Community-Based Participatory Mapping: Collecting neighborhood-level data for climate action

Climate Action Research Initiative
Institute for Sustainable Solutions/Portland State University

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Executive summary

Portland State University’s Institute for Sustainable Solutions (ISS) launched a community-based participatory mapping (CBPM) pilot initiative in 2015 as a first step in developing a program that communities, planners, and researchers can turn to when they need to collect, analyze, or visualize spatial neighborhood-level data in support of sustainability initiatives. The two projects selected as pilots were the Living Cully Walks (LCW) Temporary Wayfinding System Project in the Cully neighborhood and the Livable Lents (LL) Community Listening Project in Lents. Cully and Lents have long histories of being passed over by city planners in the allocation of funding for transportation infrastructure and economic development. The two neighborhoods also fall into the medium-high to high risk zone for climate change vulnerability.

Partnering with the ISS-CBPM team enabled LCW to design and implement a temporary wayfinding system consisting of a set of 20 colorful signs with maps and walking and biking distances to parks in the Cully neighborhood. The signs are in both Spanish and English, and community input about the efficacy of the signs will be used to develop a permanent signage system by 2017. The signage system is a basic building block in the Cully neighborhood’s efforts to create a more walkable neighborhood and reduce residents’ carbon footprints. Responses from community members and city planners to the temporary signs have been favorable.

In Lents, the ISS-CBPM team assisted volunteers in administering a neighborhood survey to collect residents’ perspectives about what makes a livable neighborhood and their ideas for how livability in Lents can be improved. We integrated a web-based map with the survey so that locations of areas of concern could be mapped, and analyzed. Additionally, we provided support for translating the surveys into Spanish, Vietnames, and Russian and hiring community ambassadors to administer the survey to non-English speaking residents. A community forum held in fall 2015 gave residents an opportunity to provide feedback on survey results and identify action steps for achieving livability goals, including those related to climate adaptation and mitigation.

Our pilot indicates that the model of a three-way partnership between PSU, neighborhood and community groups, and planning agencies to accomplish fine-grain mapping and spatial data analysis has strong potential to support implementation of the 2015 CAP. Jointly developing a training needs assessment, a data ownership and management strategy, and an external communications and advocacy strategy early on in the
partnership can enhance the effectiveness of CBPM partnerships. The early identification of partner capacities and roles and allocating sufficient time to build and nurture long-term relationships, as well as implementing strong internal communication and information sharing processes are also important factors in successful CBPM partnerships. One likely avenue for leveraging scarce resources is to design synergistic “portfolios” of student and researcher engagement mechanisms so that gains from one activity can be leveraged to support additional activities.

A permanent PSU-based program modeled along the lines of the ISS-CBPM initiative has strong potential to play an important role in meeting the needs of community groups for mapping expertise and the city’s’ need for improving community engagement, while simultaneously contributing toward PSU’s goal of being a leader in sustainability education and research. We recommend that ISS conduct a scoping exercise to inventory and assess PSU’s existing sources of mapping and spatial analysis expertise as a first step toward convening key players to lay out a strategy for developing a PSU-based mapping and spatial analysis hub.
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Introduction

In 2015, Portland State University’s Institute for Sustainable Solutions (ISS) launched a community-based participatory mapping (CBPM) pilot project with support from the Climate Action Collaborative. The pilot project called for ISS faculty and student researchers to implement two community-initiated mapping projects in support of ongoing neighborhood-level climate action initiatives. The City of Portland’s Bureau of Planning and Sustainability served as an informal technical advisor to the overall project and provided input on community outreach strategies for the Livable Lents component; the Portland Bureau of Transportation and Portland Parks and Recreation provided design and evaluation input for the Living Cully Walks component.

The pilot project is the first step in developing a CBPM program at Portland State University that communities, planners, and researchers can turn to when they have the need to collect, analyze, or visualize spatially explicit, neighborhood-level data in support of sustainability initiatives, such as Portland’s Climate Action Plan. The project also aims to strengthen the collaborative research relationship between PSU and the City of Portland and in particular, the Bureau of Planning and Sustainability, around climate action and other urban sustainability activities.

This report describes the participation process and outcomes accomplished through the ISS-CBPM pilot project. Section 1 situates the project in the broader context of climate change adaptation in Portland. It also provides an overview of the basic principles of CBPM. Sections 2 and 3 describe how the ISS-CBPM pilot project supported Living Cully Walks and the Livable Lents Community Listening Project in Portland, Oregon. Section 4 reflects on the lessons learned from the work in Cully and Lents. Section 5 lays out a strategy for developing a sustainable CBPM hub at PSU.
Section 1 – Climate Action and Community-Based Participatory Mapping

Climate equity: Portland’s 2015 Climate Action Plan

Between 1990 and 2013, Portland accomplished the impressive feat of reducing its total local carbon emissions by 14 percent despite experiencing a 31 percent growth rate in population and a 20 percent increase in jobs (City of Portland and Multnomah County 2015). The 2015 City of Portland and Multnomah County Climate Action Plan (CAP) sets forth the even more ambitious goal of reducing local carbon emissions to 40 percent of 1990 levels by 2030, and to 80 percent of 1990 levels by 2050. The plan identifies healthy and resilient communities as the fundamental building blocks for achieving long-term and sustainable reductions in local carbon emissions. It also recognizes that the city’s previous efforts to reduce local carbon emissions have not previously paid sufficient attention to ensuring an equitable distribution—socially and geographically—of the costs and benefits of reducing greenhouse gas emissions. Failure to address climate action inequities is problematic because it exacerbates existing social and environmental inequities, places undue burdens on lower income residents and communities of color, and creates disincentives for broad-scale participation in climate action (Sarzynski 2015).

In 2013 Portland commissioned a social equity analysis to ensure that its updated Climate Action Plan squarely addressed both people and place-based equity concerns (Schrock 2013). Portland’s focus on climate equity is part of a broad-based climate justice movement in which cities throughout the world are adopting climate action plans that encourage communities to create solutions that draw on local knowledge, experiences, and cultural practices (Carmin et al. 2011, Cleetus et al. 2015, Foster et al. 2011, Moser 2009, Van Aalst et al. 2008). By empowering local-level communities to plan and take locally appropriate climate action, community-based approaches to climate change adaptation seek to make climate action relevant to all urban inhabitants rather than just to wealthier community members (City of Portland and Multnomah County 2015).

The 2015 CAP for Portland and Multnomah County identifies three primary equity goals:

- Ensuring that all residents have easy access to walkable and bikeable neighborhoods, including access to retail stores, green space, educational facilities, employment opportunities, and affordable housing.

- Structuring climate investments so as to ensure that low-income residents and members of communities of color have employment and small business opportunities in their neighborhoods.

- Including low-income residents and members of communities of color in the creation and implementation of climate programs, policies, and actions.
Of these three goals, the goal of including low-income residents and communities of color in climate action planning and implementation is arguably the most important as accomplishing it will enhance the likelihood that the other two equity goals will be addressed. From a community standpoint, greater involvement increases opportunities for community members to influence the city’s investment decisions. From the city’s standpoint, engaging a broader set of community members can facilitate efforts to obtain the micro-level data needed to understand the impacts of climate change as well as the impacts of local actions on carbon emissions. The CAP Summary (City of Portland and Multnomah County 2015: 30) articulates the importance of equity-focused climate change planning and action as follows:

“The City and County are committed to deepening involvement with communities of color and low-income populations in responding to climate change. Engagement strategies will take into account existing barriers and attempt to mitigate them, as well as supporting existing community-based efforts to address climate change.”

The 2015 CAP’s commitment to climate equity is further evidenced in 2030 Objective 17, which calls for the City and County to “[e]ngage communities, especially impacted under-represented and under-served populations, in the development and implementation of climate change-related policies and programs.” The 2015 CAP identifies collaborations between the city, academia, and nonprofits and support for community capacity building as two key areas where climate action investments should be focused.

The CAP’s focus on climate equity and community engagement foregrounds the need for planning tools and approaches that have proven effective at engaging a broad set of stakeholders — and particularly low-income residents and members of communities of color — in urban planning and implementation processes. Community-based participatory mapping (CBPM), an approach increasingly being used in climate action planning and adaptation in many parts of the world (Garzon et al. 2012; Moser et al. 2010), is a tool with considerable potential to support Portland’s objective of achieving its climate equity and inclusive community engagement goals.

**CPBM: A tool for community empowerment and engagement**

Community-based participatory mapping encompasses a variety of spatial data collection and analysis approaches, including participatory asset mapping, land use and land occupancy mapping, participatory GIS, and public participation GIS among others (Kramer et al. 2012, McLain et al. 2013). What these mapping approaches share in common is a concern for engaging community members as equal partners in mapping and spatial data analysis so as to more effectively incorporate local socio-ecological knowledge and address the needs and concerns of community members. To understand why CBPM is a useful tool for community empowerment and engagement, it is helpful to examine its three components.
1) CBPM projects are *community-based*, which means that they are designed so as to explicitly address the needs and concerns of the communities that they serve (Elwood 2006, Kramer et al. 2012). Moreover, CBPM is action-oriented, and places a premium on generating knowledge that local communities can use to advocate for and bring about positive change in the socio-ecological systems in which they are embedded (Elwood 2006, Kramer et al. 2012). Parker (2006: 471) cautions, however, that definitions of community are “unstable and fluid”. Although the term community often refers to a “small geographic area such as a neighborhood or town that presumably shares identity and solidarity” (Parker 2006: 471), communities can also be made up of people who do not live near each other (for example, occupational communities or communities of interests). Moreover, even small-scale geographic communities are rarely homogenous, and especially in urban areas may be comprised of individuals with a range of values, norms, and beliefs (Kramer et al. 2012). Kramer et al. 2012 argue that CBPM practitioners need to recognize that “community self-identification is a complex process” and that communities are often characterized by internal struggles over resources and voice.

2) CBPM is *participatory* with community members and scientific professionals functioning as equal partners during all phases of mapping (Elwood 2006). Functioning as equal partners need not mean that community members and scientists participate in the exact same way or at the same level of intensity throughout the project. What it does mean is that the parties involved in the mapping project explicitly recognize the value of the knowledge and skill sets of all partners, and work toward ensuring that the different types of knowledge and skills are utilized at appropriate points and in appropriate ways during the mapping process. CBPM is also participatory in the sense that it seeks to capture the full range of views, values, and conditions present within the community. The principles for community-based participatory research (CBPR) listed in Box 1 are equally applicable to CBPM.

3) CBPM relies on *mapping as a community engagement and empowerment tool*. CBPM typically involves community members using maps, geographic positioning systems (GPS), geographic information systems (GIS), and other mapping technologies.

<table>
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<tr>
<th>Box 1 - Principles for Community-Based Participatory Research*</th>
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<tr>
<td>1. Recognizes community as a unit of identity</td>
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<td>2. Builds on strengths and resources within the community</td>
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<td>3. Facilitates a collaborative, equitable partnership in all phases of research</td>
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<td>4. Fosters co-learning and capacity building among all partners</td>
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<td>5. Integrates and achieves a balance between knowledge generation and intervention for the mutual benefit of all partners</td>
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<td>6. Involves systems development using a cyclical and iterative process</td>
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<td>7. Focuses on community relevance and on ecological perspectives that attend to the multiple determinants of health and wellbeing</td>
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<td>8. Disseminates results to all partners and involves them in the wider dissemination of results</td>
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<td>9. Involves a long-term process and commitment to sustainability</td>
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to collect, analyze, and share information about places and resources in their community that are important to them (McLain et al. 2013). The rationale for CBPM’s focus on mapping is related to the idea that sense of place matters to people and that a positive sense of place is an important component of what makes a neighborhood livable. By the same token, negative elements, such as vacant lots, boarded up buildings, and abandoned warehouses can contribute toward feelings of fear or lack of wellbeing. How positive and negative elements are distributed across a neighborhood will affect neighborhood character as well. Mapping is one way for people to capture their knowledge about and sense of place and translate their knowledge and experiences into formats that are more easily accessible to others (Corbett 2009). CBPM practitioners recognize that maps are never politically neutral – what things are mapped and how they are mapped can have a huge impact on land use and economic development decisions (McLain et al. 2013). CBPM shifts the balance of power inherent in maps and mapping from planners and technical experts into the hands of community members, giving them greater political leverage in decisions that affect the conditions in which they live (Elwood 2006).

Piloting CBPM for climate action research in Portland

The Institute for Sustainable Solutions’ Community-Based Participatory Mapping (ISS-CBPM) program is a research approach that explicitly links PSU’s mapping and spatial analysis expertise with community action to create and analyze data that facilitates locally informed and relevant climate action. The impetus for ISS to pilot a CBPM project emerged from the confluence of unmet needs on the part of three climate action stakeholders in Portland. First, community groups, such as Verde in the Cully neighborhood in northeast Portland and Green Lents in the Lents/Powellhurst-Gilbert neighborhoods in east Portland, have taken steps to implement projects that support Portland’s climate action goals. However, some of these projects require or could benefit from the use of mapping and spatial analysis technologies. Second, the City of Portland recognizes that the city bureaus and departments require a better understanding of neighborhood-level constraints to and opportunities for undertaking climate action. Additionally, the city is interested in expanding its capacity to engage underrepresented communities in climate action initiatives, something that CBPM readily supports. Third, Portland State University faculty and students seek opportunities to apply their expertise in spatial data collection and analysis to support neighborhood scale climate action. However, community-based mapping capacity at PSU is scattered across a number of departments and institutes, making it challenging for community members or city planners to know who to approach when they need assistance with the collection and visualization of neighborhood scale or other relevant spatial data.

