FREEWAYS AND FARMS:

VEGGIELUTION AT EMMA PRUSCH FARM PARK AND TAYLOR STREET URBAN FARMS STUDY

A Project Report

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by Ashley Estrada

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The Undersigned Graduate Committee Approves the Project Report Titled

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APPROVED FOR THE DEPARTMENT OF ANTHROPOLOGY

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DocuSigned by:
Jan English-Lueck
9CDDDC475D2942E...

Jan English- Lueck, Ph.D. Department of Anthropology

DocuSigned by:
AJ Faas
90E52F165DAB4EC...

A.J. Faas, Ph.D. Department of Anthropology

DocuSigned by:
Joshua Baur
72A8876456FB44B...

Joshua Baur, Ph.D. Department of Public Health and Recreation

ABSTRACT

FREEWAYS AND FARMS: VEGGIELUTION AT EMMA PRUSCH FARM PARK AND TAYLOR STREET URBAN FARMS STUDY

by Ashley Estrada

This project examines how nearby roadways impact the perspectives of the users and planners of urban farms in order to inform urban transportation planning. I conducted the project on two urban farms: Veggielution at the Emma Prusch Farm Park and the Taylor Street Farm in San Jose, California. By working as an applied anthropologist on an interdisciplinary team, I investigated anthropological themes pertaining to space and place to identify the ways that the respective users and planners of these farms negotiate their use of the farms in relationship to the surrounding roadways. This project utilized structured and participant observations, as well as semi-structured interviews in order to garner the perspectives of the users and planners of these sites. There are two deliverables for this project. The first deliverable includes findings from project research presented in a peer-reviewed publication, with Dr. Joshua Baur, Associate Professor in the Department of Public Health and Recreation at San Jose State University as the primary author, and graduate student Ashley Estrada as the secondary author. This peer reviewed publication is viewable on the website of the funding organization, the Mineta Transportation Institute. The second deliverable consists of a blog post with graduate student Ashley Estrada as the primary author, featured on the San Jose State University, Department of Anthropology website.

ACKNOWLEDGMENTS

I would like to extend my sincere gratitude to my graduate committee, including Dr. Jan English- Lueck for her time, encouragement and patience. She coined my favorite phrase in the second semester of graduate school, “done is better than perfect” which continues to live in my head. I would also like to thank Dr. A.J. Faas, for his friendship and guidance. I have come a long way from the day I ran into his office after the first semester of grad school saying that I was “quitting the program.” Our conversations really helped. My special thanks go to Dr. Joshua Baur, for being my mentor during our research study. I am grateful to my family, especially my son Jayden for their moral support and encouragement that I fulfill my academic dreams. Thanks go to my husband for his humor while he listened to my rants and frustrations during graduate school. I want to thank the applied anthropology graduate cohort of 2020, especially Brett, Kristen and Melanie for providing an outlet for stress. Our happy hours at Flames will always have a special place in my heart. I am grateful for the cooperation and insights from the the volunteers and farm staff at Veggielution and Taylor Street Farm and thank them for being so welcoming and accepting of this project. Lastly, the completion of this undertaking could not have been possible without the participation and assistance of the Mineta Transportation Institute. Their contribution is sincerely appreciated and gratefully acknowledged.

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Chapter 1: Project Framework

This project examines how roadways affect the users and planners of urban farms. I analyze how they construct their respective social spaces within the built environment and identify how they attach meaning to places and activities in these areas. I worked collaboratively with Dr. Joshua Baur, Associate Professor in the Department of Public Health and Recreation at San Jose State University. We focused on the roadways surrounding two different urban farms in San Jose, California in order to garner the narratives of the users and planners at these farms. In my portion of the project, I developed three guiding research questions:

1. How do the components of the roadways, whether the "natural" or "built" environment of the street, affect or not affect the physical and emotional construction of these farms among farm users and planners?
2. How do users and planners of urban farms foster the development of conventionally "natural" and "rural" farm spaces in urban contexts that include traffic and roadway noise?
3. How do different stakeholders view urban farm spaces and what motivational factors do they consider relevant to their view of urban farms?

