, stepback, and height regulations.

Supporters of the ordinance sought to balance environmental and economic goals. Certainly, some industrial businesses in these communities skirted environmental regulations; indeed, their behavior catalyzed initial organizing efforts. Still, many community residents worked for local industrial businesses, and not all industrial businesses were bad actors. The Collaborative thus sought to institute good labor practices that were sensitive to the environment while preserving the local employment base. It also highlighted local community business owners that personally backed the bill. As Darryl Molina Sarmiento, Executive Director at Communities for a Better Environment, states: “we want jobs and a clean environment” (Kimbrough, 2017, p.6).

Business groups had conflicting roles in the creation of the ordinance. The Los Angeles Chamber of Commerce came out against the ordinance, but the Los Angeles Business Council supported the effort. A draft of the ordinance targeted oil refineries. However, after significant opposition from the refineries, the City dropped specific sections applicable to that industry. Though they are some of the biggest polluters in the region, refineries are

largely exempt from major regulations. To gather business input, the City created an ad hoc business advisory committee that met consistently. A planner with the City of Los Angeles mentioned that large businesses were well represented on the committee, but less so small businesses.

Both the City and community groups worked with small businesses to gather feedback about the proposed regulations and existing resources for businesses. Owners and other stakeholders pushed for additional funding that could help them green their practice. They also stated that existing resources were largely unhelpful. While the City had rebate programs that could offset the cost of certain improvements, the programs were difficult to find and navigate. Many were poorly advertised, and some had strict requirements that made qualifying for them challenging. In addition, the application process was not always straightforward. Overall, many small businesses found applying to the existing programs not to be worth their time and effort.

To address this issue, the City of Los Angeles created an ombudsperson position within the Board of Public Works. The ombudsperson was supposed to help businesses navigate the permitting process, publicize funding resources, and answer questions about the program. However, it is not clear that this effort was successful. One interviewee mentioned that hiring for this position took eight months. The eventual hire was not a planner by training, and interviewees identified a disconnect between that role and the zoning regulations. Overall, the ombudsperson did not produce many positive, identifiable outcomes. Recently, the City hired a new person for the position and drafted a new work plan for CUGU. Interviewees looked forward to the position being more proactive.

A lack of coordination between different public agencies posed another challenge to CUGU. One interviewee wished that there was more interaction between the City, the South Coast Air Quality Management District (SCAQMD), and the Regional Water Quality Control Board. Another interviewee echoed that sentiment, adding that “all agencies have to work together to get this done.” Once Los Angeles adopted CUGU, it was often unclear which agency—or even which City department—had regulatory power in each area. This challenge was especially prevalent with regard to permitting. Community groups had long complained that many industrial businesses operated without the necessary permits. However, regulatory bodies were relatively siloed from one another. An inspector checking for industrial wastewater permits could not simultaneously inquire about air quality permits, for example. At the same time, certain businesses learned how to evade regulation. A representative of a community organization notes that many industrial businesses continue to operate and dump at night, despite prohibitions.

Of course, CUGU led to victories as well. Pacoima, Boyle Heights, and Wilmington now have zoning overlays that mandate certain land use practices. All new, expanding, and significantly redeveloped businesses are required to comply with the standards set by the ordinance. Separate from the land use regulations, most buildings—new and existing—installed MERV 11 and 13 filters, which prevent a majority of particulate matter entering the ambient atmosphere following CUGU’s passage. CUGU represented one of the first

times that incompatible land uses were framed as an equity issue. The text of the ordinance explicitly acknowledges that “environmental impacts are primarily borne by communities with concentrated poverty and associated socio-economic stresses” (Clean Up Green Up District, §13.18, 2020). It thus helped change the narrative around land use planning in disadvantaged areas. Lastly, the City continues to meet regularly with community members and organizations. For example, the City hosts a CUGU working group in which leaders from community organizations provide input on the progress of implementation. The City conducts its external presentations in both English and Spanish. And the City recently drafted a new work plan that incorporated substantial feedback from community organizations (including points raised by the working group) on how to improve the program.

Takeaways

Los Angeles County’s Green Zones Program was inspired, in part, by CUGU, and the two programs share many similarities. Like CUGU, the Green Zones Ordinance applies to a subset of communities rather than the entire jurisdiction. It requires new businesses to comply with regulations on landscaping, signage, and enclosure, among others. And, it uses the zoning code to address cumulative health impacts stemming from incompatible land uses. However, in contrast to CUGU, the Green Zones Ordinance does not exempt existing businesses. It was also initiated by a public agency, rather than community organizations, though both cases included an extensive public outreach process. Because of their many similarities, the County’s Green Zones Program can take lessons from CUGU.

The compromises that led to CUGU’s passage offer lessons on policy implementation. In that case, the City passed CUGU without creating any sort of business incentive program. The lack of a dedicated funding program made it harder for businesses—especially small businesses—to pay for the necessary improvements. Had CUGU come with a corresponding funding program to offset these expenses, perhaps the policy would have enjoyed greater support from the business community.

In addition, CUGU demonstrates the necessity of regulatory enforcement. Following CUGU’s passage, some businesses deliberately skirted regulations. Community members remarked that some auto body shops continued operations late into the night, which was prohibited by CUGU. Other businesses continued illegally dumping waste. With a multi-pronged policy like CUGU, simple oversight often failed to capture the full extent of business noncompliance. Regulators that only monitored one environmental aspect (e.g. air emissions) missed ongoing violations in other parts of the business.

A relative lack of interagency cooperation and coordination was a clear weakness of CUGU. With multiple City departments involved, and little clear delineation of responsibilities, CUGU lacked clear direction in its initial years. Furthermore, the ombudsperson failed to clear up this confusion and was largely ineffective. As an even larger political entity, Los Angeles County should pay careful attention to this lesson. Responsibilities for various aspects of the Green Zones Ordinance should be clearly established from the beginning.

Leadership should be familiar with planning principles and rules. Regional environmental agencies, such as SCAQMD should be included, and their role precisely articulated.

Finally, CUGU shows the importance and power of community organizing. CUGU would not have happened without community action, and it is imperative that public agencies work with community groups and stakeholders to implement any new regulations. In recent years, community organizations continue to expose persistent business violations. Communities come with a wealth of local knowledge and are thus a great resource for public agencies. The Green Zones Program would benefit from the involvement of community members and community-based organizations, at all stages of program rollout: policy brainstorming, implementation, monitoring, and enforcement.

Philadelphia, PA – Greened Acre Retrofit Program

The City of Philadelphia offers a variety of grants for green stormwater infrastructure. In particular, Greened Acre Retrofit Program (GARP) grants incentivize green infrastructure projects on private land, which help the City meet its stormwater management goals. GARP benefits from project aggregation, in which multiple improvements across different projects are pooled together. This innovative approach helps reduce costs, and also results in more effective and widespread stormwater management practices.