In its role as a coordinator of sustainability-focused action research and education, and with a mandate to engage both community and city partners, ISS is well situated to facilitate a three-way partnership between community groups, city bureaus, and Portland State University. Dialogue between ISS researchers, Urban and Regional Planning faculty, and the Portland Bureau of Planning and Sustainability (BPS) staff in late 2014 identified CBPM as a potential tool for furthering the City’s outreach capacity in the climate-action arena. In spring 2015, the Bullitt Foundation provided funding to ISS
through the Climate Action Collaborative to support the implementation of a pilot CBPM project.

From the neighborhood standpoint, the ISS-CBPM project was designed to enable community members to acquire or expand their knowledge about how to obtain access to GIS data and technical expertise needed to develop neighborhood-scale mapping projects and generate spatial data supportive of climate action objectives. At the city level, the ISS-CBPM project sought to facilitate the city’s access to neighborhood-level data needed to further its climate action goals as well as demonstrate how city planners can use CBPM as a tool to reach out to traditionally underserved populations. From PSU’s standpoint, the ISS-CBPM project aimed to provide students access to real-world problem-solving opportunities in the climate action realm and faculty an opportunity to identify a set of “good practices” for guiding development of a formal CBPM program and structuring future CBPM collaborative endeavors.

**Pilot case study communities: Cully and Lents neighborhoods**

A key element of successful participatory mapping partnerships is the establishment and maintenance of relationships of trust between technical experts and community members (Kramer et al. 2012). Consequently, the ISS-CBPM team worked with program staff affiliated with the ISS Sustainable Neighborhoods Initiative (ISS-SNI) to identify community partners with whom ISS already had strong relationships. To maximize opportunities to provide support for neighborhoods in which the city was already expanding its climate equity investments, we consulted with the Portland Bureau of Planning and Sustainability to identify suitable pilot communities. The two projects selected as pilots were the Living Cully Walks Temporary Wayfinding System Project (referred to hereafter as the LCW project) in the Cully neighborhood and the Livable Lents Community Listening Project in Lents.

The LCW project took place in the Cully neighborhood in northeast Portland (see Figure 1), where SNI has provided support to the LCW’s parent organization, Verde, on health equity, anti-displacement and affordable housing, nature inventory, and active transportation projects. The Livable Lents Community Listening Project took

![Figure 1 – Community-Based Participatory Mapping pilot initiative neighborhoods]
place in the Lents neighborhood (see Figure 1), which together with portions of six other neighborhoods comprises the Foster Green Ecodistrict in southeast Portland. SNI has provided support to the Foster Green Ecodistrict on a variety of projects since 2014, including the establishment of the Malden Court Community Orchard, flood-plain mapping and flood-risk assessment along Johnson Creek, and conservation-based affordable housing. Additionally, at the time the ISS-CBPM project was initiated, SNI was providing facilitation and organizational support to the Foster Green Ecodistrict Steering Committee.

Both the Cully and Lents neighborhoods have long histories of being passed over by city planners in the allocation of funding for transportation infrastructure and economic development. This neglect is reflected in the two neighborhoods’ urban resilience vulnerability scores in the 2015 Climate Action Plan. Cully falls into the medium-high risk category while Lents includes both medium-high and high-risk areas.\(^1\) To enhance urban resiliency and address previous inequities in service provision to Cully and Lents, the City of Portland currently has major initiatives in both neighborhoods to support green economic development, improve sidewalk, road, and green space infrastructure and put into place anti-displacement strategies.

In Sections 2 and 3, we explore the Cully and Lents case studies in depth. We begin each case study with an overview of the neighborhood’s land use patterns and demographic characteristics followed by a brief discussion of the neighborhood’s planning history and concerns that motivated the communities to undertake climate action projects. We then describe how the mapping partnership between the ISS-CBPM team and the community project team emerged, the roles of the respective partners, and the activities that took place as the project unfolded. In both projects the ISS-CBPM team’s role consisted of adding value through the provision of mapping and data analysis expertise to community-designed projects that were already well underway. Each case study ends with a brief discussion of project outcomes and the benefits to the participants of engaging in the CBPM partnership. Key lessons learned from the two projects are discussed in Section 3 of this report.

\(^1\) Indicators used to assess risk in the 2015 CAP included: Bicycle access and connectivity, food access, transit access, recreation access, elementary school access, sidewalk density, commercial services. Risk factors included: percentage of renters exceeding 44.2 percent, percentage of residents belonging to communities of color exceeding 26.7 percent, percentage of residents lacking a bachelor’s degree exceeding 58.2 percent, and percentage of residents at or below 80 percent Median Family Income exceeding 47 percent.
Section 2: Case Study 1 - Living Cully Walks Wayfinding System

The Cully neighborhood in northeast Portland abuts the Portland International Airport to the north and is bounded by NE 82nd Street to the east, NE 42nd Street to the west, and NE Fremont and Prescott Streets to the south (Figure 2). Located roughly five miles northeast of downtown Portland, Cully is sometimes categorized as a “close-in” neighborhood. However, unlike adjacent neighborhoods to the west and south which were annexed to Portland during the early 20th century, Cully was not annexed until 1985 (Enelow and Hesselgrave 2015). This late annexation date meant that Cully’s land use patterns and infrastructure systems developed in the absence of building standards, an absence which lies at the heart of many of the neighborhood’s current planning issues.

Land use patterns in Cully

Two distinct land use patterns are found in Cully. Single-family residential housing dominates the southern two-thirds of the neighborhood, with the majority of homes dating to the housing boom following World War II (City of Portland 1992). Multi-family residential housing is relatively rare, and is concentrated along Cully Boulevard and NE Killingsworth, the neighborhood’s two largest streets. Construction, manufacturing, and warehousing facilities dominate the landscape in northern Cully. The Columbia Slough, parts of which are managed as natural habitat, is located along Cully’s northern border. The northern and southern portions of Cully are physically separated by a major transportation corridor, through which a freight rail line and two heavily traveled regional highways pass.

Cully has an unusually large percentage of unpaved and poorly maintained roads, as well as inadequate street lighting, sidewalks, and stormwater infrastructure (Bañuelos et al. 2013). Cully had only one public park – a 1.5-acre space adjacent to Sacajawea School – at the time it was annexed (City of Portland 1992), a situation that the city has only recently begun to remedy. Cully also lacks a well-defined central business core, and its few commercial and retail businesses are concentrated in small pockets along 42nd Street, Cully Boulevard, and NE Killingsworth. As a result, Cully residents must travel outside the neighborhood for many of their shopping and entertainment needs (Enelow and Hesselgrave 2015). Despite these disadvantages, Cully’s proximity to jobs downtown and
in the nearby industrial zone, together with its relatively affordable housing, has long made it attractive for low-income and working-class households (Bañuelos et al. 2013).

**Population and housing**

Cully is spread out over 2,008 acres and is home to more than 13,000 people, making it simultaneously Portland’s largest and most populated neighborhood (Banis and Shobe 2015). It is also Portland’s most ethnically and racially diverse neighborhood (Enelow and Hesselgrave 2015). Nearly half of the population identifies themselves as something other than White, with Latinos comprising 21 percent and African Americans 18 percent of the neighborhood’s population (Institute of Portland Metropolitan Studies 2015) The average annual household income among Cully residents was $10,000 lower than the average for Portland in 2010 (Bañuelos et al. 2013). Moreover, 20 percent of Cully households live in poverty compared with 9 percent of households in the metropolitan area (Bañuelos et al. 2013). Household sizes in Cully are slightly larger than in other close-in neighborhoods; and the population is younger than in Portland as a whole (IMS 2015). More than half (57 percent) of the housing in Cully is owner-occupied, which is slightly higher than the city-wide figure of (54 percent) (Institute of Portland Metropolitan Studies 2015).

**Key concerns in Cully**

As a relatively close-in neighborhood with a large supply of comparatively inexpensive homes, Cully is a prime candidate for Portland’s next wave of gentrification. Residents welcome improvements in road, sewage and stormwater systems, as well as more retail and commercial opportunities. However, they are also concerned that improvements will increase housing prices and result in many current residents being displaced (Bañuelos et al. 2013). To forestall displacement linked to gentrification, in 2005 community organizers formed Verde, a non-profit organization, in 2005 (Enelow and Hesslegrave 2015). Verde seeks to combine green infrastructure development in Cully with local employment opportunities. In 2010 Verde joined forces with Hacienda CDC and the Native American Youth and Family Center (NAYA) to create the Living Cully EcoDistrict with the goal of obtaining urban renewal funds from the City of Portland to bring new environmental assets to the neighborhood (Bañuelos et al. 2013a). Living Cully operates outside the formal EcoDistrict framework and “reinterprets the ecodistrict concept as an anti-poverty strategy, as a means to address disparities by concentrating investments at the neighborhood scale“ (Bañuelos et al. 2013:1a). Its three focal areas include affordable housing, employment opportunities, and infrastructural improvements. Transportation and green space figure prominently among Living Cully’s improvement priorities.

A dearth of sidewalks and poor road connectivity, coupled with heavy traffic and poor crossing facilities on major roads traversing the neighborhood, make walking and biking in Cully difficult at best and life-threateningly dangerous in some areas. Only 34 percent of Cully’s streets have sidewalks, and more than 9 percent of its streets are unpaved
(Bañuelos et al. 2013b; City of Portland 2012a). Community-based planning processes from 1985 onward have consistently identified improving accessibility and safety along streets as neighborhood priorities (City of Portland 1986; City of Portland 1992; City of Portland 2008; Let Us Build Cully Park 2013).

Cully also has long suffered from a lack of publicly accessible green spaces, a situation that the city has only recently taken steps to remedy. Beginning in the early 2000s, community organizations began a concerted effort to expand the number of parks in Cully. Over the course of the past decade, two new parks — Whitaker Ponds and K\textsuperscript{h}unamokwst — have opened and a third new community-designed facility, Cully Park, is scheduled to open in 2017. Portions of the Colwood Golf Course, which is located in northern Cully, are slated to become a natural area (East Multnomah Soil and Water Conservation District 2015).

The new parks are important environmental and social assets for Cully, but accessing most of them by foot or bike is challenging. The two major highways and railway line separating north and south Cully are formidable physical and psychological barriers to walkers and bikers seeking access to Whitaker Ponds, Colwood Park, and the Columbia Slough. The parks south of the Columbia Highway (K\textsuperscript{h}unamokwst, Sacajawea, and the soon-to-be-opened Cully Park) are more accessible. However, the lack of sidewalks, limited number of protected crossings on major streets, and, in some areas, unpaved streets, serve as disincentives for many prospective walkers and bikers.

In 2012, the City of Portland adopted the Cully Commercial Corridor and Local Street Plan which lays out a strategy for filling gaps in Cully’s sidewalk system, installing improved street crossings, designating bike lanes, and putting in other pedestrian and bike infrastructure improvements (City of Portland 2012b). The Portland Bureau of Transportation was awarded funding from the Oregon Department of Transportation’s Multimodal Transportation program in 2013 to implement Connected Cully (City of Portland 2012c), a project aimed at accomplishing many of these improvements.

**Taking action: Living Cully Walks**

In 2013, Verde obtained funding through Metro’s Regional Travel Options program to start Living Cully Walks (LCW), a program that seeks to support active living opportunities for Cully residents by improving their access to the neighborhood’s existing and proposed parks, natural areas, and other green spaces (Gordon 2015). During 2014 and 2015, LCW hosted 17 events in which participants walked, biked or took public transit to parks in Cully (see Figure 3).

![Figure 3 – Mapping barriers to pedestrian access](image-url)
Andando en Bicicletas en Cully (ABC), Hacienda CDC, Habitat for Humanity, and NAYA are assisting Verde in implementing the program. During the walking and biking events, participants marked on paper maps any barriers they encountered along the routes that would make travel dangerous or unpleasant (see Figure 4).

Living Cully Walk’s interest in collecting data on the location and types of barriers to safe pedestrian and bike access was threefold. First, the walking and biking events provided opportunities to educate Cully residents about green spaces in the neighborhood and encouraged them to engage in outdoor activities. Second, knowledge of the barriers to safe travel along different routes was needed in order to create a wayfinding system that could assist residents in traveling safely to parks on foot or by bike. Third, information about critical gaps in Cully’s transportation infrastructure could be compared with the improvements proposed through the Connected Cully program to determine whether additional investments on the part of the city, Metro, or other governmental agencies were needed.

By the end of March 2015, more than 300 people — including youths and adults — had taken part in Living Cully Walks’ biking and walking events, with the majority being Latino residents from Cully (Gordon 2015). Over the course of a year, participants walked, biked, or rode buses to Cully, Colwood, Kʰunamokwst, and Wellington Parks as well as Whitaker Ponds and Rigler School. The most common barriers mapped were lack of sidewalks and curb cuts, inadequate street lighting, and poor signage. Roads with potholes, clogged drains, and poorly maintained crosswalks also were identified along many of the routes.