In order to accomplish this task, I conducted structured observations and participant observations at each farm site location. Structured observations consist of systematic observations at a research location (Schensul and LeCompte 2013), whereas participant observations include researcher involvement in day-to-day activities at a

research location. Following these observations, Baur and I conducted semi- structured interviews with the users and planners of Veggielution at the Emma Prusch Farm Park and the Taylor Street Farm, both two different research sites. This project had an investment by multiple stakeholders, each with their own respective mutual understanding of project deliverables. The main deliverable to this project consists of a peer reviewed publication (Appendix C) submitted to the Mineta Transportation Institute. This masters report includes my own approach and findings as an applied anthropology student working on a research team with my own findings cataloged in a blog post (Appendix D) as a deliverable to the Department of Anthropology at San Jose State University. In certain areas of this report, I discuss Baur's approach informed by positive psychology in order to highlight the main deliverable of our project, the peer reviewed report submitted to MTI.

The Mineta Transportation Institute provided the funding for our project. The Mineta Transportation Institute (MTI) is a research institute located in San Jose, California with a primary focus on increasing mobility for all within the transportation system. MTI accomplishes this mission through research, education, and workforce development (Mineta Transportation Institute 2018). Baur presented a research proposal (Appendix B) to MTI, who signed onto the project as a funder. Overall, Table 1 below represents what we initially expected to learn, based on our complementary interdisciplinary approach upon completion of the project.

Table 1. Expectations of Knowledge Gained by Each Stakeholders Involvement in Project.

Funding Organization: Mineta Transportation Institute	**Assistant Professor at SJSU and Collaborator Joshua Baur**	**Ashley Estrada**
·Add breadth to the growing body of knowledge in transportation research and uphold MTI's core values of accountability, diversity, equality, integrity, and sustainability.	·Discover if and how urban farm users' attitudes and experiences are impacted by nearby roadways.	·Identify ethnographic patterns of daily life and the meanings that people attribute about urban farming spaces.

Much of this report parses how each of us approached the problem, collaborated on research, and created a foundation for future research. We chose two locations associated with different organizations, Veggielution at Emma Prusch Farms and the Taylor Street Farm. We identified how stakeholders viewed the characteristics of their farms in relation to freeway, such as noise and access. The stakeholders included organizational staff, volunteers and garden users and visitors.

Report Format

This report is drafted in four chapters. This first chapter details the project framework, outlining all stakeholders invested in the two deliverables of the project. The project background outlines a brief history of the agricultural background in the Santa Clara Valley, as well as the current environment of San Jose, California. Finally, I review anthropological literature that illustrates intersecting theories of place and space and demonstrates how different stakeholders create cultural meaning relative to those

concepts. As a point of reference, Table 2. provides a clarification of the term and an example of space and place.

Table 2. Space and Place References and Examples

Space	Place
Point of Reference: Socially constructed physical areas, planned and designed. Example: Urban green spaces provide a venue for education activities, such as yoga	Point of Reference: A geographic location and a cultural geographic construct. Example: Veggielution or Taylor Street Farm are places that figure in planners and users cultural geography.

The second chapter explores the methodological approach of the project. I discuss the sampling method, the breakdown of the participant sample, as well as an overview of the community farms. We utilized structured and participant observation, as well as semi-structured interviews in our data collection protocol. As an interdisciplinary team, we used both deductive and inductive approaches based on anthropological and psychological frameworks during our analysis.

The third chapter presents my anthropological results and Baur's findings. With a quick review of concepts that guided my anthropological analysis, I present my findings. The chapter concludes by introducing the connection of the overall findings of both researchers to the project deliverables.

The fourth chapter discusses future implications with a focus on three different avenues. The three avenues of discussion in this chapter are: the community farms, Baur, and the field of applied anthropology. Additionally, I discuss the importance of interdisciplinary teams. Finally, a brief post- script concludes the chapter that brings to light the current event that took place during the project draft: coronavirus disease 2019.

Project Background: Roadways and Urban Farms in San Jose, California

The United Nations Department of Economic and Social Affairs (2018) projects that 68 percent of the world population will reside in urban areas by 2050. Additionally, Parker and colleagues (2018) at the Pew Research Center forecast that 89 percent of the U.S. population would live in urban areas by this time. The sprawl or spreading of a city and suburbs is changing the landscape from agricultural and land use to accommodate this population influx. San Jose, California is considered a geographic place in which citizens—planners and users—construct activities that create associated meanings in particular spaces. Currently, there are 58 counties in the state of California. Santa Clara County is the third most populous with a population of 1,927,852 people (United States Census Bureau 2019).