An older, industrial city, Philadelphia has a combined sewer system that uses the same infrastructure for both wastewater and stormwater. As a result, combined sewer overflows—which can occur during intense storms—are a major issue, since they include wastewater. Overflows can cause property damage, spread disease, and make residences unlivable. Historically, Philadelphia has experienced a lot of combined sewer overflows. The City signed a consent agreement with the Environmental Protection Agency (EPA) in 2012 promising to reduce overflows by 85 percent (Stutz, 2018). Before that decree, Philadelphia stepped up its efforts to manage stormwater. In 2011, the City launched a 25-year plan called Green City, Clean Waters, which—at the time—promised to be “the most extensive green stormwater infrastructure program ever envisioned in this country” (Browne, 2019). Green City, Clean Waters benefited from a robust public engagement process. When rolling out the initiative PWD did considerable outreach with the public. Continuing today, when the City works on infrastructure projects PWD solicits community input during design, planning, construction, and following completion (Browne, 2019).

Philadelphia adopted many approaches to promote stormwater management practices. The EPA praised these efforts in the consent decree, noting that “in seeking efficient sustainable integrated solutions to wastewater and stormwater issues, the City has fully embraced the application of green stormwater infrastructure” (AOCC, EPA Reg. II, 2012). Philadelphia first ramped up its own green infrastructure rollout. The Philadelphia Water Department (PWD) modified its stormwater billing, offering reductions in exchange for green infrastructure implementation on private property. Lastly, PWD launched its Stormwater Management Incentive Program (SMIP), a traditional subsidy program.

However, these strategies fell short of expectations. The City's own efforts to build out green infrastructure proved to be very expensive. For one, the City's installations were limited only to scattered publicly owned sites. And between street closure requirements, coordination problems among different agencies, and right-of-way conflicts, each acre of green infrastructure cost approximately \$250,000 to \$300,000 (Stutz, 2018). Other efforts also experienced challenges. Even as PWD offered an 80 percent reduction in stormwater fees for on-site stormwater management, few property owners voluntarily installed green infrastructure (Valderrama & Davis, 2015). Based on the reduced fees alone, retrofits did not produce a reasonable return on investment for property owners. SMIP similarly saw a low application rate, and the total number of projects completed remained low. The process was difficult for property owners to navigate (Valderrama & Davis, 2015).

In response, PWD launched GARP, building upon previous efforts to promote stormwater management on private property. Like PWD's other stormwater grants, GARP incentivizes private green infrastructure development. However, in contrast to other programs, it encourages contractors and other third parties to submit applications (Valderrama & Davis, 2015). Projects must encompass large areas, often spanning multiple properties and owners. PWD recommends projects to be at least ten acres (Philadelphia Water Department, 2019).

The benefits of this approach are myriad. GARP's structure shifts the burden of development onto contractors that are more knowledgeable about the process. Contractors, of course, benefit from a program that rewards their expertise. One interview participant noted that the program has been a major moneymaker for green infrastructure contractors, and all interviewees reiterated how busy and popular the program has been since its inception. At the same time, property owners benefit from these contractors identifying cost-effective solutions that in turn reduce stormwater fees and—in some cases—improve property value (Valderrama & Davis, 2015). Finally, GARP requires that participating contractors pay prevailing wage, so workers receive greater pay than they would for similar, non-GARP projects. The City also has inclusive participation requirements, which give smaller, minority- and women-owned business enterprises the opportunity—as one interviewee stated—to "compete on equal footing with larger firms."

Although the program structure (i.e. contractors as applicants) is itself effective, project aggregation is what drives results. GARP encourages design and construction firms to bundle, or aggregate, multiple projects together (Valderrama & Davis, 2015). By "reducing transaction costs, increasing economies of scale, and spreading risk across multiple projects," project aggregation helps lower overall costs, and increases the likelihood of a positive return (Valderrama, et al., 2013). It also spreads green infrastructure around the City, instead of concentrating installations on a few, large sites. Through the end of 2017,

Philadelphia saw 1,073 greened acres completed; 847 of which were on private property (Stutz, 2018).*

PWD evaluates applications on a range of metrics. Projects are given favorable scores if they maximize the feasible right-of-way area, are cost-effective (less than \$200,000 per greened acre), and if the property owner commits additional funding (Stormwater Grants Application Guide, 2019). PWD also looks at the cost to the City, as well as the quality of the long-term maintenance plan. PWD's grants cover only a portion of the green infrastructure cost, generally \$90,000 per greened acre (Valderrama & Davis, 2015). By not setting a subsidy rate, and evaluating projects based on cost, PWD incentivizes projects that can be completed at a lower cost. Irrespective of total, under GARP the City's cost per greened acre is a less than half of what it would cost for a similar installation on public land. The program is competitive. One interviewee stated that all applications that were complete and met the technical requirements were approved early on in the program's history; now, funding requests exceed the available pool of money.

GARP has certain monitoring requirements. After PWD selects projects for funding, the grant goes through PIDC, a nonprofit that manages economic development programs for the City of Philadelphia. PIDC manages the grants on PWD's behalf. During and after construction, successful applicants must submit milestones. Once a project is completed, PWD approves invoices and provides reimbursements. Although contractors ultimately apply, all projects must get the property owner's approval. The same flexibility now extends to other stormwater grants. Anyone can apply for a stormwater grant, so long as they have the property owner's permission (Stormwater Grants Application Guide, 2019). In addition to owners and contractors, tenants, community groups, non-profits, and businesses can apply with an innovative, cost-saving project. For all stormwater grants, PWD requires property owners agree to operate and maintain the green infrastructure for 45 years.

One challenge facing the program is the uncertainty around long-term funding. Funding for GARP and the other stormwater grants comes out of PWD's operating budget. This funding is not set from year to year; rather, it must be negotiated each year. At the end of the fiscal year, program staff learn how much grant funding is available the following year. This may create challenges for long-term program planning. Contractors may also be hesitant to take on large-scale aggregation projects if they cannot expect funding once planning is done. Another, similar, issue comes with hidden costs. An interviewee from PWD noted that hidden costs come with increased program popularity.

Like California, the City of Philadelphia requires prevailing wage on publicly funded projects. However, unlike certain grant programs in Los Angeles, GARP remains highly popular in spite of the higher wages contractors must pay. One possibility is that the cost

* Not all of greened acres on property were funded through GARP. Some projects used the traditional SMIP grants and some were installed voluntarily without grant aid. In addition, the City requires green infrastructure be installed on all new developments and redevelopments above a certain size.

savings associated with project aggregation—and reduced stormwater bills—more than offset any wage premium associated with prevailing wage. If this is the case, then GARP’s model of promoting cost-effective and aggregated projects run largely by private contractors presents one potential strategy for municipalities to promote good, green jobs within their jurisdiction.