**Forming the Living Cully Walks/ISS-CBPM partnership**

By spring 2015, the barrier-mapping portion of the Living Cully Walks program had wound down. The staff began planning the next phase of the project — developing a wayfinding system so that Cully residents (and visitors) could navigate safely to the neighborhood’s green spaces. The first step was to create a temporary wayfinding system that residents could evaluate. LCW could then use the community’s input on the temporary system to design the permanent wayfinding system. However, Verde’s data coordinator, who also served as the LCW program manager, lacked the time to put together the maps for the temporary signs. By happenstance, an ISS-CBPM team member had participated in LCW meetings and events during fall 2014. She suggested that Verde’s data coordinator approach ISS for mapping assistance. After an initial meeting in February 2015, the ISS-CBPM team leaders met with Verde staff during March and April.
to identify activities for which Verde lacked in-house expertise, and which fell within the purview of the ISS-CBPM pilot project.

**Living Cully Walks project activities**

Although a formal agreement regarding roles and responsibilities was never established, the role of the ISS-CBPM team in the LCW Wayfinding Project is most aptly described as that of technical advisor. Living Cully Walks took the lead in coordinating the temporary wayfinding sign development and community outreach. Together we identified four activities, three of which involved mapping, where technical support was needed:

- Assisting Verde in organizing a community mapping workshop to identify residents’ views about the best locations for posting temporary wayfinding signs showing bike, pedestrian, and bus routes for safely reaching Cully’s parks;
- Developing maps for inclusion on the temporary wayfinding system signs;
- Assisting with researching the city’s regulations for signs located in public spaces;
- Creating maps for use as advocacy tools in discussions with city planners regarding priorities for transportation-related improvements to make Cully more pedestrian and bike-friendly.

Two students enrolled in a course taught at PSU by the ISS-CBPM team’s technical advisor, offered to take on activity 4 as a class project. Consequently, the ISS-CBPM team focused on providing support for the other three activities. A graduate student cartographer enrolled in PSU’s Geography department and the ISS-CBPM team’s lead social scientist worked closely with Verde’s staff throughout the summer and fall of 2015.

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2 The student project involved converting Verde’s data about barriers to pedestrian and bike access to Cully’s parks from an ArcGIS environment to a Google Earth Pro environment. The rationale for this conversion was that Google Earth Pro is much easier for community members to learn how to use than ArcGIS, which requires specialized training. Moreover, Google Earth Pro is available for free whereas ArcGIS must be purchased and is expensive. The PPGIS students also developed a virtual tour in Google Earth Pro of the Cully neighborhood showing barriers to safe access to parks that the Living Cully Walks project had identified, as well as the locations of planned transportation improvement projects. Additionally, the students created a user manual explaining how to use Google Earth for this application.
Wayfinding workshop

Our first joint activity was co-organizing a community-mapping workshop to share the results of the barrier mapping events and obtain residents’ input about where the temporary signs should be placed. The LCW team led the development of the workshop presentation and facilitation guide and conducted community outreach to let neighborhood residents know about the workshop. The ISS-CBPM team provided advice on how to structure the mapping exercise and developed the large-format maps for collecting locational data during the workshop.

The mapping workshop took place on June 19, 2015 at North Mariposas, a housing development centrally located in the Cully neighborhood and operated by Hacienda Community Development Corporation, one of Verde’s partners. Twenty community members participated in the workshop. The meeting was held in Spanish since most of the participants were immigrants from Latin America and all spoke Spanish. All but three participants were women, and day care was provided for those with small children. Because the workshop took place during what would normally be mealtime for most participants, Verde provided food and beverages prior to the meeting.

During the mapping session, four to five people worked together on each map to identify locations where wayfinding signs should be placed (see Figure 5). Participants used colored dots to indicate their preferences for sign locations. They also noted comments about the merits and shortcomings of prospective sites on sticky notes placed adjacent to each colored dot. Each mapping group included at least one facilitator fluent in Spanish. The workshop facilitation guide and agenda are provided in Appendix A. After the workshop, the ISS-CBPM team’s cartographer created a composite map of the sign locations suggested by workshop participants. The LCW team used this map together with the data collected during the barrier-mapping events to select final locations for the temporary signs.

Wayfinding sign development

During the summer and fall of 2015, the LCW/ISS-CBPM partners collaborated in creating the temporary wayfinding system. The sign design process involved creating a series of maps showing safe routes to Cully’s parks, along with directional signs with estimated times and distances to reach the parks. Members of both teams met every week at Verde’s headquarters to design the signs and develop a final list of intersections suitable for sign locations.
To reduce the complexity of the signage system, we grouped prospective sign locations into primary and secondary nodes. We classified as primary nodes all of the major intersections located along Cully’s boundaries as well as intersections within the neighborhood with extremely high volumes of foot or bike traffic. We decided that primary node signs should include a map as well as a separate set of large directional arrows pointing to one or more parks. Intersections where walkers or bikers would need to change direction if they were following a route indicated on a primary node sign were classified as secondary nodes. To save on sign production costs, we decided to include only directional arrows and distances to parks on the secondary node signs.

Neither Verde’s staff nor the ISS-CBPM team members had previous experience with designing wayfinding systems so the process went more slowly than we anticipated. The departure of Verde’s data coordinator shortly after the mapping workshop further slowed down the design process. The data coordinator had done much of Verde’s initial research into wayfinding systems so her departure left a significant gap in the team’s institutional knowledge about wayfinding system design, as well as creating a temporary gap in project leadership.

Challenges we encountered while designing and siting the signs included:

- The maps had to be easily understood from a distance but also had to provide enough information that someone unfamiliar with the area could successfully navigate to the neighborhood’s parks.

- The signs had to be in both English and Spanish, and thus required more and smaller lettering than would ideally be on the signs.

- Although larger signs are easier to read from a distance, larger signs are more expensive to print and more susceptible to wind damage.

- Suitable poles or surfaces where signs with adhesive backing could be placed were not available at all of the intersections identified as important sites for signage.

An early draft of the wayfinding map (Figure 6) illustrates the difficulties of creating an easily readable map that relays information in two languages. In this early version, we outlined each park with a different color and experimented with indicating safe pedestrian and bike routes to the parks using the same color as their outline. However, this proved too complicated to read from a distance so we opted for a more streamlined approach (Figure 7). Similarly, the directional signs moved from a complex, hard to read format to a much simpler and more colorful design. Employees from both PBOT and Parks and Recreation reviewed the maps and directional signs before we sent them to the sign company for printing.

After taking into account cost and logistical considerations, we opted to have the temporary signs printed on corrugated plastic, a flexible material that is light and
inexpensive yet holds up well in Portland’s wet and windy winter weather. We attached all but two of the 20 signs to utility poles using plastic ties after researching city regulations governing sign placement and consulting with PBOT employees about their experiences. Based on the advice we got from PBOT employees, we had two signs printed in flexible plastic with an adhesive backing so that we could test how well the signs held up when attached to utility boxes. Our intent was to create affordable signs durable enough to last through a Portland winter and likely to be unattractive as vandalism targets.

Figure 6 – Early wayfinding sign map with complex legend
Activating the temporary wayfinding system

As the first step in activating Cully’s temporary wayfinding system, the LCW team worked with community members to put up the maps and directional arrow signs on December 16, 2015 (Figure 8). The temporary system will remain active through spring 2016. To kick off activities aimed at getting community input on the effectiveness of the signs, Verde organized an activation event on December 19, 2015. The event was held at the Living Cully Plaza building, which Verde had acquired earlier in 2015.

On the wayfinding system’s official opening day, a group of ten community members joined a walking tour led by two LCW team members. Participants walked about half a mile from the Plaza along NE Killingsworth to the entrance of Cully Park, which is scheduled to open in 2017. The walking tour group reviewed three signs along the way, including one primary node sign and two secondary node signs. Another group of 12 opted for a bike tour, in which they reviewed signs along the route to K’unamokwst Park. LCW provided bikes and

Figure 7 – Final version of a Cully neighborhood wayfinding sign

Figure 8 – Cully Park wayfinding
helmets for participants interested in going on the bike tour. The tours were conducted in both Spanish and English. After the tours, participants gathered in the Living Cully Plaza building’s entrance hall to write down their comments about the signs. The written comments were posted on a bulletin board so that participants in the evening event following the tours would have an opportunity to read them.

Participants in the evaluation tours stated that they thought that the signs were a positive addition to the neighborhood. However, several participants recommended making the colors deeper and using even more color to make the signs stand out. The directional arrows were difficult for some people to understand and several participants suggested using compass directions (i.e., north, south, east, west) in place of direction arrows. Overall, the comments indicated that LCW should make the signs larger so that the lettering, arrows, and maps are more visible to pedestrians and bikers.

That evening Verde hosted a “Posada” for Cully residents to celebrate the activation of the temporary sign system (Figure 9). A posada is a religious celebration that takes place in Mexico between December 16th and December 24th. It begins with a re-enactment of Mary and Joseph’s effort to locate a room at an inn the night that Jesus was born. The re-enactment is traditionally followed by an evening of singing, dancing, and eating at the home of the family hosting the posada.

The LCW posada was a resounding success – more than 80 people showed up, about half of them children. Community members brought a variety of traditional dishes for the potluck; Verde supplied soft drinks and juice. A local children’s dance and singing troupe provided entertainment. Participants in the posada also had an opportunity to provide feedback on the signs and to look at a poster display describing the wayfinding project.

Since activating the wayfinding system in December, LCW has hosted several events to elicit feedback on the signs. In January and February 2016, the LCW team sponsored sign evaluation field trips with employees from PBOT, Portland Parks and Recreation (PPR), and Metro. They conducted surveys in the neighborhood during March 2016 to see whether residents had noticed the signs and if so, what suggestions they had for improving them. LCW is also offering an after-school environmental education program in which children learn about the sign system and how to navigate their way to Cully’s parks using the wayfinding system.
Benefits of the Cully CBPM partnership

The LCW/ISS- CBPM partnership was successful from several standpoints. Partnering with the ISS-CBPM team enabled LCW to design and implement a functional temporary wayfinding system. This system is a basic building block in the Cully neighborhood’s efforts to create a more walkable neighborhood and reduce residents’ carbon footprints. The mapping team’s involvement turned out to be particularly important since the LCW lost its in-house mapping expert just as the temporary wayfinding design process was getting underway, leaving a major and unanticipated gap in LCW’s technical capacity to carry out the project. The CBPM partnership enabled LCW to easily bridge this gap, and allowed LCW to focus more of its resources on developing and implementing a community engagement strategy for the activation and evaluation phase of the temporary wayfinding system.

The LCW/ISS-CBPM partnership supported ISS’ goals of enhancing students’ sustainability education experiences. The PSU graduate student affiliated with the project gained valuable real-world experience in map design and researching city regulations. The value of this experience to the student transcended mere knowledge and skill acquisition as it culminated in the student obtaining a paid internship position with the PBOT’s community outreach program. The CBPM partnership also strengthened ISS’ ongoing relationship with Verde and Living Cully Walks.

The City of Portland also benefited from the CBPM partnership. Employees from the PBOT and PPR have indicated that Cully’s temporary wayfinding system is an important contribution toward their efforts to encourage active transportation and expand access to green space. By facilitating the completion of the signage system, the LCW/ISS-CBPM partnership has bolstered the city’s capacity to achieve its climate action objectives.
Section 3: Case Study 2 - Livable Lents Community Listening Project

Neighborhood characteristics

Lents is located in southeast Portland, and is bordered by SE Powell to the north, the Clackamas County line to the south, SE 82nd to the west, and SE 112th to the east. Lents was incorporated as a town in 1892, but was subsequently annexed to Portland in 1912 (Mills 2007). However, the area east of SE 92nd was situated outside the town boundaries and did not become part of Portland until the 1990s (City of Portland 2009a).

The Lents Town Center redevelopment feasibility study (City of Portland 2009b) describes Lents as a transportation hub, citing the presence of I-205, three major arterials (Powell Boulevard, Foster Road, and 82nd Avenue), the MAX green line, seven bus routes, and the Springwater Corridor walking and bike trail. However, being a transportation hub has not brought Lents economic prosperity -- rather than bringing people to Lents, these transportation routes take them through Lents on their way to shop or work elsewhere.

Land use patterns

Lents is a moderately sized neighborhood on the outer edges of the older section of Portland. Single-family residential units — most built before the 1940s — dominate the neighborhood, although multi-family housing is becoming increasingly common. Commercial use is concentrated along the neighborhood’s western and northern borders, corresponding to SE 82nd Avenue and SE Powell Boulevard respectively, with small pockets of commercial activity in the historic district around the SE 92nd and Foster Road intersection and along the Foster Corridor. Johnson Creek flows through southern Lents and its proneness to flooding heavily influences the types of land uses that are viable within its floodplain. Several large industrial concerns, including a rock crushing operation, a recycling facility, and several large auto repair and bodywork businesses occupy large portions of the east Lents floodplain (Leland Consulting Group 2013). As a flood mitigation measure, during the early 2000s, the City of Portland bought out and demolished a number of homes situated within the floodplain and then restored the area to its natural habitat (Mills 2007). The rehabilitated 70-acre site is now managed as the Foster Floodplain Natural Area. Between this natural area, Beggars’ Tick Wildlife Refuge, and several community and neighborhood parks, most Lents residents have ready
access to green spaces. The Springwater Corridor, a multi-modal trail built along an abandoned railroad right of way, traverses the southern part of the neighborhood, providing pedestrians and bikers a traffic-free route to both inner and outer southeast Portland neighborhoods.