Santa Clara County encompasses 15 cities over 1,312 square miles (County of Santa Clara 2019). There are 62 miles of expressway and 635 miles of rural and urban roadways maintained by the County (County of Santa Clara 2019). The County of Santa Clara, as well as the broader San Francisco Bay Area of which it is a part, has become one of the country's richest and expensive regions to reside (Duggan 2018). According to the national average, Bay Area residents spend 41 percent of their monthly earnings on housing, compared to the US average of 33 percent (Duggan 2018). According to the U.S. Department of Labor (2020), the federal minimum wage for nonexempt employees is $7.25. However, the relatively high minimum wage in Santa Clara Valley ($15/hour) does not keep up with the cost of living. The high minimum wage makes many families ineligible for the federal Supplemental

Nutrition Assistance Program (SNAP) or food stamps (Duggan 2018). Thus, 196,390 people lived in food-insecure households in 2017 in Santa Clara County (County Health Rankings and Roadmaps 2020).

Food insecurity, or the inability to obtain reliable access to nutritious foods, can result in diabetes, obesity, and other health problems as individuals either skip meals or consume unhealthy food at a lower cost (Seligman et al. 2010). Urban gardens and landscapes that incorporate urban farming are experiments designed to alleviate the number of food insecure households. These spaces provide an opportunity for community engagement as people participate in local food production. According to Greensgrow (2020), urban farming is "growing or producing food in a city or heavily populated town or municipality." Additionally, individual, friends, a nonprofit entity or community organization can all contribute to the creation of urban farms. The historical significance, as well as mild climate in the Santa Clara Valley provides a great environment for urban farms.

The Valley of Heart's Delight Turned Urban Metropolis

The Santa Clara Valley encompasses land adjacent to the San Francisco Bay, ringed by the Diablo hills on the east and the Santa Cruz mountains to the west (County of Santa Clara 2019). In 1840, San Jose was the valley's principal city with approximately 1,000 inhabitants (Borrell 2001). Fruit farming became the main force of occupation in 1870 when horticulturists referred to the soil as the most fertile in the nation. Aside from the rich soil, the mild climate created a great environment for fruit trees to flourish. Dried prunes became a staple with apricots following closely behind.

The Santa Clara Valley became known as the "Valley of Heart's Delight," coined by naturalist John Muir (Silicon Valley Seeds 2017) for the agricultural reputation in the landscape.

The transcontinental railroad of 1869 linked Santa Clara Valley to the rest of the nation, which provided a taste of the valley's delights (Jacobson 2001). The railroad was vital to the economy and raised the value of the land. Delicious fruits were now available to cities as far as New York and Minneapolis. By the late 20th century, however, San Jose had developed a completely different industry and reputation. Currently, San Jose houses approximately 10,000 residents in the downtown core couched between highways 280 and 87 (Handler 2018). What was once an agricultural landscape has now transitioned to an urban metropolis in the Santa Clara Valley.

Downtown San Jose contains vibrant city spaces in the Silicon Valley. Elizabeth Handler (2018) describes vibrant city spaces as "eclectic, interesting and inviting; has strong commercial and residential development; is socially, economically and ethnically diverse; is easily accessible from, a variety of transit; has a healthy mix of land uses; and attracts a variety of talent." In order to reach this vibrancy, high-rise incentives are in place to attract developers in order to accommodate the influx of new residents to the urban landscape of San Jose (Handler 2018). Additionally, transportation is being addressed to accommodate an excess density flow of passengers through a new light rail station that will serve ten times the current passenger levels. It is because of the willingness for urban development, the attention to landscape, and the proximity to transit options that makes Downtown San Jose a desirable place to live (Handler 2018).

The city of San Jose has transitioned from an agricultural legacy to an urban metropolis with over 18 different neighborhoods and a variety of attractions for the entire family from breweries to museums (Visit San Jose 2020). Zoning measures, such as the Urban Agriculture Incentive Zone Contract provide an incentive in the form of a property tax benefit to property owners in Santa Clara Valley if the property owner agrees to keep the property in active agriculture use for at least five years (County of Santa Clara 2019). In what ways is it possible to leverage the agricultural legacy of the city and provide nutritious foods while building community through urban farms?