Takeaways

The Greened Acre Retrofit Program (GARP) demonstrates that project aggregation can create significant cost savings. Requiring applicants to bundle multiple projects together allows the Philadelphia Water Department to select those that achieve the best result most efficiently. A key aspect of GARP is that contractors are encouraged to apply. As a result, those most knowledgeable about the construction process and its costs are that same people that ultimately apply. The GZO will require many businesses—many of which are near each other—to make very similar modifications at the same time. The GZO thus lends itself well to project aggregation. Regardless of what sort of funding program the county implements, it should promote project aggregation to save businesses money. From a staff resource perspective, it is likely to be easier to fund a few larger projects instead of many smaller ones. Since the end results are the same, aggregation is likely to be a good strategy for Los Angeles County, particularly if it can raise the necessary funds to start a grant program.

Beyond just contractors, Los Angeles County should also consider opening up applications to a wider audience. The GZO already allows businesses to comply with regulations through alternative measures. DRP and Los Angeles County could promote certain community-involved modifications to the GZO. For example, businesses could allow community groups to adopt and maintain their landscape buffer. Industrial land does not naturally lend itself to uses like community gardens. However, as set by the GZO, all affected businesses will be no more than 500 feet from a sensitive use. Across Los Angeles County, most “sensitive uses” will be residential zones. As seen in site visits, there are numerous industrial businesses that currently border residences. In these cases, some sort of agreement between businesses and community groups could save businesses money, create a new community amenity, and still fulfill the requirements set forth in the GZO.

As with many other programs, funding for GARP is uncertain. Since the money comes from the general fund, it needs to be negotiated on an annual basis. Uncertainty surrounding long-term funding is not unique to GARP or Philadelphia; all municipalities must deal with limited resources to an extent. However, with a program as successful as GARP, long term assurances are important. Los Angeles County could use general funds, or a one-time grant to seed a program initially. This may be a good opportunity to test out some new ideas. However, if that program ends up being successful, it will be important for Los Angeles County to figure out how to sustain it for a longer period.

Michigan Saves

Michigan Saves is nonprofit that helps residents, businesses, and municipalities make green and energy-efficient improvements. The organization touts itself as “the nation’s first nonprofit green bank” (Michigan Saves, 2020). A green bank is “a public, quasi-public or nonprofit financial institution that facilitates private investment in clean energy” (2018 Annual Report). It channels financing towards low-carbon and climate-resilient technologies and infrastructure. In this vein, Michigan Saves works with private lenders to offer reduced interest financing for these sorts of investments.

The program is set up as a public-private partnership. Michigan Saves is not a lender, but rather uses credit enhancements to leverage private capital. The organization works with a network of private-sector lenders who provide the loans. As part of the agreement, these lenders offer loans at interest rates lower than what they would normally charge. Each lender still conducts its own underwriting process; each goes to the market with its own financing terms and sees if borrowers are eager to accept their terms. However, due to the loan loss reserve, the loans lenders issue are typically below market, or go to borrowers that otherwise would have trouble acquiring traditional financing. Figure 6.1 shows the variety in commercial loan terms that participating lenders offer to businesses.

Figure 6.1. Commercial Loan Terms, Selected Michigan Saves Lenders

	Ascentium Capital	DLL Financial Solutions	NEIF	Inclusive Prosperity
Minimum Amount	\$5,000	\$5,000	\$250,000	\$50,000
Maximum Amount	Based on Credit	Based on Credit	Based on Credit	\$2,000,000
Fixed Interest Rate (Starting At)	7.42% APR	7.25% APR	6.50% APR	6.62% APR
Maximum Term	84 Months	120 Months	144 Months	240 Months

Source: Commercial Building Financing (2020)

In turn, Michigan Saves provides a credit enhancement in the form of a loan loss reserve. If borrowers default, Michigan Saves compensates the lender out of the reserve. Thus, the loan loss reserve functions as a “backstop” that mitigates lenders’ risk and allows them to extend less expensive loans (Balaskovitz, 2020). However, lenders do not receive 100 percent of the loan value, which may guard against moral hazard. The impact of the loan loss reserve on loan rates is significant. For example, one lender offers an unsecured loan at 4.99 percent APR for people with a credit rating as low as 640 (Graham, 2018). Generally, an unsecured loan to a borrower with that sort of rating would carry an interest rate of 17 percent or higher. Such a favorable loan was previously “unheard of,” according to a Michigan Saves spokesperson (Graham, 2018). Certain loans come with even further reduced interest rates as the result of interest rate buydowns. A group of utilities in the

state contributed funds to lower interest rates to zero for certain energy-efficient improvements.

Loans can be used to pay for a range of green improvements. Common projects include energy-efficient appliances, LED lighting, and solar panels. Over the past couple years, Michigan Saves expanded commercial projects to include electrical vehicle charging stations, wind turbines, and green infrastructure (2018 Annual Report). Loans generally go to residential or commercial users, with the majority issued to the former. In 2018, 73 percent of the \$191 million of total investment went to residential users (2018 Annual Report). Residential loan amounts vary depending on the project, but can be as high as \$30,000 (Sullivan, 2018). The residential program has grown continuously since 2014. Michigan Saves staff mentioned that the total value of residential loans issued in 2019 was 23 percent higher than in 2018. Meanwhile, commercial loan values held steady across the two years. According to the organization's 2018 Annual Report, 19,113 residential homes and 1,293 commercial buildings received financing that year. Commercial loans are generally larger—up to \$200,000 or even greater—since those improvements tend to be more expensive.

Michigan Saves even works to provide financing at the municipal level. For example, the City of Fraser—a town of about 14,000 residents outside Detroit—used Michigan Saves to finance LED streetlights (City of Fraser, 2020). The City lacked the budget to pay for these upgrades directly. Bond financing and private capital each came with their own challenges. Through Michigan Saves, Fraser financed \$236,857 with a 1.99 percent interest loan from DTE Energy which paid for the installation of 825 LED fixtures throughout the town. These upgrades now save the City about \$67,000 annually on energy costs. Public Works Supervisor Nick Schaefer remarks: “we could not have done this project without Michigan Saves. It was costing us money every day we waited ... with Michigan Saves, we were saving taxpayer money from day one” (City of Fraser, 2020).

Michigan Saves also works with a network of contractors. As of the end of 2018, there were 649 authorized contractors affiliated with Michigan Saves (2018 Annual Report). The contractors install the improvements (e.g. solar panels) on residential or commercial property. Michigan Saves monitors this network, and recognizes those with advanced training (Michigan Saves, 2020). When borrowers want to make upgrades or installations, they first select an authorized contractor suited to the task at hand. Then, with an idea of project costs, they can approach lenders to acquire the financing needed to pay for the infrastructure and installation costs.