**Population and housing**

With 20,465 residents, Lents is the fifth most populated neighborhood in Portland. The median household income in Lents was $40,659, considerably lower than the city median of $49,537. Lents has a younger population than the city as a whole, and households tend to be larger. Lents is one of Portland’s most racially and ethnically diverse communities. In the 2010 census, only 60 percent of Lents residents self-identified as White, compared with 72 percent city-wide. Asians comprised 16 percent of Lents’ population, nearly twice the city average of 9 percent. Roughly 16 percent of Lents residents are Latinos, also nearly twice the city average. Persons self-identified as Black made up 6 percent of the population, a somewhat lower figure than the city average of 8 percent. Lents also has a much higher foreign-born population than the city as a whole (25 percent versus 14 percent). The most common countries of origin among foreign-born residents include Vietnam (21.4 percent), Mexico (19.5 percent), China (16.5 percent), Russia (8.8 percent), and the Ukraine (3.6 percent). Roughly 54 percent of Lents households own their homes, a rate that is similar for the city as a whole. Although housing prices and rents in Lents have increased greatly over the past decade, it remains one of the most affordable neighborhoods in Portland (City of Portland 2014b).

**Neighborhood concerns**

Lents is a once-flourishing crossroads town that suffered from several severe shocks between 1945 and 1975 from which it has yet to recover. Its downward spiral began in the late 1940s when businesses relocated from Lents’ historic core to SE 82nd Avenue to take advantage of the automobile and auto parts market emerging along that route (Portland State University 1993). It suffered a second major blow during the 1970s when the construction of I-205 destroyed hundreds of homes in Lents and physically split the neighborhood in half (Mills 2007). The highway separated residents in eastern Lents from the business core, as well as from the newer commercial district on SE 82nd Avenue. The construction of the Foster/Woodstock couplet in 1975 further impaired the neighborhood’s wellbeing. Although billed as an improvement, the couplet eliminated parking along the Foster corridor, reducing customer access to businesses, and created an environment unsafe for pedestrians and bikers (City of Portland 1996). By 1993, tangible evidence of Lents’ decline included empty storefronts in the historic business district, an abundance of abandoned vehicles, illegal dumping on both public and private land,

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3 Unless otherwise noted, land area and population data in this section were obtained from the Statistical Atlas website: http://statisticalatlas.com/state/Oregon/Overview
industrial pollution from manufacturing sites, inadequate street lighting, and a lack of sidewalks and paved streets in some areas of Lents (Portland State University 1993).

Despite Lents’ moribund economy and aging infrastructure, the community leaders and city planners had high hopes for Lents in the 1990s. The 1996 Lents Neighborhood Plan envisioned the Lents of 2015 as a major center for local employment, characterized by vibrant new industries served by high capacity, easily accessible mass transit, and benefitting from a pedestrian and bike friendly environment (City of Portland 1996). Notions of climate change related sustainability that were emerging at the time were mainstreamed into the Plan, which highlighted the need to create a neighborhood where people could live, work, and play. To accomplish this vision, the City Council established the Lents Town Center Urban Renewal Area (LTCURA) in 1998 (City of Portland 1998). The LTCURA identified the revitalization of Lents’ historic downtown as well as improvements along the Foster Corridor in adjoining neighborhoods as the key to the area’s prosperity. Over the course of the next decade, more than 90 million dollars went into streetscape improvements, flood mitigation, and other infrastructural improvements (City of Portland 2009b). Despite these investments, by 2010 a thriving Lents had not materialized.

As confidence in the merits of the City’s infrastructure-led economic development approach in Lents declined, concepts such as sustainability, social equity, and community empowerment moved into the mainstream of Portland’s planning rhetoric and practice. The Portland EcoDistrict Initiative, a partnership developed in 2009 between the City of Portland and the Portland Sustainability Initiative, was a tangible example of this conceptual shift which impacted the development trajectory in Lents. The EcoDistrict Initiative seeks to “catalyze a broad movement to create resilient and equitable cities, grounded in local knowledge of community assets and priorities” (EcoDistricts 2015: 5). It emphasizes the integration of green infrastructure, community decisionmaking, and local economic development.

The Foster Green EcoDistrict, which encompasses the LTCURA together with adjoining areas was one of the first EcoDistrict pilot sites in Portland (EcoDistrict 2015). A Foster Green steering committee was formed in 2010. The Foster Green EcoDistrict Advisory Committee subsequently took on responsibility for community engagement for the Foster Lents Integration Partnership (SERA et al. 2012), a several-years long process which culminated in the Lents Five Year Action Plan adopted by the City Council in May 2014 (City of Portland 2014a).

Green Lents, a community group that provides volunteer, education, and leadership activities aimed at supporting neighborhood sustainability, led the development of a community-based guiding framework for the Foster Green EcoDistrict in 2011 (Portland Sustainability Institute 2011). To develop the framework, Green Lents contracted with the Northwest Institute for Community Enrichment (NICE) to implement a community listening and awareness raising project designed to elicit residents’ views about sustainability and what that might look like for Lents as well as raise awareness about opportunities for volunteering with Foster Green partners. Through this process, it
became clear that the term “sustainability” did not resonate with Lents residents nor was it a theme around which a common neighborhood vision could be developed. Consequently, in 2012, the NICE used “livability” rather than “sustainability” as the guiding theme for that year’s community listening project, which was structured so as to expand the geographic coverage of the 2011 survey (Qin 2012). The community listening project and awareness raising campaign became known as Livable Lents.

Following the 2012 campaign, Green Lents integrated Livable Lents into its organizational structure as its community outreach program. During 2013 and 2014, the NICE worked with Green Lents to create the partnerships with other community groups and acquire the resources needed to make Lents a permanent, year-round program. The NICE and Green Lents viewed Livable Lents’ annual survey, associated community feedback processes, and pledge campaign as tools for adaptive management that can help promote climate action in Lents as well as ensure that the city plans are implemented in ways that reflect the priorities of community members. In essence, the LL community listening project is simultaneously a mechanism for collecting baseline data about residents’ livability goals — many of which are climate action oriented — and monitoring progress toward those goals. In late 2014, a partnership consisting of the NICE, Green Lents, and the Confluence Environmental Center had acquired sufficient resources to bring on an AmeriCorps fellow to implement the Livable Lents project during 2015. The timing coincided with the implementation of the recently-adopted Lents Five Year Action Plan, in which the Portland Development Commission laid out a revised strategy for catalyzing economic development in the Lents Town Center.

Although the Portland Development solicited community input for the Lents Five Year Action Plan, many residents felt that the community engagement process had not been sufficiently broad-based and that, therefore, the Action Plan did not adequately reflect the priorities of Lents residents. To address this gap in participation, a major goal of the 2015 LL Community Listening Project was to obtain input on livability goals from a much broader set of residents, with a particular focus on non-English speaking residents who make up a significant portion of the neighborhood’s population.

**Forming the Livable Lents/ISS-CBPM partnership**

The Livable Lents/ISS-CBPM partnership emerged from a series of meetings that took place during March and April 2015 between the ISS-CBPM team leaders and the Foster-Green Ecodistrict Steering Committee. Our discussions coalesced around displacement as a unifying theme for a mapping project. However, the timing for starting a new project was poor as all of the organizations involved in the Steering Committee were ramping up their summer programming activities. Meanwhile, a team of PSU graduate students had started to design a prototype online mapping application for the Livable Lents 2015 Community Listening Project. The prototype proved successful, but Livable Lents, which relies on an all-volunteer staff, lacked the capacity to integrate it into its summer door-to-door canvassing and tabling activities. Livable Lents also lacked the in-house technical expertise needed to analyze the spatial data and produce maps. Since this was precisely the type of support the ISS-CBPM project was designed to provide, in June 2015 the ISS-
CBPM team hired the two graduate students to continue working on the Livable Lents survey and the partnership with Livable Lents came into being.

**Livable Lents project activities**

Although no formal agreement was ever established with Livable Lents regarding partner roles and responsibilities, Livable Lents and the ISS-CBPM team functioned as co-equal partners in the implementation of the Community Listening Project. Each partner brought particular strengths to the project. As one of the project’s original designers and holder of its institutional memory, the NICE consultant to Livable Lents brought the other two partners up to speed on the project’s philosophical underpinnings, history, and objectives. He also provided on-going guidance to the team regarding survey implementation and strategies for community engagement and advocacy. An AmeriCorps volunteer affiliated with Livable Lents, which has no paid staff, coordinated the project. His responsibilities included volunteer recruitment, training, and management, supervising the survey data collection, entry and management process, coordinating project communications and community outreach, and soliciting donations for the community forum, among other tasks. The ISS team, which consisted of two Masters students in the Urban and Regional Planning program and a social scientist affiliated with ISS, took on four roles: Integrating the mapping component into the survey and creating maps, analyzing the data and reporting the survey findings, bolstering Livable Lents community engagement capacity through the provision of funding and staff time, and building connections between Livable Lents and potential survey data users in the city planning agencies.

In keeping with principles of participatory planning, all team members — whether volunteers, paid staff, students, or faculty members — had a meaningful say in identifying project goals and strategies for implementing those goals. To facilitate information sharing among team members, Livable Lents hosted a site on Google Drive where team members could store and have access to data files, meeting notes, and other project documents. Additionally, when data collection and community activities were in full swing, Livable Lents hosted in-person meetings of all partners once a week to plan the upcoming week’s activities and reflect on how the work had gone during the previous week.

**Survey data collection**

Livable Lents took the lead in implementing the survey, which they had designed earlier in the spring prior to the involvement of the ISS-CBPM team. The survey was simultaneously a tool for collecting data about residents’ perspectives on livability and a community engagement and advocacy tool (Figure 12). We used three approaches for administering the survey: door-to-door canvassing, tabling at public events, and an online
survey. The online survey was housed on the Livable Lents website. We circulated a link to the survey on partners’ listservs and also included it on the flyers we left at homes when no one came to the door during canvassing.

During the survey we collected data from community members about their views on what makes a livable neighborhood, the conditions that detract from Lents’ livability, and their ideas for how livability in Lents could be improved. We asked respondents to identify which of ten dimensions of neighborhood livability they felt were most important for Lents and why those were important to them. The livability dimensions included: environmental health, food access, affordable housing, transportation, community space, safety, economic development, community engagement, education opportunities, and renewable energy. At the end of the survey, respondents could choose to make a pledge to take part in activities to improve neighborhood livability. Livable Lents used the pledge data to link pledgees to the appropriate community organizations. The online and offline survey questions are included in Appendices 2a and 2b.

Each of the data collection methods had strengths and weaknesses. The door-to-door canvassing was most time-consuming but provided an opportunity for Livable Lents volunteers to meet residents at their homes and engage in conversations about sustainability-related programs and activities taking place in the neighborhood. Tabling also provided opportunities for face-to-face interaction with Lents residents (Figure 13). However, in general conversations with respondents during tabling events tended to be shorter than during the door-to-door visits, and unlike canvassing, tabling did not provide an opportunity for team members to directly observe conditions in the neighborhood. The online survey required the least amount of work to administer, but it provided no opportunities for face-to-face interaction and was more limited than either tabling or canvassing as an awareness-raising tool.

Over the course of the field season we collected 232 surveys through door-to-door canvassing, 113 through tabling, and 65 through the online site for a total of 410 useable surveys. Overall, tabling was the most efficient data collection approach as it was considerably less time-intensive than door-to-door canvassing but more effective at generating responses than the on-line surveys. Moreover, since we observed spikes in the number of online surveys immediately after the tabling events, we believe that many of the online respondents learned about the survey while at such events.
Although ISS-CBPM team members assisted with tabling and canvassing, our main role was to integrate the online mapping application into the survey. The students constructed the application in SuprMap\(^4\), a community-based open-source mapping platform developed by Dr. Vivek Shandas of Portland State University. The ISS-CBPM student team trained Livable Lents volunteers in the use of tablets to collect survey data using the SuprMap application. We had hoped that using the tablets would eliminate the step of having to transfer data from paper surveys into a digital format. However, although the tablets worked well in a tabling situation, they were awkward and time-consuming to use when canvassing. Consequently we continued to rely on paper surveys for canvassing, using a hard copy map in place of the SuprMap web application to record locations.

**Survey data analysis, map production, and reporting**

The ISS-CBPM team took the lead in analyzing the survey data, creating maps, and developing a report describing the survey findings and outreach activities during 2015. However, we did all of these tasks in close consultation with the NICE and Livable Lents. Our partners worked with us to identify the types of analysis and maps which would be most useful for reporting back the survey findings to the community and most helpful as tools for advocating for shifts in the city’s development priorities for Lents. They also contributed to the writing and editing of the project report.\(^5\)

A major challenge that we never resolved was identifying an open-source GIS program for analyzing the spatial data. As an under-funded volunteer-run organization, Livable Lents lacked the resources for purchasing the ESRI’s ArcGIS 10.3 software that our team used for making maps and data analysis. Additionally, the learning curve for using ArcGIS is quite steep and the LL coordinator or other volunteers did not have time to learn how to use the program.