Theoretical Concepts that Provided Foundation for Project Research

Researchers in the field of applied anthropology use theoretical and conceptual frameworks to shape their research questions, design methodology, and link knowledge with actions (Rylko- Bauer et al. 2006). By focusing on practical approaches and solutions, applied anthropologists are pragmatic in their use of theory. Essentially, theory is a tool to think with, to shape inquiry, but not definitively answer questions. A literature review guides project research with literature that is comparative and documents a similar phenomenon in another area in order to focus on possible similarities and differences to explore (Rylko- Bauer et al. 2006). This comparative method is a powerful tool for spotting similarities and differences that can be explored analytically.

In this project, place as a cultural geographic construct, is identifiable to the community. Veggielution and Taylor Street Farms are both *places.* Space, as a planning

and design construct, references the socially constructed physical area that individuals experience or embody. Day-to-day activities happen in these spaces. Places contain spaces but differ in their social construction. For example, the farm, whether Veggielution or Taylor Street are both areas for urban gardening and education with users and planners with that carry differing experiences. These activities occur in the place. Both space and places are subject to formal official definitions and informal official tinkering.

I explore the following, a) the social construction of place through meaning (Low 2002, 2009, 2014), b) the tension between narratives of space created by different stakeholders (Lefebvre 1991), and c) the use of space to enhance activities that connect people to a certain kind of space, in this case, green space (Farahani and Maller 2018). Each of the authors refer to space and place a bit differently from each other. However, my goal is to translate their ideas to a common framework. By using these theories as a tool to think with, I generated my initial research questions, formulated potential interview questions, and developed analytical codes. Figure 1 illustrates the intersecting theories that informed project research.

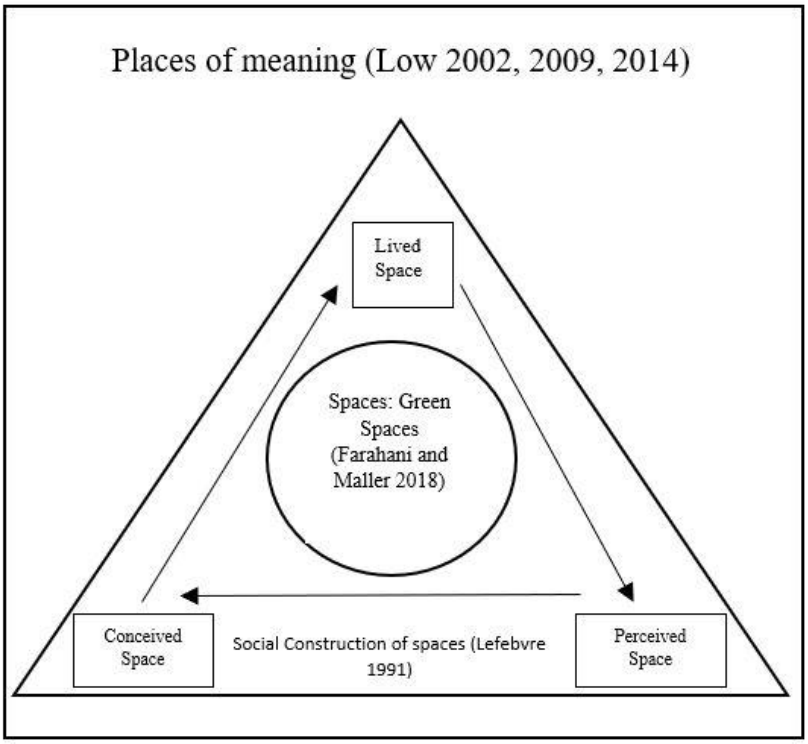

Figure 1. Intersecting Theories That Informed Project Research

Space and Place

A previous research study on community gardens demonstrated the importance of investigating the intersection of space and place in order to understand how meaning embeds within the space (Benton Hite et al. 2017). "Place" is where space and culture meet, which has been a focal point for cultural anthropologists. Lefebvre (1991, 154) asserts that "space is never empty; it always embodies a meaning." Additionally, Low (2009) argues that places are socially constructed by the people that reside in them, with areas or factors for analysis. To spatialize culture, or study culture coupled with the political economy (Low 2014) is to investigate the following factors; the body in the

space or the embodied space, the global and local power relations embedded in the space and the material or built environment in the space (Low 2009). In this project, one of my objectives was to identify the connection or lack of connection participants expressed about the spaces, imbedded in the places themselves, at the two farms. I accomplished this by investigating how the geographic places (Veggielution and Taylor Street Farm) became spaces for meaningful activities. I did this by looking at how farm users experience space through their embodied use of those spaces. Through their activities and the stories, they create meaning associated with those spaces.