The Michigan Public Service Commission created Michigan Saves in 2009 (Balaskovitz, 2019). The program launched the following year with the help of \$10 million in state and federal funds to seed the loan loss reserve fund. Later, the Department of Energy enhanced the fund; it now holds \$12 million. Michigan Saves formed to fill gaps in the market for affordable financing for energy efficiency. Since then, Michigan Saves has helped finance over 20,000 residential and commercial projects that have led to utility bill savings in

excess of \$30 million (Balaskovitz, 2020). These projects generated \$225 million in private clean energy spending.

In its decade of existence, Michigan Saves has been very successful. As mentioned, it helped finance over 20,000 projects worth millions of dollars. Furthermore, the program has been a model green bank for fledgling programs, and frequently gets requests from other green banks for help starting up. Montgomery County (Maryland) and Washington, D.C. both based their green banks on Michigan Saves. California now has a program called GoGreen Financing that operates similarly to Michigan Saves. According to program staff, Michigan Saves continues to be a “leader in the market.”

Overall, the program is well run and well leveraged. Michigan Saves rarely interacts with borrowers. Instead, customers work directly with lenders while Michigan Saves stays in the background and monitors everything on the back end. The program was designed to be as straightforward as possible for borrowers. Michigan Saves has no pre-approval process. Potential borrowers choose from an extensive list of contractors to find the right product for their needs. They apply directly to lenders—Michigan Saves does not look at applications at all—and can often receive same-day decisions. As a result, the program runs very smoothly. Though applying is very easy, the loan portfolio is still quite safe. In the beginning, Michigan Saves backers expected to have a five percent default to value ratio. However, the program only sees a ratio of 1.5 percent. Borrowers going through the program are generally very good at keeping up with payments, and lenders do not take on much risk when issuing Michigan Saves-backed loans. It thus does not appear that the model incentivizes moral hazard.

Michigan Saves is also self-sustaining. Aside from the initial grants, Michigan Saves does not need external funding. The program generates revenue through a 1.99 percent contractor fee on every loan issued. This fee helps cover all operational costs for the program. Michigan Saves also has some referral and document fees that add to its revenue. Not reliant on third parties for funding, Michigan Saves is flexible and able to plan ahead without being worried about long-term sustainability.

Despite its success, Michigan Saves still faces challenges. One ongoing issue is the regional energy market. One lender noted that Michigan has had relatively low electricity rates in recent years. Since energy costs are already low, many potential borrowers do not have as much of an incentive to invest in energy-efficient improvements. Any loan program must necessarily contend with the demand for financing. Even a simple, low-interest loan program may experience low take-up if external factors diminish the need for financing.

A larger barrier is the limited loan loss reserve. With each loan issued, Michigan Saves encumbers five percent of the total loan value. The lender maintains the five percent balance in a loss pool, which is constantly fluctuating. As Michigan Saves grows, a growing number of loans will encumber more and more of the loan loss reserve. Program staff estimated that the existing reserve could be fully encumbered as soon as 2023. At that point, Michigan Saves may not be able to cover defaults. The same staff member noted

that Michigan Saves will need to change its structure or enhance the loan loss reserve. The latter is more straightforward, but obtaining the necessary funding—millions of dollars—is challenging.

Takeaways

Michigan Saves is a highly effective program that demonstrates the value of credit enhancements. With its LLR, Michigan Saves helps facilitate thousands of residential and commercial loans at below market rates. The LLR allows Michigan Saves to leverage a far greater amount of private capital than it could disburse on its own. This method drastically increases the number of businesses that have access to favorable loan terms. Despite the ease of acquiring financing, the Michigan Saves loan portfolio is far safer than initially anticipated. Only 1.5 percent of borrowers default on their loan, in which case the LLR covers the loss. Meanwhile, fees help cover the administrative costs and make Michigan Saves self-sustaining.

While LLRs do not need to be structured as a public-private partnership, this organization makes a lot of sense for Michigan Saves. Staff at Michigan Saves are certainly knowledgeable about lending, but they do not need to be experts since third party lenders issue all the loans. Meanwhile, Michigan Saves staff handle all the monitoring and outreach. For the number of loans issued through the program, the total number of dedicated staff is relatively small. The public-private partnership extends beyond just lenders. Michigan Saves oversees a network of contractors with pre-selected packages for consumers. Thus, when borrowers want to make energy-efficient improvements, they can select from a range of qualified vendors and know they will get a reputable product that is eligible for financing. The Michigan Saves model thus lets each partner focus on its strengths, while saving consumers a lot of headaches.

Indeed, Michigan Saves also demonstrates the value of simplicity. Both vendors and lenders offer qualified packages to consumers. Consumers can visit the Michigan Saves website, select the improvement they want, and apply for financing. Often, borrowers can get approved within a day, since most terms are handled on the front end. It is likely that this straightforward process is a major reason for why Michigan Saves is so popular. And again, this simplicity also serves to save staff time and resources, letting Michigan Saves employees focus on the big picture. Currently, many loan programs in Los Angeles County are extremely difficult to navigate for businesses, so a simple application structure could go a long way in helping Los Angeles County reach its small businesses.

Not everything about Michigan Saves can be transferred to Los Angeles County. Michigan Saves funds energy-efficient improvements that result in long-term cost savings. Since borrowers save money over time, they can use the savings to pay back the loan. Michigan Saves simply helps pay for the high upfront cost and ensures that loan terms are favorable and transparent to borrowers. However, while they provide myriad community and environmental benefits, the GZO improvements do not inherently save businesses money in the long term. Businesses could certainly benefit from below market interest rates and

a simplified application process, but it is unclear if they will be able to pay loans back as easily due to the lack of cost savings. The LLR model is sound, with successful examples in place all across the country. But if it is funding GZO improvements, Los Angeles County may see a higher default rate or lower uptake relative to Michigan Saves due to the nature of the improvements.

Furthermore, since the GZO regulations concern a number of different improvements (i.e. walls, structures, landscaping, etc.) it may be difficult to organize a qualified network of contractors. Still, even though not every single aspect is replicable, Michigan Saves is a great model of a green bank. Los Angeles County can certainly take lessons from the program on administrative simplicity, consumer focus, and fiscal sustainability.

National City, CA – Various Programs

Through its City Manager's Office, National City, CA has several different programs that incentivize greening and beautification in industrial and commercial areas. It is one of the few cities across the country that specifically addresses the same issues as DRP's Green Zones Ordinance. National City is a useful case study for another reason: the city is home to a strong environmental justice movement. In 2011 the City added an environmental justice element to its general plan. It has also used planning and policy to address compatibility between residential and industrial uses. National City offers one possible manifestation of for a well-funded program grounded in community action and environmental justice.

National City is located directly south of San Diego, on the San Diego Bay. It has a population of approximately 61,000 residents and is the second oldest city in the county, preceded only by San Diego. National City devotes a significant proportion of land to industrial uses, including much of its bayfront area. It is home to 32 million pounds of hazardous substance, and 870,000 cubic feet of toxic gases (Where We Work, 2011). In many neighborhoods, such as Old Town National City, industrial uses surround homes and schools. As a result, residents face great environmental burdens. For example, children under the age of 18 have an asthma hospitalization rate 40 percent higher than that for the county (Where We Work, 2011).