We initially planned to identify a free open-source program which we could train LL volunteers how to use. However, we would have needed to familiarize ourselves with the open-source program and lacked the time to do so. If LL continues with its plans to administer the Community Listening survey each year, its staff will either need to continue to rely on outside technical support for data analysis or develop a cadre of volunteers with training in GIS, whether open source or proprietary. Our team produced maps similar to the one created for community spaces (Figure 14) for sites where residents had transportation or crime and safety concerns, as well as sites residents considered important for economic development.

\(^4\) The SuprMap website is located at http://suprmap.org
\(^5\) The Livable Lents Community Listening Project 2015 Outreach Report can be found on the Livable Lents website: http://livablelents.org
Another challenge was that the data analysis took much longer than we had anticipated. In part this was due to the difficulties we had with retaining the links between the spatial and non-spatial data when exporting the data out of SuprMap. The coding and analysis of the qualitative data was also time-intensive and required that the students who did the analysis learn a new software program. The collaborative approach for writing the approach was time-intensive as well.

The timing of the data analysis and report writing was another factor in the unexpectedly long turnaround time between fieldwork completion and the compilation of the results. The main issue had to do with a drop in the ISS-CBPM team’s capacity in early fall when both students on the project were offered much better paying research assistantships with another department at PSU. Fortunately, the two students continued to work on the project as volunteers but they had less time to devote to the project during the fall than we’d anticipated.

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6 We used Dedoose, a relatively inexpensive web-based application for qualitative and mixed methods research data analysis (http://www.dedoose.com).
Community engagement

We went into the partnership with LL expecting that mapping and data analysis expertise would be our most important contribution. However, it turned out that enhancing LL’s community engagement capacity was equally, if not more important, than the mapping assistance we provided. Early on in the partnership, we identified translation of the surveys into several of the major non-English languages spoken by Lents residents as a critical first step in making the survey more inclusive. With the financial resources the ISS-CBPM project brought to the table, we were able to translate the online and paper surveys into three languages (Vietnamese, Spanish, and Russian). However, to reach out effectively to speakers of those languages, LL needed to have people who spoke those languages involved in the door-to-door canvassing and tabling. To address this need, we used funding from the ISS-CBPM project to hire three “community ambassadors” to participate in the tabling and door-to-door canvassing.

The ISS-CBPM project also provided funding and staff time to support the Lents Community Forum which culminated the 2015 season fieldwork (Figure 15). This support enabled LL to fulfill its goal of giving community members an opportunity to validate the survey findings in an interactive group setting. We structured the Forum as a dialogue session where community members collectively identified livability priorities and brainstormed concrete steps for achieving their goals for those priorities. The Lents Community Forum was a community production, with numerous local businesses donating food and raffle prizes to the event. More than 70 people showed up for the Forum, including 50 Lents residents, a handful of residents from adjacent neighborhoods, and a representative from the PDC.7

Policy linkages

One of the major factors driving the Community Listening Project was the perception within the neighborhood that the Five-Year Action Plan process was insufficiently inclusive and that the strategies it laid out did not reflect the priorities of a broad spectrum of residents. Consequently, one project goal was to use the survey data to advocate with city planners for reshaping the action strategies in ways that would better address the community’s needs and concerns. To support Livable Lents in its efforts to achieve this goal, ISS-CBPM team members met during the fieldwork season with BPS

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7 A description of the Forum and its outcomes are provided in the Livable Lents Community Listening Project 2015 Outreach Report which is located on the Livable Lents website: http://livablelents.org.
and PDC staff to get a better understanding of the types of data they would likely find most useful and, to the extent possible, including analyses of such data in our maps and reports. We planned to involve BPS staff directly in project design and implementation, but the agency was in the midst of completing an update to the Portland Comprehensive Plan and their community outreach staff did not have the capacity to take on a new activity during 2015.

Our partnership made a concerted effort to invite city and county officials and planners to the Lents Community Forum but we had limited success in getting them to participate in the event. However, subsequent to the forum we met with planners at several bureaus, including the Bureau of Housing, Bureau of Planning and Sustainability, and PDC to discuss the possibilities of getting city support to address affordable housing in Lents, a topic which had emerged as a key priority in the survey and community forum discussions. Information gleaned from these conversations, together with the relationships established between the ISS-CBPM students and Livable Lents, enabled Livable Lents to submit a successful application in December 2015 for support from PSU’s Master of Urban and Regional Planning Community Workshop program to develop an affordable housing plan for Lents during spring 2016. Known as “Lents Strong”, the spring 2016 activities have drawn heavily upon the lessons learned during the 2015 Community Listening Project. In particular, Lents Strong has adopted an enhanced version of the community forum approach, with language-specific focus groups planned in Spanish, Vietnamese, Russian, Mandarin Chinese, and Somali, as well as in English. Through working with Lents Strong, Livable Lents has been successful in getting funding from the Bureau of Housing to support interpretation at the focus groups and to translate the Community Listening Project surveys into Mandarin Chinese and Somali.

Benefits of the Livable Lents partnership

The LL/ISS- CBPM partnership was successful from several standpoints. Partnering with the ISS-CBPM team enhanced Livable Lents’ capacity to implement the Community Listening Project in several important ways. ISS-CBPM involvement provided bridge funding that made it possible for LL to fully integrate a mapping component into the survey. With this data, LL could map places residents perceived as contributing in a positive way toward livability as well as areas viewed as detracting from the neighborhood’s livability. We found that the mapping part of the survey helped attract respondents at neighborhood tabling events and that asking people to map was a good way to quickly break the ice when canvassing door to door. The large format maps produced from the survey data also proved useful during the Lents Community Forum as tools for initiating the collective dialogues around livability priorities.

The ISS-CBPM team’s participation essentially doubled the number of persons who could devote a significant amount of time each week to the Community Listening Project on a continual basis during the summer and fall. It is difficult to know exactly how many additional surveys this extra person power translated into, but based on figures from LL’s 2012 survey (Qin 2012), we can reasonably conclude that the additional workforce
roughly doubled the number of surveys received. More importantly, however, the combination of additional funding and person power made it possible for LL to translate the surveys and hire interpreters, thereby enabling it to reach out more effectively to three of the neighborhood’s ethnic communities. The extra funding and larger workforce also provided LL with the means that it otherwise did not have to organize a forum in which residents could provide feedback on the survey and collectively discuss their livability priorities. Moreover, the ISS-CBPM team’s involvement gave LL the ability to explore the survey data in considerably more depth than had been possible in previous years, providing a solid foundation on which it could develop its 2016 programming and neighborhood outreach campaign.

From the university’s standpoint, the LL/ISS-CBPM partnership was valuable for its contribution toward furthering the ISS’ goals of providing students with sustainability-related service learning opportunities and strengthening connections between PSU and community partners. Through this service learning opportunity, the two graduate students were able to apply the community development principles and technical skills they had acquired during the course of the academic year to real-world issues. Equally important, they acquired a solid set of skills and knowledge about community-based participatory research, skills and knowledge that can only be obtained through real-world experience. Moreover the partnership laid the foundation for Livable Lents to establish a longer-term relationship with the Master’s of Urban and Regional Planning Community Workshop program, a relationship that greatly expands LL’s capacity to collect and apply policy-relevant data on one of the most pressing issues — affordable housing — facing Lents at this time. ISS also benefitted from the partnership through the strengthening of the ties between ISS’ SNI program and PSU’s Urban and Regional Planning department and between SNI and Green Lents/Livable Lents.

That the LL/ISS-CBPM partnership benefitted the City is evidenced in the Bureau of Housing’s willingness to provide support for Lents Strong, whose work facilitating a community-based affordable housing plan builds directly on the lessons learned about neighborhood livability priorities and community engagement strategies through the 2015 Community Listening Project. More broadly, the Community Listening Project is an example of an inclusive community-based approach for assessing local perceptions of neighborhood conditions and livability priorities. If replicated over time, the approach can become a tool for monitoring how well neighborhood livability goals are being met.
Section 4 – Reflections and Lessons Learned

Our pilot suggests that the model of a three-way partnership between PSU, neighborhood and community groups, and planning agencies to accomplish fine-grain mapping and spatial data analysis has strong potential to support implementation of the 2015 CAP. In this section, we reflect on the benefits that accrued to each pillar of the community-PSU-planner triads for the Cully and Lents pilot projects and discuss the key lessons learned through the pilot initiative.

Pillar 1 - Community empowerment and capacity building

Tables 1 and 2 summarize key characteristics of the LCW and Lents case studies, respectively. Although quite different in their approaches, the LCW Wayfinding and the LL Community Listening projects have similar goals — empowering community members to take an active role in decision-making processes that affect their living conditions and facilitating the development of physical and social infrastructure that encourages community members to adopt climate-friendly behaviors. Both emerged in response to needs identified by the communities in which they operate, and in both neighborhoods community organizations led their design and implementation.

Our community partners have indicated that the ISS-CBPM initiative added considerable value to their work by filling skill and knowledge gaps at critical times and, in the case of Livable Lents, providing financial and human resources that enabled them to reach out to a broader segment of the community. That LCW and LL have expressed an interest in continuing the partnership with the ISS-CBPM team during 2016 is a clear indication that the relationship is important to them.

Pillar 2 - Enrichening sustainability education and research

The pilot initiative highlights several ways in which a CBPM program can provide value-added to ISS and PSU programs more generally. Both projects enriched the participating students’ sustainability education experience by providing them with pathways for moving classroom-based ideas about community and policy-relevant research from the design to the implementation phase. Moreover, the benefits to the students transcended the period in which they worked on the projects. The urban and regional planning students involved in the LL Community Listening Project leveraged the experience they gained in Lents and their knowledge of the city’s policy networks to create an action-oriented research collaborative to develop innovative community-based solutions to Lents affordable housing problem. The geography student who worked with the LCW Wayfinding System Project leveraged his experience in Cully to obtain an internship assisting PBOT with their community outreach in adjacent neighborhoods. The practical experiences gained from working on the CBPM projects thus served as a springboard to social entrepreneurship for the students involved in the Lents project and career-building employment for the student working with LCW.
Table 1 – Living Cully Walks component profile

<table>
<thead>
<tr>
<th>CBPM activity</th>
<th>Living Cully Walks (LCW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical assistance for developing a temporary wayfinding system as part of LCW’s effort to increase pedestrian, biker, and transit user access to neighborhood parks</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Nature of initial connection</th>
<th>LCW data coordinator approached ISS for assistance with developing maps and designing a community mapping workshop</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Connections within PSU</th>
<th>Sustainable Neighborhood Initiative – initial connection Department of Geography - 1 Masters student hired to work on the project</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Links with city (strength assessment)</th>
<th>Portland Bureau of Transportation (moderate) Portland Parks and Recreation (strong) Bureau of Planning and Sustainability (weak)</th>
</tr>
</thead>
</table>

| Accomplishments |  Wayfinding workshop design/implementation with LCW  
 Data collection maps for community workshop  
 Temporary wayfinding system maps  
 Research on sign regulations  
 Field reconnaissance for sign placement  
 Assistance with sign evaluation |
|-----------------|---------------------------------------------------------------------------------------------------|

| Challenges |  Loss of LCW data coordinator in early summer created a temporary gap in leadership as well as on-going loss of technical capacity  
 Summer scheduling (staff of LCW and ISS-CBPM on vacation)  
 LCW capacity to do sign design work was limited  
 Outreach to non-Latino community members relatively weak |
|--------------|---------------------------------------------------------------------------------------------------|

| Strengths |  Well-established project with a clear vision and goals  
 LCW had strong outreach capacity, especially among Latino residents  
 Regular meetings (weekly) kept the project on track  
 Strong support within LCW for project, including funding for core staff members  
 LCW had already-established relationships with PBOT and PPR |
|------------|---------------------------------------------------------------------------------------------------|

| Spin-offs |  Student invited to do a presentation at regional cartography conference  
 PBOT internship for student  
 Story map under development with assistance from the Institute for Portland Metropolitan Studies |
|-----------|---------------------------------------------------------------------------------------------------|
Table 2 – Livable Lents component profile