The Embodied Space

Low (2009) argues that the physicality of space, in particular places, is important. This notion guided how I created my research questions, observational protocol and my interview questions. Human experience and consciousness take on material and spatial form. We call this concept "embodied space" (Low 2009). The body reacts to emotions, social interactions, and spatial predispositions. People attach meaning through the patterning of everyday movements through these spaces (Low 2014). Embodied space can manifest in an emotional experience that creates meaning. The act of commuting to work illustrates an emotional experience that creates meaning through embodied space. The dominance of cars on urban roadways influences urban planning through the construction of roads, as well as the emotional experience of individuals that share the commute each day. Basmajian (2009) conducted a study to explore the emotional experience of the work commute through the analysis of twelve women. Women described the daily commute as "me time," or a time of reflection. A mother drew on the

memory of listening to the radio in the car with her daughter and reciting the pledge of allegiance each morning. The car itself becomes a space for meaning, an object that is mobile space or an emotional experience created in the space.

This concept informed my data as the individual attributes meaning on an emotional experience by recalling a memory from a specific moment in time. The attachment to an activity, in this case, an emotional experience carries the possibility of being a factor that motivates individuals to visit each farm site. Additionally, the dimensions of Farahani and Maller's (2018) green space framework can inform how emotional experiences about the environment can change the meanings people attribute to those spaces. People navigate physical spaces with their feeling bodies and produce cultural sentiments about spaces. Power, local and global, can shape the experience of those spaces.

Global and Local Power Relations Embedded in the Space

In the field of anthropology, global and local power relations create transnational or translocal spaces in which immigrants "live their lives across borders and maintain their ties to home, even when their countries of origin and settlement are geographically distant" (Low 2009, 32). Individuals, with their own movements and thoughts are the focus of the space. A disruption occurs in the meaning of the space if the historical significance of the space is not adequately represented by individual actors, resulting in a disrupted attachment. Low and colleagues (2002) brought to light the notion of disrupted attachment. This form of meaning centers around a case study of the ways in which the planning and design of Independence National Historical Park in Philadelphia,

Pennsylvania disrupted the cultural attachments of neighboring communities. In retrospect, the initial construction of the area surrounding the park included free, as well as enslaved African Americans. Asian Americans form a symbolic attachment to the Liberty Bell as the struggle for the freedom and rights signified by the bell runs parallel to Vietnam's struggle against the Chinese, French, and Communist governments (Low et al. 2002). In the same vein, the symbolic attachment to the Liberty Bell is also expressed by Jewish Americans as the inscription on the bell "Proclaim liberty throughout all the land," is from the book of Leviticus in the Old Testament (Low et al. 2002). In order to adequately represent a diverse range of cultural groups in the planning and design of the park, Low and colleagues (2002) argue for an understanding of ethnic histories in order to foster the cultural representation of urban parks. These cultural groups felt as though they were not consulted in the planning of the Historical Park which disrupted their attachment to the space. The notion of disrupted place-based meaning informed my project and directed my attention to the motivating factors of participants, as well as whether the impact of roadways affected their experience of the farm. Adding the embodied space and the global and local power relations in the space to the social production of space provides a basis that individuals experience and establish space revealing conflicts and larger issues (Low 2009).

Constructing Space: The Social Production of Space

Henri Lefebvre theorized a three-part dialectic in order to describe people's everyday lived realities (Benton Hite et al. 2017). Lefebvre (1991) examines the role of power in shaping how different actors socially produce spaces. This process is never

transparent. The social construction of the space affected by social or economic factors spatialize culture (Low 2009). Essentially, three components incorporate the social production of space; the perceived, the conceived, and the lived dimension of space. The perceived space encompasses the actual space that actors can either change or reproduce. For example, developers and urban planners change spatial landscapes by building roadways and highways paid by general taxes from all taxpayers in the United States (Dutzik et al. 2015). The conceived dimension of space composed of the vision of the space by decision makers, as well as members of authority such as city council members. This includes maps and plans, and 'visions' that may lead to detailed, legally binding documentation of space and how people with unequal power engage in the making and remaking for the future design of a space. The lived dimension of space pertains to the users of the space and the ways that the individuals utilize the space to challenge or meet the vision of the decision makers and members of authority. For example, urban planners could design community gardens within urban areas to alleviate food insecurity among the vulnerable in the urban population. However, the lived dimension of space revolves around if the community gardens are equitably distributed within the urban environment to reach the vulnerable members of the population.