National City explicitly addresses this spatial mismatch in its planning. In 2009, the City Council voted to add an environmental justice element to its general plan in order to address impacts from land use on community health. In 2011, National City became the first municipality in the state to add to its general plan a full element devoted to the principle (Minkler, et al., 2010). The final Health and Environmental Justice Element (2011) includes several guiding policies surrounding incompatible land uses:

LU-3.2: "Prevent the intrusion of new incompatible land uses and environmental hazards into existing residential areas and phase out existing non-conforming uses" (3-232)

HEJ-2.1: “Avoid land use conflicts by ensuring residential, public assembly, and other sensitive land uses are adequately buffered from industrial land uses that may pose a threat to human health, where feasible” (3-234)

LU-3.7: “Limit impacts from industrial or mixed-uses by establishing performance standards to regulate noise, glare, vibrations, odor, lighting, air pollution, and other potential disturbances” (3-236)

Even before the Health and Environmental Justice Element, National City attempted to regulate industrial businesses near sensitive uses. A 2006 ordinance gave public officials the power to relocate noncompliant industrial businesses.* An audit conducted in that same year found that only eight of 133 businesses in Old Town National City had all the necessary permits to operate (Minkler, et al., 2010). Noncompliant autobody and paint shops were responsible for a majority of the toxic pollutants in the community. Like with many other regulations, the City grandfathered in existing businesses, allowing them to continue operating, but reserved its right to relocate uses (Heldiz, 2018). The City put together a list of over a hundred businesses that violated the new zoning regulations. However, only two businesses were ultimately relocated, one of which simply moved across the street. National City has since ceased enforcing this ordinance (Heldiz, 2018).

While efforts to fairly and effectively address the issue of businesses proximate to residences are ongoing, National City also has several incentive programs that help businesses clean up their public-facing properties. Activate the Right of Way (AROW) and the Signage and Façade Improvement Program (SFIP) are two programs that help businesses make on-site improvements. Neither program explicitly mentions environmental justice in its informational materials. However, both seek to incentivize on-site improvements on private property, similar to the goals and methods of Los Angeles County’s Green Zones Program.

AROW is a placemaking program. Its purpose is to “beautify, activate, and promote [National City] by working with the business community to enhance portions of the public right-of-way” (Activate the Right of Way, n.d.). Possible enhancements include outdoor displays or dining areas. The application is very straightforward; applicants suggest an activation, such as street furniture, plants, or displays, and the City responds. Any entity—business owners, community organizations, or residents—can apply to adopt a certain portion of the right of way.

SFIP is a more intensive grant program. It helps businesses improve the appearance of their storefront and comply with the City’s sign regulations. The goal is to “stimulate revitalization and private sector capital investment by proactively addressing deteriorating property conditions” (Signage and Façade Improvement Program, n.d.). Businesses can use grant funds to help pay for various public-facing improvements: signs,

* Though it was passed in 2006, the Ordinance did not grant officials the authority to move industrial uses until 2010, when National City updated the Westside Community Plan.

façade repair, landscaping, tile work, or demolition of obsolete structures. A business can apply on its own for the standard incentive, and a multi-tenant property owner can apply for a larger incentive. In both cases, applicants must pay for at least half of the total improvement costs. The City can reimburse up to \$10,000 for the standard incentive and \$15,000 for the multi-tenant incentive.

Between the amortization ordinance, environmental justice element, and various grant programs, National City has several existing efforts to clean up industrial areas and improve businesses. Interviewees mentioned that the City Council is very supportive of environmental justice, climate action planning, and sustainability in general. With a relatively unified council, along with similarly supportive City Managers, National City is able to make progress on environmentally focused policy. One planner with the City noted that National City is particularly adept among municipalities obtaining grant funding. Thus, the City's environmental justice work is well funded through external grants, such as a 2013 Area-Wide Planning grant from U.S. EPA. The interviewed planner mentioned that the City's Engineering/Public Works Department applies for most grants. Since this department presumably manages awarded grants, it is unclear if this structure ultimately constrains the ability of other departments to carry out work in similar areas.

Despite external funding, barriers to implementation still persist. Interviewees noted that funding remains a limiting factor, even with the various grants. In addition, staff resources prevent the City from doing more on sustainability and environmental justice. Within the City Manager's Office, there is one staff person that handles the majority of AROW and SFIP work, among other responsibilities. Being overly reliant on grant funds is also an issue. Without committed City resources, long-term program planning and implementation face uncertainty.

Takeaways

The experience of National City demonstrates the importance of enforcement. The City's planning documents are highly focused on environmental justice. In addition, different City departments and the City Council are generally in agreement on broader goals surrounding the issue. A 2006 ordinance gave the City the power to relocate polluting industrial businesses. However, the City barely used this authority, and neighborhoods like Old Town continued to face disproportionate pollution burdens. While relocating existing businesses is likely to be unpopular politically, National City missed an opportunity to commit to the ideal expressed in its planning documents. With the GZO, Los Angeles County has an effective enforcement mechanism. The broader success of the GZO may depend on how willing the County is to enforce the letter of the ordinance.

National City also shows that even well-funded municipalities run into barriers. Over the past two decades, the City received multiple grants for brownfield remediation, planning, and environmental justice efforts. Still, planning staff noted that the City faces funding barriers that prevent further environmental justice work. Grant funds also create potential challenges by preventing the City from doing long-range planning work on environmental

justice with the funds. Staffing remains an issue. As a much smaller municipality, National City has far fewer dedicated staff compared to a place like Los Angeles County. Certain programs, including AROW and SFIP, have only one assigned staff member. The County does not have this issue to the same extent. Nonetheless, for any future funding program, Los Angeles County should think through the funding and staff resources available, so that staff can adequately manage the program.

Recommendations

This project examined public financing strategies and best practices to inform the creation of a funding program to go along with Los Angeles County's Green Zones Program. Starting a funding program from scratch is likely to be a difficult endeavor. On behalf of the Department of Regional Planning (DRP), this research determined the best ways the County could help mitigate the costs of proposed land use regulations on existing small and medium-sized industrial businesses. The findings from this project informed seven recommendations, which include both administrative and strategic recommendations. While many of these are generalizable to other public agencies with similar programs, all recommendations here are tailored for Los Angeles County's Green Zones Program.