<table>
<thead>
<tr>
<th>Activity</th>
<th>Livable Lents (LL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical assistance for incorporating a mapping component into the LL annual neighborhood survey (Community Listening Project). This data collection and neighborhood livability challenge campaign aims to monitor residents’ perceptions of livability in Lents and to encourage adoption of climate-friendly behaviors.</td>
<td></td>
</tr>
</tbody>
</table>

| Nature of initial connection | The ISS-CBPM team worked through the ISS Sustainable Neighborhoods Initiative to establish a relationship with the Foster-Green Ecodistrict steering committee. This relationship did not pan out and eventually the ISS-CBPM team opted to work with LL on their Community Listening Project. |

| Connections within PSU | • Sustainable Neighborhoods Initiative – initial connection
• Department of Urban and Regional Planning (2 Masters students hired to work on the project) |

| Links with city | • Bureau of Planning and Sustainability (weak)
• Bureau of Housing (moderate - post project via student involvement)
• Portland Development Commission (weak – post project)
• Bureau of Environmental Services (moderate – mostly post-project and via student involvement) |

| Accomplishments | • Refinement of pilot web map application; hard copy map developed for door-to-door data collection
• Survey translated into 3 languages
• Community ambassador program
• Survey data analysis and map development
• Community forum (report validation and next steps)
• Final report of survey and community forum results |

| Challenges | • Got off to late start due to community organizations’ difficulties reaching agreement as to an appropriate project
• Reliance on intermittent volunteers contributed to data inconsistencies
• Lack of clarity on how LL activities fit within the programming priorities of its parent organization, Green Lents
• Lack of clarity as to the type of data city planning agencies find useful |

| Strengths | • Strong interest within LL for mapping work (though no funding or paid staff)
• LL leveraged support from local businesses and community groups |

| Spin-offs | LL leveraged the 2015 survey and community forum activities to put in a successful application to obtain technical assistance from the PSU Master of Urban and Regional Planning Community Workshop program during 2016. Experience gained from the translation and community ambassador experiments has informed the design of the workshop’s community engagement strategy. |
The initiative has successfully built and strengthened cross-disciplinary and cross-departmental ties among faculty at PSU as well. Aside from working with faculty in Urban and Regional Planning and Geography during the pilot initiative, the ISS-CBPM’s lead social scientist has provided technical advice to a sociology faculty member interested in applying community-based mapping techniques to the study of access to Portland’s proposed Green Loop. She is currently collaborating with the Institute of Portland Metropolitan Studies (IMS) to develop story maps for publication on IMS’ Neighborhood Profiles website. Additionally, a team composed of faculty from ISS and the Department of Geography are leveraging the relationships built through the two ISS-CBPM partnerships to develop a community-based values mapping project to support more inclusive park planning in East Portland. Lastly, the CBPM initiative strengthened and extended ISS’ previously existing relationships established through the Sustainable Neighborhoods Initiative by providing a technical assistance mechanism that allowed for greater continuity in student support than is possible with one-term course-based technical assistance.

**Pillar 3 - Connecting with policy makers and planners**

The ISS-CBPM pilot initiative has had a positive impact on PSU-community relationships and has strengthened relationships between faculty members and programs within PSU. However, the third objective of the initiative — building strong connections with planners and policy makers — has proved to be much more elusive. As mentioned in Section 1, the ISS-CBPM initiative coincided with the finalization of Portland’s Comprehensive Plan update and therefore our formal partner, the Bureau of Planning and Sustainability, had little time to spare for new endeavors. However, we believe that a more important factor was our overly ambitious agenda relative to the resources available for implementing the initiative. We underestimated the amount of time it would take to simultaneously build new relationships with two communities while also building new relationships with the planning bureaus with which ideally we would have had more frequent interactions (i.e. the Bureau of Planning and Sustainability, Portland Bureau of Transportation, Portland Parks and Recreation, and the Portland Development Commission).

We opted to emphasize building our community-based relationships since those were critical to achieving on-the-ground results. In the process, however, we paid less attention to developing strong links with planning agencies and providing policy advocacy assistance to our partners than we had intended. Fortunately in neither partnership was this strategy a fatal flaw. The LCW staff already had well-established connections with PBOT and PPR, the two city bureaus most relevant to the wayfinding project. They were able to draw those connections at critical points when input on sign design and siting was needed. For Livable Lents, the NICE coordinator brought to the table a long history of working with planning issues in Lents and had considerable familiarity with the different bureaus. Additionally, in the post-fieldwork phase of the LL project, the CBPM team graduate students successfully made connections with and generated support from city bureaus, notably the Bureau of Housing and the Bureau of Environmental Services, for a follow-on project (Lents Strong). Nonetheless, it is important for future CBPM

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8 IMS neighborhood profile website http://neighborhoodpulsepdx.org/profiles
efforts to work toward ensuring that the city bureaus are involved as active partners so as to create policy making environments more likely to be receptive to community-generated data.

Lessons learned

We highlight below some key lessons that emerged during the pilot initiative that can inform future community-university-city CBPM partnerships.

1. Assess whether and when it is feasible to build community capacity to do in-house map production and spatial data analysis.

   In both the Cully and Lents cases, community members played an active role in collecting spatial data. None of the Livable Lents volunteers had expertise in map production and spatial data analysis, and in the interest of getting the work done on time, the ISS-CBPM team did all the cartographic and spatial analysis work. LCW initially had such skills in-house but lost them when their data coordinator resigned shortly after the ISS-CBPM team became involved with the project. However, time did not permit us to train new LCW staff in how to do these tasks. At the end of the projects, both organizations expressed a desire for building in a training component in map production and data analysis in future projects. However, our LL partners voiced reservations about whether they would have the capacity to integrate mapping into its activities over the long term given their reliance on an all-volunteer staff.

   One challenge to building mapping capacity in community organizations is identifying mapping and data analysis software or web/mobile applications that are inexpensive and easy to use but which also produce maps and data charts in formats that city planners will find persuasive. A second challenge is chronic lack of capacity and/or rapid turnover in persons available to do the work in organizations such as Livable Lents that rely entirely on volunteer labor. In such cases, training may not be an effective use of resources since either the person trained will lack the time to do the mapping work or s/he will leave and a new person will need to be trained.

   To help address the first challenge, we recommend developing a “state of the art” inventory of open source or low cost mapping applications and an assessment of the circumstances under which each is useful. These technologies change rapidly, however, so a strategy for periodic reassessments and a means for distributing information about new applications would also be important. To address the second challenge, we recommend having a discussion early on in the CBPM process to determine whether training of community members in map production and spatial data analysis are important goals for the community. If yes, the CBPM team should focus its energies on working with community partner(s) to develop a training strategy that addresses the long-term sustainability of mapping and spatial analysis knowledge and skill acquisition within the community.
2. Strive to make mapping and mapped data more readily accessible — provided that community members agree that their data can be shared and that adequate precautions are taken to protect community members’ privacy and intellectual property rights.

During the LCW wayfinding workshop we collected data in a group setting using paper maps. This had the advantage that participants could get a general idea of the overall results by looking at the maps marked by other groups without having to wait for the data to be processed. In the Livable Lents work, such comparisons were not possible since both the paper and web-based maps were filled out individually. In both Cully and Lents, the data became essentially inaccessible to community members once it was digitized.

LCW staff and LL volunteers expressed an interest in providing community members with easy access to non-sensitive data as a way of supporting transparency in project governance and building a sense of ownership within the community. They also wished to learn more about technologies that would allow community members to create maps in real time and conduct their own analyses of the mapped data. Integrating such technologies would support transparency goals, as well as contributing toward a more engaged citizenry. However, care would need to be taken to ensure that community members agreed to data-sharing and that their privacy and/or intellectual property rights were protected.

We recommend that future CBPM projects develop a data storage, management, and access plan that lays out who will own the data, where and how it will be stored, and if and how it will be made accessible to community members. Community members will need to weigh in on whether they wish to share the data with outsiders and identify precautionary measures for protecting confidentiality or sensitive data.

3. Recognize that CBPM is fundamentally about building civic capacity to bring about social and political change.

CBPM is not just about helping communities collect or map data, it is also about expanding civic capacity to participate in meaningful ways in applied research, as well as empowering people to take action based on the data they’ve collected or the maps they’ve produced. In the LCW project, mapping was aimed most directly at changing individual or group behavior. However, the initial mapping of barriers was done with the intention of using the data to advocate for city investments in improvements to the pedestrian and bike transportation infrastructure. Likewise the LL Community Listening Project had a similar two-part goal of building connections within the neighborhood and catalyzing policy and behavioral change.

However, projects that emphasize civic capacity building often find it difficult to obtain funding because funders prefer to support projects that can show clear and direct links between actions taken and environmental/social outcomes. Yet demonstrating the links between enhancements in social capital and tangible environmental or social outcomes is challenging. It can also be difficult to show with any degree of certainty that policy
changes or planning decisions are due to community-based mapping advocacy efforts because typically such changes are catalyzed by a suite of factors occurring simultaneously rather than being attributable to just the mapping activities.

Identifying and building in measures for assessing the impacts of community mapping on a community’s capacity to achieve its sustainability or climate action goals is a critical gap that future CBPM efforts should seek to fill. Additionally, we recommend that CBPM projects develop an external communications and/or advocacy strategy early on in the project, including identifying key policy makers and planners and determining — preferably in collaboration with planners themselves — the kinds of data that will be most effective for accomplishing the community’s policy change goals.

4. Allocate sufficient time and structure opportunities for building and maintaining relationships.

It is difficult to overstate the importance of relationship building and maintenance in the success of CBPM partnerships. Building these connections requires an investment of time on the part of the partners, and for those partners new to the project site, it requires time to understand the social and physical milieu in which the project takes place. In contexts where partnerships are first being formed, it can be especially important to apply the ethnographic principle of “being there” — attending meetings in person, participating in outreach and data collection activities, or just “hanging out” at local events — as a way to build trust and familiarize one’s self with the community and concerns of community members.

5. Establish clarity about roles early on and revisit the allocation of roles periodically.

The guiding principles of CBPM emphasize the importance of structuring partnerships in ways that enable community members to participate meaningfully in all phases of the mapping project. However, this leaves substantial leeway for variation in how the roles of each of the partners are defined both for the overall project and for specific phases of the project. In both the LCW and LL Community Listening Projects, the ISS-CBPM team initially functioned primarily as a technical advisor, but as the two projects moved forward and the relationships developed, we began to function more as a co-equal decision-making partner. A frank discussion about partners’ desired roles, as well as mapping out of each of the partners’ capacities and limitations early on can facilitate the development of action plans that make effective use of the partnership’s overall assets without overtaxing any of the participating partners’ capacities.

6. Put into place strong communication and information sharing processes.

The partnerships with both LCW and LL worked well in part because both community groups had pre-existing organizational cultures that emphasized the importance of good internal communication processes, regular in-person meetings, and the sharing of information among team members. Although LL had a much looser organizational
structure than LCW, the LL Community Listening Project team was able to compensate by using a Google Drive folder for storing and sharing data, meeting notes, and other key information. We recommend that CBPM partners reach agreement early on as to how they will maintain regular communications — whether in person, by phone, on social media, or via other formats — and share information.

7. **Recognize the value of continuity in relationships and long-term commitments.**

From the community perspective, a major challenge associated with working with academic institutions is the often episodic and short-term nature of the availability of expertise, which frequently comes in the form of individual or groups of students providing assistance as a class project. Although such assistance can be quite valuable, it also has limitations. For example, without support from the ISS-CBPM project, the SuprMap application developed by graduate students for a class project would most likely not have been fully implemented. The importance of continuity in personnel surfaced during post-project evaluations, when our LCW and LL partners expressed their appreciation for having support from the ISS-CBPM team through the duration of the two projects. Both partners stated that it was especially helpful that the ISS-CBPM team’s composition remained constant through the projects, a factor that saved them a great deal of time and energy since they didn’t have to be continually bring new personnel up to speed.

A clear take-home lesson is that there is considerable value to community partners of having access to a program that can leverage short-term class projects into longer-term technical assistance. Another key lesson is that longer-term forms of student engagement — multi-term internships, project assistantships, and graduate research assistantships — are likely to yield better outcomes for CBPM projects given the time investment typically needed to build trust and gain familiarity with community issues and concerns. Similar conclusions hold for faculty researchers as well — funding mechanisms that support long-term commitments to a community or sets of communities are more likely to yield positive results than episodic, short-term funding.

8. **Seek and take advantage of opportunities for strategic leveraging of resources and connections.**

Communities can tap into PSU’s expertise in mapping and spatial analysis in a variety of ways. Aside from working directly with faculty researchers, communities can obtain mapping support through students working on individual or small-group class projects; through students working on a Master’s thesis, honors project, or other longer-term project; through courses structured specifically to assist communities with their data needs; or by working with a program or center within PSU that supports student involvement in community projects.

The Livable Lents case illustrates that considerable value-added can be obtained through intentionally and strategically linking these different forms of student/researcher
engagement: a small-group class project in which a mapping application was designed was leveraged through the ISS-CBPM pilot initiative into full-fledged implementation. The experiences and data from the ISS-CBPM initiative were then leveraged through the Masters of Urban and Regional Planning Community Workshop program into a grassroots-driven but city-supported community planning effort to address affordable housing issues. The ISS Sustainable Neighborhoods Initiative and Climate Action Collaborative played a key role as brokers linking the different players together. The graduate students who developed the mapping application, together with the leaders of the Livable Lents team, brought the long-term vision and harnessed community and student energy to bring the vision to fruition. The city, too, had a role to play, with BPS providing advice that led the LL team to pilot a community ambassador program and the Bureau of Housing Services contributing funding for translations for Lents Strong.