Below, I have illustrated Lefebvre's (1991) social production of space, Figure 2. In our project, MTI is a stakeholder who, as a research body that informs policy, shapes conceived spaces. The people using the spaces reveal psychological perceptions and motivations, illustrating perceived spaces. My ethnographic data documented lived spaces. Analytically, we had to consider the interplay of all three spaces.

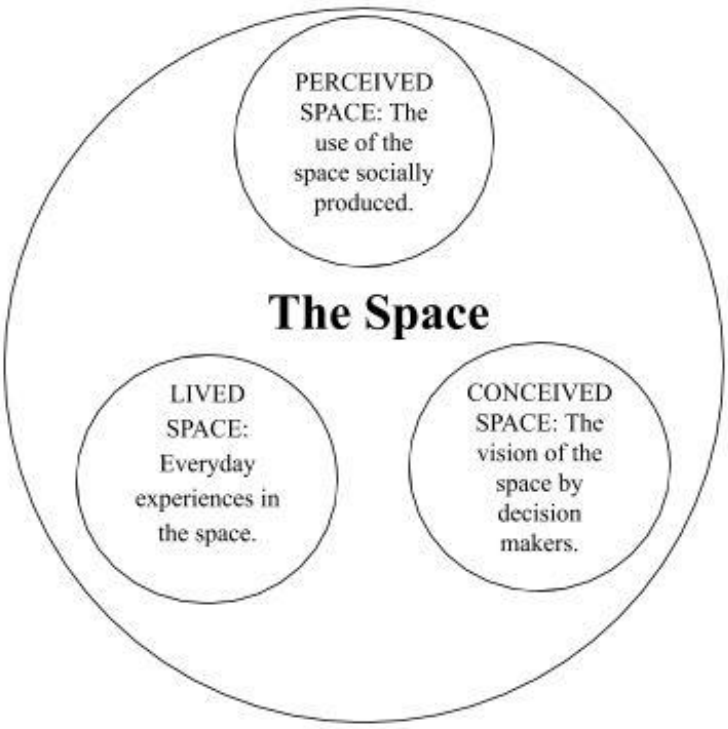

Figure 2. Henri Lefebvre's Social Production of Space.

Lefebvre's framework assesses how individuals construct the meaning of space through social processes that determine why individuals decide to utilize a place. Lefebvre's (1991) three-part dialectic assesses the tension between narratives of space created by different stakeholders, each approaching space with different sorts of cultural power. Farahani and Maller (2018) outline a green space framework that provides a basis for how people create activities and meaning in a particular kind of spaces, green spaces, within the built environment. Low (2002, 2009, 2014) exemplifies how places, and their associated spaces, are given meaning.

The Material or Built Environment

The material or built environment of the space can outline the factors that determine why individuals decide to use a place. In this case, what factors do individuals use when they decide to utilize an urban green space? Farahani and Maller (2018) provide a framework with four domains: characteristics of the green space, perception, and preferences, and the individual characteristics of the user. Summarized in Table 3 below is the four main domains with variables discussed by Farahani and Maller (2018).

Table 3. Farahani and Maller's (2018) Green Space Framework

Characteristics of Green Space	**Perception**	**Preferences**	**Individual Characteristics**
• Biodiversity • Walkability • Size and Type • Safety • Accessibility • Facilities and Programs	• Perceived Accessibility • Perceived Functionality • Perceived Restorativeness • Perceived Safety • Orientation affinity (visitors' value, attitudes to nature)	• Socializing • Recreational • Restoration • Exercise • Children Playing	• Age • Gender • Cultural Background • Place of Residence • Childhood Experience

The dimensions of Farahani and Maller's (2018) green space framework, applied to Veggielution and Taylor Street Farm, can help us ask why users and planners participate at each farm. Both sites provide examples of characteristic green spaces. They both present programs such as volunteer farming opportunities open to the community. The perception of both urban farm sites, with their location being adjacent to freeways, could or could not interfere with the users' perceived restorativeness on the farm. This perception may or may not affect the meaning that the users give to these spaces as all

spaces embodies a meaning (Lefebvre 1991). Additionally, the preference that users or planners have to each farm site could be potentially affected by the individual characteristics of the users of the space. For example, one study revealed that women preferred to use green spaces that were larger and had abundant lighting (Wright Wendel et al. 2012).