Recommendation 1. Facilitate inter-agency cooperation and commit to regulatory enforcement

While not specifically related to any funding program, it is imperative that Los Angeles County commits to enforcing the Green Zones Ordinance. In both National City and the City of Los Angeles, city governments implemented stringent regulations designed to promote environmental justice. However, the cities' lack of enforcement undermined their goal to clean up communities. Businesses that were bad actors continued to operate, often without permits. With the Green Zones Ordinance, a lack of enforcement may weaken compliant businesses' efforts to reduce their impact on surrounding communities. Simple oversight may fail to capture the full extent of business noncompliance. Regulators that only monitor one environmental aspect (e.g. air emissions) may miss ongoing violations in other parts of the business. Los Angeles County should foster communication between different regulatory agencies and departments.

Inter-agency cooperation must be a key part of regulatory enforcement. The City of Los Angeles' Clean Up Green Up (CUGU) program suffered from a relative lack of this cooperation. With multiple City departments involved, and little clear delineation of responsibilities, CUGU lacked clear direction in its initial years. As an even larger political entity, Los Angeles County should pay careful attention to this lesson. Responsibilities for various aspects of the Green Zones Ordinance should be clearly established from the beginning. Leadership should be familiar with planning principles and rules. Regional environmental agencies, such as SCAQMD should be included, and their role precisely articulated. Finally, Los Angeles County should continue to facilitate community feedback on regulations. As the case of Clean Up Green Up showed, local residents often have a better idea of environmental violations as they occur than regulators. Community-based organizations—particularly those with an environmental justice focus—and community residents are likely to be the best source of on-the-ground information, and would be valuable partners for the County.

Recommendation 2. Consider how local market and regulatory conditions impact demand for funding

Before creating a new funding program, Los Angeles County should examine the existing market and regulatory conditions facing small industrial businesses. These conditions affect demand for funding and may make a funding program less attractive. In Michigan, consistently low electricity rates reduced the demand for energy-efficient improvements. Borrowers did not have as much of an incentive to use Michigan Saves. In other jurisdictions prevailing wage requirements may have reduced uptake of funding programs. Los Angeles County staff repeatedly mentioned the difficulty of financing construction costs with these regulations in place. In many cases, Los Angeles County is not a competitive lender. Any loan program must necessarily contend with the demand for financing. Even a simple, low-interest loan program may experience low take-up if external factors diminish the benefits of financing. Thus, Los Angeles County should think through the various conditions affecting local funding programs, and create a program that is sensitive to small businesses' needs.

Recommendation 3. Make the application process straightforward and open for applicants

Los Angeles County should distill information about the Green Zones Ordinance and any associated funding programs into clear, essential points. For small businesses, many programs and policies are difficult to navigate. Certain programs require a lot of supporting documentation, such as tax returns going back several years. Small businesses often have no collateral and little experience with lending, yet many funding programs do not seem set up for these businesses to successfully apply. The County should thus strive to structure its funding programs to be easy to understand, and applications simple to submit.

One way to improve the application process is for the County to take on more work at the front end. Michigan Saves works in this manner. With Michigan Saves, since most financing aspects (loan terms, approved improvements, lending partners, etc.) are resolved on the front end, businesses enjoy a very simple application process. In many cases applicants can receive same day approval. Due to programmatic differences, Los Angeles County may not be able to make the approval process that simple. Nonetheless, it can adopt a similar mindset, and work out many details prior to opening applications. When paired with clear communications and easy to understand application requirements, Los Angeles can do a lot to support small businesses throughout the application process.

Recommendation 4. Lean on third party lenders, but negotiate favorable loan terms for applicants through credit enhancements

Los Angeles County should consider working with third party lenders to issue loans. As with programs around the country, including Michigan Saves, third party lenders could handle all the lending, while the County takes care of monitoring and outreach. The public-private partnership (PPP) structure allows each party to focus on its strengths. However, in establishing a PPP, the County should use its influence to negotiate favorable loan terms

for prospective borrowers. Through credit enhancements, Los Angeles County can shape aspects like loan eligibility or interest rates.

While there are different types of credit enhancements, a loan loss reserve (LLR) best fits the Green Zones Program. An LLR covers a prespecified amount of loan losses; in cases of default, the lending institution can draw on the reserve to cover losses. Publicly backed LLRs use public funds to support financial institutions in offering more favorable loan terms. LLRs work best when that target market consists of a large number of smaller transactions. The Green Zones Program will require many businesses to make a range of on-site improvements, many of which will need relatively small expenditures. As a result, the program lends itself well to the LLR model.

With an initial pool of funds, an LLR may be the most effective method of getting affordable financing out to small businesses. Through its own LLR, Michigan Saves helps facilitate thousands of residential and commercial loans at below market rates. This structure allows Michigan Saves to leverage a far greater amount of private capital than it could disburse on its own. Other examples within California that Los Angeles County can look towards include GoGreen Financing through the State Treasurer's Office, and the Small Business Loan Program run by the California Pollution Control Financing Authority. Small businesses in Los Angeles County that are affected by the GZO are eligible for both of these programs; they can apply directly through participating lenders while the public agency provides the reserve as a backstop in case of default. Los Angeles County could organize a similar program that complements these two sources. While a County-backed LLR would require establishing relationships with financial institutions, or leveraging existing relationships between lenders and the state, it would be an excellent companion to the Green Zones Ordinance.

Recommendation 5. Promote aggregation to reduce project costs

Irrespective of the specific funding strategy, Los Angeles County should promote project aggregation to reduce costs. The Green Zones Ordinance requires many businesses—many of which are near each other—to make very similar modifications at the same time. The ordinance thus lends itself well to project aggregation. It would be relatively straightforward for contractors to bundle projects, and for the County to create incentives around this strategy. From a staff resource perspective, it is likely to be easier to monitor a few larger projects instead of many smaller ones. At the same time, bundling multiple projects is likely to achieve cost savings for businesses. Industry experts consistently agree that larger projects reduce costs; meanwhile, small projects can double per unit prices (Doheny, 2019). For example, Philadelphia's Greened Acre Retrofit Program (GARP) led to more cost-effective green infrastructure projects across the city.

To promote project aggregation, Los Angeles County should consider involving contractors in the funding process. Contractors are well-versed in the construction process and its many costs, and will likely be able to propose effective solutions. Like with GARP, contractors could apply on behalf of property owners, thereby shifting the responsibility of combining projects to the contractors. Or, Los Angeles County could vet a pre-qualified

list of contractors and help facilitate connections for small businesses. Either way, the cost savings associated with project aggregation more than offset any wage premium associated with prevailing wage. If this is the case, then the model of promoting cost-effective, aggregated projects run largely by private contractors presents one potential strategy for Los Angeles County to promote good, green jobs. Since the end results—compliance with the Green Zones Ordinance—are the same, aggregation is likely to be a good strategy for Los Angeles County, regardless of the funding program, but particularly if it can raise the necessary funds to start a grant program.