In the LL case, the synergy created among these disparate elements was due partly to chance but also partly to key players noting and seizing opportunities for connecting the elements in ways that could lead something that was bigger than the sum of its parts. We recommend that future projects in the CBPM initiative work closely with SNI and the Climate Action Collaborative to design synergistic “portfolios” of student and researcher engagement mechanisms so that gains from one activity can be leveraged into developing follow-on activities.
Section 5 – Envisioning a Sustainable CBPM Program

A key finding of the ISS-CBPM pilot initiative is that there is, indeed, a strong unmet need among community groups in Portland for access to mapping expertise and an equally strong unmet need on the part of the city for improving community engagement and data collection and analysis supportive of climate action at the neighborhood scale. Our experiences with the LCW and LL partnerships in 2015 suggest that a permanent PSU-based program modeled along the lines of the ISS-CBPM initiative could play an important role in meeting both of those needs, while simultaneously contributing toward PSU’s goal of being a leader in sustainability education and research. We believe that a hub-type program, in which the program serves primarily as platform for connecting groups with mapping needs — whether those needs consist of having a technical expert do the mapping or assistance with building the capacity of others to do their own mapping — is a model that best fits with the principles of CBPM.

Figure 16 provides a simplified diagram of how creating a CBPM hub program could potentially facilitate connections between communities desiring mapping expertise, PSU students and faculty seeking opportunities to apply their expertise, and city agencies seeking community level data and more effective community engagement strategies. In scenario A, the current situation, community groups typically approach each PSU department and city agency separately. Likewise, the city planning agencies contacts each community group and PSU department separately, and PSU faculty and students contact individual community groups and planning agencies. Scenario B depicts how a hub program could simplify the process of establishing initial connections between the various social actors. For example, rather than contacting several departments at PSU to find someone with the appropriate mapping expertise, a community group could contact the ISS CBPM liaison who would then connect them with the faculty members having the requisite skills and knowledge. Likewise, professors seeking opportunities for students in their GIS or other mapping-related courses to gain real-world experience could contact the ISS CBPM liaison to see if there were any community groups needing short-term assistance. The process could potentially be automated to some extent by developing a skills and needs database housed on the ISS website that participating community groups, faculty, students, and planners could consult.

ISS has funded or is funding a number of projects that involve community or neighborhood level mapping through the Climate Action Collaborative and the Sustainable Neighborhood Initiative. These include projects related to the Green Loop, heat island air quality measurements, an assessment of the increased flooding risks associated with the Johnson Creek floodplain, and an assessment of Portland’s urban food systems, among others. In many of these cases, either the CAC or SNI functioned as a hub, connecting university experts with community groups and vice versa. Locating a CBPM hub program within ISS would thus have the advantage of building on an already existing foundation of relationships and expertise in community-oriented mapping and engagement. However, similar mapping efforts are being or could be carried out at PSU through other programs, notably the three described below:
Figure 16 – Streamlining community access to mapping expertise at PSU
Institute for Portland Metropolitan Studies (IMS) — IMS played a major role in creating the Regional Equity Atlas and is currently developing a Neighborhood Pulse and Scorecard web-based mapping application for tracking and directing progress toward Portland’s Climate Action Plan goals. The Neighborhood Pulse data supplements IMS’ existing Greater Portland Pulse data. The Greater Portland Pulse and Neighborhood Pulse involve tracking macro and meso level data rather than micro-level community-based data. However, IMS also has a track record of community-level mapping. For example, in the early 2000s, IMS implemented a community-mapping program with funding from Ford Foundation. Additionally, IMS provides community mapping support to local organizations through periodic capstone courses.

School of Urban Studies and Planning – The School of Urban Studies and Planning offers students training in GIS, with a focus on its use in planning contexts. Several courses emphasize training in the use of GIS for community-based planning and are structured so that they link students with community groups needing mapping or spatial analysis expertise as part of the course. Others focus on particular planning topics but integrate mapping and/or spatial analysis into the curriculum and provide opportunities for class or individual projects that support community organizations’ needs for such expertise.

Department of Geography - The Department of Geography has an active GIS training program and is currently expanding its climate change expertise. It is also embarking on a program to expand its ability to place students studying GIS as interns with city programs. The Department’s Center for Spatial Analysis and Research (CSAR) could potentially serve as a hub for community mapping. However, with the exception of recent forays into cultural values mapping done in collaboration with ISS research faculty, CSAR does not have a strong history of doing community-based work.

Other potential sources within PSU for expertise on mapping and spatial analysis include Environmental Sciences and Management, Anthropology, Systems Science, and Civil Engineering, among others. However, at this time it’s unclear whether and to what extent these programs provide or could provide support for community-level participatory mapping of relevance to climate action or other sustainability issues.

Next steps: The ISS-CBPM team believes that it is important at this stage to develop a better understanding of the PSU “ecosystem” in which a CBPM hub program would be embedded and to work with related programs to create a vision for what such a program at PSU might look like. Some initial questions that need to be explored include:

- With which departments, programs, centers, or other PSU entities are community groups currently working to fill their needs for mapping and spatial analysis expertise?
- What do those relationships look like, and how robust are they?
• Is there a need for a CBPM hub that links PSU expertise with community and city needs for community-level spatial data? What is the value-added of such an entity over the current ad-hoc situation?

• What would a CBPM hub program look like within the framework of the broader PSU ecosystem?
  o Where would it be housed?
  o How would it be structured internally?
  o How would it interface with other programs at PSU?
  o What services would it provide?
  o How would it generate and sustain funding over the long term?
    ▪ Some options might include: long-term funding agreements with the city or other agencies, fee-for-service, and a mix of large and small grants.

Key next steps that we recommend ISS take to begin answering the above types of questions include the following:

• **Inventory** faculty members, programs, and courses at PSU that currently are sources of mapping and spatial analysis expertise of relevance to community-level data collection pertaining to climate change and other urban sustainability issues.

• **Assess** whether and how these faculty members, programs, and courses could benefit from the existence of a formal CBPM hub program housed at PSU.

• **Convene** an initial visioning meeting to develop a strategy for developing a CBPM hub program at PSU. Most likely this strategy would include visioning sessions with community groups and with city and other local agencies to identify specific ways in which a CBPM hub program could best support their climate action planning and implementation efforts.

By taking these steps, ISS can contribute toward local and regional efforts to develop innovative climate governance processes and structures that draw on local knowledge, experiences, and cultural practices to craft equitable and locally appropriate approaches to reducing local carbon emissions and enhancing climate change resiliency.
References


Acknowledgements

We express our great appreciation to the Bullitt Foundation, which made the ISS-CBPM pilot initiative possible through a generous grant as part of the Climate Action Collaborative Initiative. We give a special thanks to the Cully and Lents residents who shared their experiences and ideas during the mapping workshops and data gathering activities that took place during this initiative. We also thank our community partners — Living Cully Walks and Livable Lents — for inviting us to collaborate in projects that make a truly meaningful contribution to community wellbeing and that provide useful models for other neighborhoods to follow. We acknowledge as well the support of Verde and Green Lents, parent programs for Living Cully Walks and Livable Lents, respectively. We express our appreciation to the Bureau of Planning and Sustainability’s Northeast and East District Liaisons for their input along the way, and also to the Portland Bureau of Transportation and Portland Parks and Recreation staff who so generously shared their knowledge of sign design and regulations. Last, but not least, we thank the ISS staff members for so enthusiastically embracing the notion of a community-based mapping program and providing unfailing support throughout its implementation.
Appendix 1: Wayfinding Workshop Facilitation Guide

Workshop: Wednesday/miércoles 6/17, 6-8pm, Mariposas north community room
AGENDA/script

Schedule / horario:

Welcome / Bienvenido (5min)
- Introductions, overview/agenda, logistics
  - Materials: agenda
- Workshop goals / metas del taller:
  Provide community with an overview of the Living Cully Walks program and the data that’s been collected. / Proveer a la comunidad un repaso del programa Living Cully Walks y la informacion que ha sido colectado.

Introduce the concept of wayfinding and begin community design of a signage system to get people to parks in the neighborhood. Focus on sign placement to guide cyclists, pedestrians and transit riders to target parks: Khunamokwst, Cully Park, Whitaker, Colwood. / Presentar el concepto de wayfinding (señalización) e empezar el diseño comunitario de un sistema de señalamientos para guiar las personas a los parques en el vecindario. Enfoca en ubicación de señalamientos para guiar los ciclistas, peatones y pasajeros de tránsito a los parques prioritarios.

Context: LC Walks & Advocacy (15 min)
- LC Walks (slide presentation). We want to celebrate the data we’ve been able to collect through these activities – this is the data collected by the community, and we have an exciting new way to put it all together and share it with you.
- We’ve put it into Google Earth. (Tour: City – zoom to Cully – add parks and main streets – add LCW routes – add barriers data) Some of the major barriers we’ve seen include the conditions of sidewalks, intersections
  - Materials: LCWalks overview (ppt); computer; context & barriers tour

Frame: The data collected by the community is already being used to inform the city’s transportation improvement priorities and plans. We don’t want to spend a lot of time talking about it, it’s not the focus of tonight’s workshop, but we can see on the map that there are a lot of areas that the city has plans to improve. These are long term plans (in the next 10 years), and they’re not fully developed, but it’s important to see that what we’ve already done has made a difference, and what we do in the future can have a big impact. We are excited to be able to use this data for advocacy. (turn on TSP project layer). So, these are mostly about sidewalks, bikelanes, and intersections that the city
wants to build or fix in the next ten years. For now, though, we’ll focus on solutions we can work on ourselves. One of the main barriers to park access is lack of signage. We know that we can make it easier for people to get to parks is by telling them how to get there. So, we want to work on designing a system for that: a wayfinding system to get people to parks.

**Intro to concept of wayfinding (10 min)**
- Intro to wayfinding presentation (ppt)
- Pass around pictures and examples
  - Materials: presentation, pictures

We’ll take a break and eat, and when we come back we will break out into small groups and start thinking about where we would want to put signs to help get people to parks. So, one thing to think about while we eat: When you are giving someone directions, how do you guide them through the neighborhood? We are especially interested in access by bike, by foot, or by bus. Not by car.

**Break (6:40) say 10 minutes, expect 20.**
- Materials: food, plates, utensils

**Small groups (7:00) – 40 minutes, or 30 if we’re running late.**
- **Move tables into 4 separate tables**
- Setup: *I person is set up with a computer for each group, with the map file on Google Earth. We also have the large paper maps for each, taped to the table.*
  - Materials: computers (laptops x 4); large maps; stickers, pens, sign checklists

First, let’s spend a few minutes looking around the neighborhood with this tool. Let people point out where they live, where they go to the park, and ask about other places they go in the neighborhood (store, church, school, work...). Navigate to/between those places. We can use this tool to look at specific intersections and streets. (5min?)

Now, each group has a different park: Cully Park, Colwood, Whitaker, Khunamokwst. Our group will work on ____________ Park. We want to think about how to get to that park from all different directions, and using all different forms of transportation. (We’re not focused on cars – this project is especially interested in health and active transportation, and supports bike, walk, and bus rides.)

So, our task: decide where to put signs to help guide people to get to ________ park: FROM each direction (north, south, east, west), BY each transportation mode (bike, walk, bus), TO that park. For example, “to guide a cyclist coming from the north to get to _______ park, we’d put a sign here (x).” Let’s work together to identify where to put a sign for:

A BIKE coming to KHUNAMOKWST from the NORTH: ____________
A BIKE coming to KHUNAMOKWST from the SOUTH: ___________
A BIKE coming to KHUNAMOKWST from the EAST: ___________
A BIKE coming to KHUNAMOKWST from the WEST: ___________
A PEDESTRIAN coming to KHUNAMOKWST from the NORTH: ___________
A PEDESTRIAN coming to KHUNAMOKWST from the SOUTH: ___________
(See worksheet/checklist)
Use different colored stickers/dots

Guiding questions/Think about (we’re not talking through these – they’re just prompts if the group needs some help getting going)
- Where would pedestrians/cyclists/transit riders be starting from: residential centers like mariposas, jardines, or cully grove; cultural centers like NAYA, other places people go, like the grocery store or school.
- What are the main travel routes for different modes of transportation? (facilitator add bike, walk, bus stops and routes layers..)
- Where are there already sidewalks? Or, where there are not sidewalks but it feels safe to walk or bike.
- Turning/decision points (intersections) and distances – how far away would a pedestrian be coming from?
- This is a brainstorming session. We’re not specifically designing the signs yet, but there will be an opportunity to do that in the future.

Come back together and show what you worked on. (20 minutes)
Slide tables into the middle, in a circle. Participants walk around the circle to look at all groups’ maps (10 minutes)
- What do you notice?
- What are some common places?
- Where are some good central locations for signs that refer to multiple parks, or for something like a map?

Next steps: (10 minutes)
- Share project timeline

Después de este taller, colectamos toda esta información en un mapa, y la usamos para diseñar un sistema temporal. Hacemos unos señalamientos básicos este verano, y los colocamos por el vecindario. Luego, en el otoño, planeamos actividades para < activar el sistema > - tener caminatas y paseos por bicicleta para observer el sistema y pensar en las maneras de expander y mejorararlo. Hacemos esas actividades en el invierno, y mientras tanto trabajamos juntos para diseñar un sistema más permanente, para ser instalado profesionalmente según las regulaciones de la cuidad. El próximo verano, 2016, el sistema esta completo.
Así, para el próximo paso, tendremos señalamientos temporales. Si usted está interesado en participar en la colocación de los señalamientos, anótese en el registro para indicar que le podemos contactar para esa actividad.