In this project, I borrowed and extended literature to guide the foundation of my anthropological research, methodological approach, the framing of my data, and the reasoning behind it. This literature provided an intellectual grounding for my contribution to our collaborative project, and the ideas outlined directly contributed my analytical strategy I employed to make sense of the ethnographic data. I applied intersecting theories of place and space in order to create the research questions to help me pinpoint the physical and emotional construction to spaces. In turn, as I spent more time with the data, I came to understand these theories with new insights.

Chapter 2: Methodological Approach

Baur and I developed a methodological approach that included structured observations, participant observations, and semi- structured interviews. My contribution to this collaborative project involved using ethnographic methods. I applied an iterative approach, sequentially using deductive and inductive approaches. We used deductive theory-driven inquiry to create the original research questions. After time in the field, we used preliminary data to adjust our approaches. Inductive research and analysis methods revealed key themes in the data we collected. Inductive methods were complemented by deductive engagement with key anthropological concepts of space and place. In order to address my research questions about the physical and emotional construction of farm spaces and tensions between features in urban and farm contexts, I developed an ethnographic approach.

Sampling and Recruitment

An interlocuter versed in both community farms acted as our gatekeeper in order to introduce us to the stakeholders at the Emma Prusch Farm Park and Taylor Street Farm. After the introduction, Baur and I scheduled a meeting with the stakeholders at each farm site to discuss project outcomes and the opportunity for collaboration. The community farm sites agreed to participate in our research project as long as we were cognizant of the daily activities that occurred on the farms. Baur and I wanted to interview any farm staff or volunteer that was willing to participate in our study in the time that we were conducting research at the farm sites. We wanted to include any adult (age 18+) perspective in our study, whether farm staff or volunteer that provided a

narrative of farm experience and surrounding roadways. Our sampling rationale permitted us to talk to people who would have different mental models of space. I classified farm staff and planner narratives as more official, allowing us to infer the conceived spatial models. Other users of that space revealed perceived and experiential spatial models. Of course, these categories are not mutually exclusive, but sometimes overlapped.

The Community Farms

Emma Prusch gifted the land that the Emma Prusch Farm Park sits on to the city of San Jose in 1962 for agricultural preservation. Once a working dairy farm consisting of 87 acres, now consists of 47 acres (Emma Prusch Farm Park Foundation 2019). The Emma Prusch Farm Park Foundation established in 1982 supports Emma Prusch's wishes for the space. The Foundation operates in agreement with the City of San Jose, with their own Board of Directors and independent operations within the Farm Park. The Foundation partnered with Veggielution, a non-profit organization within the Farm Park (Emma Prusch Farm Park Foundation 2019). Veggielution is a six-acre community farm and gathering space whose mission is to "provide fresh, and locally grown produce to the community at an affordable cost" (Veggielution 2019).

Taylor Street Farm is a non- profit organization managed by Garden to Table, a San Jose-based organization with a primary focus on building urban communities around sustainable food systems (Ramachandran 2016). Within this one-acre lot, Garden to Table has built large raised beds in order to grow vegetables suitable for San Jose's climate. Suitable vegetables include garlic, radishes, beets, and carrots.

The mission of Taylor Street Farm is to "educate youth, families, and the community on where food comes from and how it is grown" (Garden to Table 2019).

Strategy and Rationale

Between the two community farms, Baur and I conducted fourteen interviews with site users and planners. We employed a student research assistant to include farm users and planners for whom English was not their primary language (though all our interviewees ended up speaking English). The interviews occurred on site (either Veggielution or Taylor Street Farm) during the summer of 2019. Our sample was a hybrid purposive-convenience sample as we only interviewed volunteers or farm staff from the two community farms on the particular day that we were conducting our research. A purposive sample is assumed to be representative of the population, whereas a convenience sample utilizes individuals that are conveniently available and willing to participate in the study (Onwuegbuzie and Collins 2007). The daily activities that occurred at each farm site limited our sample as we were reliant on participants that frequented the urban farms during the Saturday volunteer session only. I worked with farm staff at each site to coordinate schedules for when we could conduct our fieldwork at the farm.