Recommendation 6. Partner with communities on alternative methods for businesses to comply with regulations

Los Angeles County should collaborate with community organizations and businesses on how to effectively involve communities in greening businesses. In both Philadelphia and National City, community groups can adapt private property for public benefit with the permission of the property owner. The County can support a similar strategy. The Green Zones Ordinance already allows businesses to comply with regulations through alternative measures. Los Angeles County could promote certain community-involved modifications to the GZO. For example, businesses could allow community groups to adopt and maintain their landscape buffer and street trees. Or, businesses could offer their perimeter walls for public art in exchange for some benefit.

Industrial land does not naturally lend itself to public amenities like community gardens. However, since all affected businesses will be no more than 500 feet from a sensitive use; they are already an indelible part of the community fabric. As seen in site visits, there are numerous industrial businesses that currently border residences. In these cases, some sort of agreement between businesses and community groups could save businesses money, create a new community amenity, and still fulfill the requirements set forth in the GZO.

Recommendation 7. Look into organizing an EIFD to fund program goals

For a more long-term strategy, Los Angeles County should study the feasibility of creating an Enhanced Infrastructure Financing District (EIFD). A relatively new mechanism, EIFDs allow multiple government entities to work together on infrastructure investment and economic development. Participating entities can dedicate property tax revenue towards program goals. EIFDs themselves can also institute fees, employ tax increment financing, or—with voter approval—issue bonds. They can be used to fund traditional infrastructure such as transportation improvements, but can also emphasize goals like sustainability, brownfield restoration, and affordable housing. The County can look to recent examples of EIFDs in the West Sacramento and La Verne for guidance.

EIFDs are complex, and there are numerous institutional challenges to setting one up. Los Angeles County should carefully study the opportunities and drawbacks involved with an EIFD. It should also think about what other government entities (i.e. the state, other cities, Metropolitan Water District, etc.) can participate. A Green Zones EIFD would be an ambitious undertaking, but one with a great deal of upside. Los Angeles County could

create an EIFD for some (or all) of the Green Zones communities, or expand its scope. The EIFD could then help fund green improvements and preserve existing industrial businesses while simultaneously adding affordable housing and restoring brownfields. With the County's recent work with La Verne, there is likely existing experience and capacity to take on such a project. An EIFD could thus help small businesses clean up their practices, while also supporting the broader goals of the Green Zones Program.

Conclusion

This research project examined public financing strategies and practices that can offset the cost of proposed zoning code amendments on small and medium-sized industrial businesses. The broader purpose of this research was to inform the creation of a comprehensive and effective funding program for such businesses in unincorporated Los Angeles County that are subject to the Green Zones Ordinance. To do so, this project accomplished the following: analyzed the proposed ordinance and estimated its costs on industrial businesses; surveyed existing funding programs available locally and interviewed professional staff about program efficacy; and looked at four representative cases studies of public programs that incentivize green improvements on private property.

While this research was conducted on behalf of Los Angeles County, it may be useful to many different local and state governments looking to implement their own financing program. This research quantified the cost of the Green Zones Ordinance for businesses. More broadly, this project compiled a set of best practices that local governments can apply to their existing and future funding programs. It also profiled four case studies that offer lessons to places beyond the County. The above recommendations provide an actionable program that can facilitate green improvements while also supporting small business development. Alongside the rest of the Green Zones Program, this project has the potential to transform perceptions of industrial corridors as polluted places incompatible with residential uses, and show that greening and job creation/retention can be complementary goals.

This study looked at existing funding programs to provide recommendations about a future program. More general research on different financing mechanisms would be helpful. While most funding programs respond to local context, policymakers would benefit from broader studies that identify scenarios where one specific strategy is preferable over another. In addition, there is a need for more research on how local governments can best support small businesses. Together, these businesses are a key part of the U.S. economy, but face many key challenges. Many levels of government promote small business development, but there is relatively little practitioner-focused research on how to best accomplish this goal.

Public funding programs, which allocate scarce public funds, are inherently political. In adopting these—or any other—funding strategies, Los Angeles County needs to first consider its internal values. In implementing the Green Zones Program, the County must

weigh disparate goals such as environmental justice, small business support, and affordable housing. And while balancing these different ideals is likely to be difficult, Los Angeles County has the opportunity to be at the vanguard of similar planning efforts. The Green Zones Ordinance is unique in requiring new and existing businesses to comply with its regulations. If successful, this effort may serve as a case study for local governments across the country hoping to address both environmental and economic goals.

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Appendix

Interview Questions

Los Angeles County Staff

1. Please state your position and how long you've been working in this position. What are your responsibilities in this position?
2. Describe [specific funding program]. Please provide some context on what the program funds, its broader goals, and how it was created.
3. How many businesses has your agency funded through this program?
4. How does your agency get funding for this program (e.g. one-time grant, annual allocations, etc.)? Is program funding consistent from year-to-year, or is it dependent on external factors?
5. Please describe the application process. After property owners apply, who decides which applicants get funding and how are decisions made?
6. How is funding disbursed (i.e. grant, loan, etc.)? Is there any monitoring involved on the agency side or reporting requirements for the property owner?
7. Are there any challenges facing the long-term success of this program? If it was up to you, what changes—if any—would you make to improve the program?
8. Overall, how would you rate the success of this program?
9. [Briefly describe Green Zones regulations]. Would your program fund any of these improvements if they were to be required? Could any of these improvements be bundled with other things that your program might fund?
10. Do you know of any other funding programs that might help businesses in unincorporated Los Angeles County fund these improvements?

Case Study Program Staff

1. Please state your position and how long you've been working in this position. What are your responsibilities in this position?
2. Describe [specific funding program]. Please provide some context on what the program funds, its broader goals, and how it was created.
3. How many businesses has your agency funded through this program?
4. How does your agency get funding for this program (e.g. one-time grant, annual allocations, etc.)? Is program funding consistent from year-to-year, or is it dependent on external factors?
5. Please describe the application process. After property owners apply, who decides which applicants get funding and how are decisions made?
6. How is funding disbursed (i.e. grant, loan, etc.)? Is there any monitoring involved on the agency side or reporting requirements for the property owner?

7. Are there any challenges facing the long-term success of this program? If it was up to you, what changes—if any—would you make to improve the program?
8. Overall, how would you rate the success of this program?
9. Do you think this sort of funding program could be easily replicated in another jurisdiction?

Program Applicants

1. Please describe your experience with [specific funding program]. How did you hear about it, and why did you decide to apply?
2. How was the application process? Did you find it to be straightforward or was it complicated?
3. How long have you participated in the program?
4. Please discuss your use of the funds generally. Was the funding helpful? Would you have made the same changes to your business without the funding?
5. In the absence of program funding, what methods would you use to pay for the improvements?
6. What short-term and long-term effects did the funding have on your property, business, or on the surrounding community?
7. What, if anything, could have been improved about the program? Are there any changes you would like this program to make, or would you keep everything the same?