- Materials: contact sheets (x2), clipboards
Appendix 2a: Livable Lents Online Survey – Online Version

Take the Survey

Okay, here is your chance to share with us your thoughts and vision for Lents. The goal of the survey is to get real opinions and thoughts from the Lents neighborhood in order to build a better community. We will publish the results from all the information gathered, providing a handy resource to anyone looking to get involved in Lents. Any personal information will be excluded from results.

The survey should take 4-5 minutes and once completed redirect you to our pledge page, where you have the opportunity to get involved.

Page 1 of 4

Thank you for taking the survey! You can skip any question by pressing “Skip” to the right. You will be asked to plot points on the map to the left, which works like Google Maps.

Question 1
How long have you lived in Lents?

Question 2
Where did you live before moving to Lents?

Question 3
How would you rate your overall experience living in Lents?
1 (worst)
2
3
4
5 (best)

Page 2 of 4

Show us your favorite places--and the places you think need improvement. Click "Add point to map" and use the zoom function to place your point(s).

Question 1:
What is one of your favorite places in your neighborhood?
Tell us what place you picked and what you like about it.

Question 2:
What is another one of your favorite places in your neighborhood? Put a point on the map.
Tell us what place you picked and what you like about it.

Question 3: Where would you like to see changes in the neighborhood? Identify one place you want to see improved on the map. What place did you choose and what can be improved?

Question 4: Where else would you like to see changes in the neighborhood? Pick one more place you’d like to see improved. What place did you choose and what can be improved?

Question 5: Which of these are important for making Lents more livable?

- Environmental health
- Food access
- Affordable housing
- Transportation
- Community space
- Safety
- Economic development
- Community engagement
- Education opportunities
- Renewable energy
- Other

Question 6: What should be included in future development in Lents? (For example, construction, community spaces, new businesses, new housing, or other neighborhood changes?):

Question 7: What steps (if any) should be taken to improve the categories you chose?

Question 8: What are you doing right now that is having a positive impact on your community?

Question 9: Is there anything you’d like to do?

Question 10: Interested in sharing more information and talking to others about these issues? Join your neighbors for a Livable Lents community conversation this Fall. Food will be provided!

- Sign me up!
- No thanks.

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If you would like more information about neighborhood resources or opportunities, please add your contact info here. We will never share your contact information with anyone except those organizations you have indicated you would like more information about.
Demographics

Provide your demographic information so that Livable Lents can know more about the makeup of our participants. This helps make sure that we hear from a diverse array of Lents neighbors!

Age
Gender
Country of origin
Household language

Race or ethnicity Please check all that apply:
_ White
_ Eastern European
_ Asian or Pacific Islander
_ Hispanic or Latino
_ Native American
_ Black or African American
_ Other

Do you rent or own your home?
_ Rent
_ Own
_ Other

Income range
_ Less than 10,000
_ 10,000-24,999
_ 25,000-49,999
_ 50,000-74,999
_ 100,000 or more

Thank you for taking the survey! For more information, visit livablelents.org Questions? Concerns? Contact Izzy Armenta at izzy@greenlents.org
Appendix 2b: Livable Lents Survey - Paper version

We want to hear from you! Livable Lents is working with neighbors to create a thriving community. What changes would you like to see in the neighborhood?

1. How do you feel about the neighborhood?
2. When did you first move to the neighborhood?
3. How long have you lived in this part of town?
4. What are some ongoing issues in the neighborhood?
5. What are some changes you would like to see in the neighborhood?
Questions Concerning Your Community’s Identity & History:

Do you rent or own your home? [rent] (Home)
- Yes
- No
- Prefer not to answer

Damographic Questions (optional):

Household Income:
- Less than $5,000
- $5,000 - $9,999
- $10,000 - $19,999
- $20,000 - $29,999
- $30,000 - $49,999
- $50,000 - $69,999
- $70,000 - $99,999
- $100,000 - $124,999
- $125,000 - $149,999
- $150,000 - $174,999
- $175,000 - $199,999
- $200,000 - $249,999
- $250,000 - $299,999
- $300,000 - $399,999
- $400,000 - $499,999
- $500,000 - $699,999
- $700,000 - $999,999
- $1,000,000 - $1,499,999
- $1,500,000 - $1,999,999
- $2,000,000 - $4,999,999
- $5,000,000 or more

Gender:
- Female
- Male
- Other

Other:

Other:

What kinds of new businesses, new housing, or other changes...

Education Opportunities:
- Community Engagement
- Economic Development
- Safety
- Community Space
- Transportation
- Affordable Housing
- Food Access

Environmental Health

What steps should be taken?

If you would like more information about neighborhood issues or services...
Appendix 3: Community Forum Facilitator’s Guide

Livable Lents Community Forum: Facilitation Plan
Version: October 20, 2015

Date/time: October 21, 2015  6 pm – 8 pm; facilitator trainings at 4 pm and 5 pm
Location: Lents Activity Center  8835 SE Woodstock Blvd

Session Details
Learning Outcomes
- Present the data we have collected using the survey
- Build community connections between organizations and people in Lents

Learning Intentions (by the end of this session participants will be able to...)
- Overview the main take-aways that we have found from the survey (to be pulled from the report outline)
- Overview the current development plans for Lents (ie: Lents 5 Year Action Plan)
- Compare the results of the survey to current development plans for Lents
- Present the amount of community engagement and actions that people have taken as the result of our outreach (pledge) -
  - active - what people are doing
  - willingness to take action - what people would like to do
  - took action - what they did (pledge actions)
- Collect reactions to the data and report, and feedback about challenges and solutions that participants identify, for inclusion in future reports generated by Livable Lents teams.
- Identify action opportunities and invite people to get involved with them

Deliverables (actual things produced during session - eg: plans, materials, etc.)
- Next steps for participants
- Volunteer leads for Livable Lents 2016 team
- Community feedback for incorporating in future reports

Bibliography and Potential Resources
Creating a Training Template - NICE Consulting
1. Introduction - [25 minutes]
   - Have 15 minutes for people to arrive and get settled in
   - Have a sign in table for people who are arriving, include sign in sheet, partner/project information/fliers, and name tags
   - Staff with greeters
   - Invite people to sign in, get food and a name tag, and then find a table to sit at for the evening.
   - Groups of 10 or less per table (8 tables if we have 75 participants)
     - Identify a table for each language, and introduce our translators (who will stay at that table and help) - include signage on these tables in the language.
     - Welcome people in the languages present (2 minutes each - English, Russian, Spanish, Vietnamese)
     - Translators translate at the table
   - Welcome/recognize special guests, organizers, and organizations/partners

Explain Green Lents and the Livable Lents program
   - Who is Green Lents?
   - What is the purpose of the Livable Lents program?
     - To connect Lents community members to their neighbors, local organizations, small businesses, and city and state bureaus, all in the name of creating a more Livable Lents!
   - How does Livable Lents work to achieve its purpose?
     - We conduct outreach to invite you to take our Survey and Pledge and get involved in the community!
   - State the dual purpose for the forum
     - To share and evaluate the information we have gathered about how to create a more Livable Lents - continue the conversation.
     - To connect people to each other, and to opportunities to get involved with shaping the future of Lents.
   - Overview the agenda for the forum

2. Community Mixer/Icebreaker - [15 minutes]
   - Explain that this event is about helping people in the community to connect and to come up with a better understanding of their shared visions for the community. As a result there will be a lot of talking to other people here.
     - Point out norms for this event [post on wall]:
       - Listen to understand
       - Replace advice with curiosity
       - It’s ok to be raggedy
       - Speak from the I - everyone is an expert at their own experience, but not everyone experiences things the same way
       - Assume best intentions
Pair with a participant who you don’t know and have a quick discussion

- Ask each other the following 4 questions: (4 minutes each person, then switch)
  - What are some key issues that Lents is facing?
  - What do you see as the best possible future of Lents?
  - What needs to change for Lents’ future to be closer to what you would like it to be?
  - What are some things you are hoping to get out of this evening’s discussion that can help you move things closer to where you would like them to be?

IF TIME: end the session with a few folks volunteering examples to the larger group of what they want get out of the discussion

3. Present Livable Lents Data - [20 minutes]

- Present outreach methods and information on the demographics engaged.
  - How we did outreach [survey & pledge], and where we did it [geographic area & places we went - homes, events, businesses, etc]
  - Who we talked to
  - Demographics collected
  - Present data collected by the Livable Lents program [Maps]
  - What people said their experience was like?
  - What people saw as potential improvements?
  - What priorities were selected people?
  - What changes were commonly mentioned?
  - What are some popular actions that people are taking?
  - What are some commonly sought after actions that people are looking to take?

- Present the amount of community engagement and actions that people have taken as the result of our outreach (pledge)
  - Active - what people are doing
  - Willingness to take action - what people would like to do
  - Took action - what they did (pledge actions)

- Compare the results of the survey to current development plans for Lents (ie: Lents 5 Year Action Plan)

4. Group Activity - [30 minutes]

- Present the activity and its purpose
- Explain materials and activity for tables
- Go around the room and Introduce table facilitators and translators (if applicable)
Facilitate community discussion activity

- Clarify the purpose of this conversation:
  “To discuss what goals make sense for Lents, and what we can do about it as a community.”

- Hand out “newsletter” and Livability Category Maps
- Provide the table “Gameboard” and markers/crayons people at the tables and encourage
  them to help with collaboratively recording the discussion.

Clarify that this discussion is more of a “brainstorm” to generate ideas, and that we will be
trying to move forward through as many ideas as possible in the time we have.

- Have each table vote to determine the order to discuss the categories in
- Give each person at the table 2 dot stickers and ask them to place them next to the 2
categories they most want to talk about.
- Tally up the dots and determine an order to talk about the categories in
- Most dots to least dots
- Tell people they can check out other tables if they want to look for one that is talking
  about the issue they are passionate about earlier in their discussion.
- Discuss next steps that stand out as a priority for as many categories as possible in the
time available
- Use the Gameboard for the table and the following guiding questions (in Bold Italics) to
  facilitate and record the table discussion.
- Collect reactions to the data presented in the maps, newsletter, and presentations on the
  Flipchart page

What stands out to you about the data we have collected regarding the category we are talking
about?

Identify potential next step goals, write them on the BIG Sticky Notes and post on the
numbered line next to the category icon. Make sure to record the rough date it could be done
by and who might be the best fit for leading the charge (individuals, a community group,
business, or through public agencies)

- What are some things that could be done to improve the condition of this category in
  Lents?
- How long do you think it would it take to do this?
- Is this something that we can do as individuals, a community group, business, or
  through public agencies?

Identify challenges and solutions that might come up while working on that category

- What are some of the challenges that might come up while working on the goals for
  this category?
  Note: If people start getting caught up in talking about problems with doing any goals
  make note of them on the back side of the Goal’s sticky note.
Identify what we can do as a community for as many Goals as possible and write them on sticky notes, one for each step we can take.

- **What are some next steps that people like us could take to achieve this Goal?**

5. **Debrief Group Activity and Clarify Next Steps** - [30 minutes]
   - Facilitators report back from each table (*I min each!!!*)
   - Record report-backs on group notes
   - Have space for reactions to the report-back
   - Encourage people to attend the PDC presentation

   **Lents Town Center Development Projects Open House**
   *Tuesday, October 27*
   *6:00 - 7:30 p.m.*

Activity:
- Have everyone write their main take away on a card with their name (optional) and email address.
- Share your next step with your buddy from earlier

Maybe Next Time: Ask people to find someone in the room that wrote something similar and talk about taking those steps as a community.

Make donation and Green Lents/Livable Lents volunteer ask?

Raffle drawing - End on a high note - happy and empowered
- random drawing from hat full of everyone’s cards
- winners get to pick from prize pile
Appendix 4: ISS-CBPM Team Members, Partners, and Advisors

**ISS-CBPM Team**
Rebecca McLain, Principal Investigator          Kevin Donohue, Research assistant
Sean Gordon, Co-Principal Investigator     Adam Brunelle, Research assistant
Vivek Shandas, Technical advisor          Katie Selin, Research assistant
Karen Guillen-Chapman, Research assistant

**ISS Support**
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Beth Elaine Gilden, Climate Action Collaborative
Jacob Sherman, Sustainable Neighborhoods Initiative
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**Livable Lents Leadership Team**
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Izzy Armenta
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Heidi Trombley

**Livable Lents Volunteers**
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Jumana Aljohni   Jumana Aljohni           Kirk Wynder
Sachi Arakawa     Joseph Slaugther     John Todoroff
Rhesa Napoli       Hamoud Alotaibi  Heather Smith
Emily Rintoul       Alex Voigt          Lydia Moody
Teryn Norris       Allison Curtis       Tami Moody
Deependra Dhungel  Abby Nace           Suzan Hill
Leo Qin         Chelsea Carpenter

**Livable Lents Community Ambassadors**
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Ramin Tokhi
An Huynh

**Living Cully Walks**
Tony DeFalco          Jessica Jazdzewski
Alyssa Kocsis      Calvin Hipolito
Anna Gordon       Pedro Moreno
Maria Jimenez       Jack Greenwood
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Jeff Smith, PDOT
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