Cost Estimation – Vendors

Street Trees

- Vendor 1: Sunshine Growers Nursery (2016) – Eastvale, CA
- Vendor 2: Evergreen Nursery (2020) – Oceanside, CA
- Vendor 3: West Covina Nurseries (2020) – West Covina, CA
- Vendor 4: Briggs Nursery and Tree Co. (2020) – Vista, CA

Business Identification Signs

- Vendor 1: The Sign Chef (2020) – Charleston, SC
- Vendor 2: Signs US (2020) – Charleston, SC
- Vendor 3: Signs.com (2020) – Salt Lake City, UT
- Vendor 4: Sign King (2020) – San Diego, CA

Characteristics of Small Businesses

The vast majority of firms in the United States are small businesses, defined here as those with fewer than fifty employees. Using this definition, 94.50 percent of businesses nationwide can be considered a “small business.” In both California and Los Angeles

County, small businesses are even more prevalent. Within Los Angeles County’s manufacturing zones—the areas subject to Green Zones regulations—most businesses fall into one of four sectors (two-digit NAICS Code in parentheses): Construction (23), Manufacturing (31-33), Wholesale Trade (42), or Transportation and Warehousing (48-49). The U.S. Census Bureau collects data on small businesses for its County Business Patterns survey. Figure A.1 below displays the percentage of small businesses overall, and for the four aforementioned industrial sectors.

Figure A.1. Small Business’ Percentage of Establishments (%)

	All Sectors	Construction	Manufacturing	Wholesale	Warehousing
LA County	95.13	97.31	89.18	96.09	93.51
California	94.71	96.50	88.19	95.15	92.77
USA	94.50	97.11	84.33	94.66	92.71

Data: US Census Bureau, 2016 County Business Patterns, Table CB1600A13

Most small businesses have only a small number of employees. Within Los Angeles County, 60.44 percent of all establishments have four or fewer employees, and 76.26 percent have nine or fewer. While the majority of establishments are small businesses, larger businesses employ a majority of people. In California, 94.71 percent of businesses employ fewer than 50 people; however, only 40.26 percent of employees work at a small business (Figure A.2).^{*} The County Business Patterns survey does not include nonemployer firms, which have no paid employees but are an important part of the County and country’s economy.

Figure A.2. Share of California Employees by Business Size (%)

	All Sectors	Construction	Manufacturing	Wholesale	Warehousing
Small (<50)	40.26	54.26	27.97	45.66	29.60
Medium (50-249)	28.47	29.43	34.31	29.11	29.37
Large (≥250)	31.27	16.31	37.72	25.23	41.04

Data: US Census Bureau, 2016 County Business Patterns, Table CB1600A13

Compared to the overall number of small businesses, there is much greater sectoral variation in the percentage of employees divided by business size. For example, while the majority of employees in construction work at a small business, in transportation and warehousing a plurality of employees work at a large business. Very small firms are also far less represented when looking at employment figures. Across all employers, 5.74

^{*} The U.S. Census Bureau and Bureau of Labor Statistics do not disaggregate employee or payroll figures by establishment size at the county level. Information about these two topics will focus on California as a whole but, as the figures on establishments show, business patterns in California and Los Angeles County are highly similar.

percent of all employees work at an establishment with four or fewer employees; in manufacturing, only 2.44 percent do so.

Employees at small businesses generally receive fewer wages than their counterparts at larger firms. Figure A.3 displays the average wage divided by business size within a sector in California. Figures in green are above average for that sector, while figures in red are below average for that sector. Figure A.3 shows that small business employees earn less than workers at larger firms within the same sector. Furthermore, average wages generally increase as the number of employees grows. In other words, mid-sized firms on average pay more than small businesses, and the largest firms pay more than medium-sized businesses.

Figure A.3. California Average Wage by Business Size (\$)

Business Size	All Sectors	Construction	Manufacturing	Wholesale	Warehousing
All	60,728	62,941	66,727	83,941	52,835
1 - 4	61,360	49,262	54,342	60,290	48,213
5 - 9	43,816	45,770	41,605	56,240	42,883
10 - 19	44,404	53,771	45,283	60,593	45,310
20 - 49	46,625	62,940	51,380	65,388	48,099
50 - 99	51,132	68,928	57,334	70,292	49,302
100 - 249	58,756	73,255	60,361	75,870	48,045
250 - 499	72,186	73,756	65,500	102,619	45,425
500 - 999	87,711	78,994	75,862	126,170	51,647
≥ 1000	86,138	75,144	109,965	186,236	72,902

Data: US Census Bureau, 2016 County Business Patterns, Table CB1600A13

Similarly, the wage premium at larger firms is greater than for smaller firms. Businesses in California generally pay more than average for the United States. Overall, a typical employee in California earns roughly \$10,000 more than the typical employee in the United States as a whole (Figure A.4). However, this wage premium decreases for employees at smaller firms. The California wage premium for workers at medium-sized businesses is \$7,116, while the premium for small business employees is only \$5,520. In sectors like wholesale trade, there average small business employee in California receives almost no wage premium. Given the higher cost of living in California, it is likely that many small business employees struggle to afford the same cost of living as people in similar roles elsewhere in the United States.

Figure A.4. California Average Wage Premium by Business Size (\$)

		All	Manufacturing	Wholesale	Warehousing
All Businesses	California	60,728	66,727	83,941	52,835
	USA	50,769	57,266	70,018	48,452
	<i>Premium</i>	<i>9,958</i>	<i>9,461</i>	<i>13,923</i>	<i>4,383</i>
Small (< 50)	California	47,632	48,707	61,636	46,547
	USA	42,112	46,460	60,994	45,305
	<i>Premium</i>	<i>5,520</i>	<i>2,247</i>	<i>642</i>	<i>1,242</i>
Medium (50 - 249)	California	55,251	59,148	73,331	48,565
	USA	48,134	53,638	66,880	45,939
	<i>Premium</i>	<i>7,116</i>	<i>5,510</i>	<i>6,451</i>	<i>2,626</i>

Data: US Census Bureau, 2016 County Business Patterns, Table CB1600A13

Due to limitations in the available data, the above macro-analysis only displays averages for sectors and business sizes. In reality, there is likely a great deal of variation among businesses—large or small—within a given sector or size classification. Nonetheless, these figures demonstrate several key facts:

1. Small businesses make up the majority of establishments locally, statewide, and nationally, even when excluding non-employer firms. Los Angeles County has relatively more small businesses than either California or the United States as a whole. As a result, Green Zones regulations will primarily impact small businesses.
2. Despite the high number of non-employer firms, small businesses collectively employ over forty percent of workers in California.
3. Within a given sector, employees at small businesses earn less than employees of larger firms. Generally, average wage increases with business size.
4. Employees in California receive a wage premium, and this premium increases with business size. Employees at small businesses receive a smaller wage premium.

Additional Maps

1. Green Zones Communities, Los Angeles County

[Map on next page]

Green Zones Communities

Los Angeles County