Recruitment

Baur and I made flyers that outlined our project that we distributed to farm staff prior to our arrival at the site. Farm staff placed flyers on buildings within the gardens to detail our research project. When we arrived onto the farm site, Baur and I had a designated private location on the farm site that we that we performed our interviews.

Farm staff would send any available volunteers or farm staff that were at the farm site that day who agreed to participate in the study to our private location.

Final Sample Composition

We interviewed seven participants from each community farm. In total, our sample was primarily female, with nine female participants and five male participants. Our youngest participant was 23 years old, while our oldest participant was 64 years old. Our IRB protocol restricted our interviews to only adult (18+) participants. However, we had a wide array of adult age groups in our study. Additionally, we had a wide array of ethnicities touching three out of the seven continents in the world. Most participants resided in San Jose, with only two participants living outside of the city. The demographics from our sample is below on Table 4.

Table 4. Research Participants from Taylor Street Farm and Veggielution.

Taylor Street	**Veggielution**
Male: 2 participants Female: 5 participants Age Range: 24 years old to 58 years old Reside in: All reside in San Jose	Male: 3 participants Female: 4 participants Age Range: 23-year-old to 64 years old Reside in San Jose: 5 participants Other South Bay area: 2 participants

Ethnography

Ethnography is a research approach employed by anthropologists in order to learn about the social and cultural life of communities (LeCompte and Schensul 2013). The main research tool that ethnographers use is their eyes and ears as they conduct their observations or interviews. By utilizing ethnography, the researcher aims to first discover what people do and why they do it and can then place their inductively

detected patterns in conversation with relevant published research. I employed several data-gathering techniques, including structured observations, participant observations, and semi- structured interviews.

Structured Observations: Only Observing

On a brisk morning, I got in my car and drove to the Emma Prusch Farm Park. As I drove into the parking lot of the farm park, I noticed a fenced garden near the front entrance. Individuals were tending to the garden on the other side of the fence, but I did not want to engage people at this moment as I wanted to save any engagement for my subsequent participant observations. Figure 3 represents a photo of the community garden that I observed at the Emma Prusch Farm Park.

Figure 3. Photo of A Community Garden at the Emma Prusch Farm Park. All Photo Credits are Ashley Estrada.

As I continued my trek through the farm park, I saw signs for “Veggielution.” Multiple signs throughout the parking lot pointed to the entrance of Veggielution. Figure 4 represents a photo of the entrance to Veggielution.

Figure 4. Photo of the Entrance to Veggielution.

Not wanting to engage with anyone yet, I drove out of the farm park and decided to visit Taylor Street Farm. My GPS guided me to take the Taylor Street exit off Highway 87 to a Citibank parking lot. As I parked in the Citibank lot, I noticed a fenced area in the back of the parking lot with a sign across the fence that said, "Taylor Street Farm." Figure 5 represents a photo of the entrance to Taylor Street Farm.

Figure 5. Photo of the Entrance to Taylor Street Farm.

Once I returned home from my initial structured observations, I decided to research the online websites for Veggielution and Taylor Street Farm. I was able to see that both community farms had volunteer opportunities where I could conduct participant observations. I signed up for a volunteer opportunity at Veggielution and notated the volunteer sessions at Taylor Street Farm as the volunteer process was informal and did not require a sign up. From these experiences I could see how planners laid out the space, and how people used it. I was able to use all my embodied senses to hear, smell, and see the sites of the farms as canvases for the behaviors I had yet to observe.

Participant Observation: Volunteer Opportunities

In order to establish rapport with the volunteers and farm staff at the community gardens, I decided to conduct participant observation by volunteering at their community farming events. This opportunity also provided me with the ability to learn about the individuals at the community farms that I could utilize as a reference when Baur and I constructed our semi-structured interview questions that provided the data for our interdisciplinary peer-reviewed publication (Appendix C).

Every Saturday, Veggielution and Taylor Street have volunteer opportunities where individuals can learn gardening techniques and engage with others in the community. I decided that this volunteer opportunity would be a great way to engage with the users and planners of these community farms. My first volunteer experience took place in June of 2019 at Veggielution. On a hot summer day, I volunteered alongside roughly 10 volunteers of varying ages and ethnicities. An event was recently held at the farm park and we had the task of moving picnic tables back to their

respective resting areas. Once this task was complete, farm staff placed us in small groups of three and gave us our own task to complete as a group.

I was on a team with two college students where our task was to organize the farm shed. It was apparent that I was a newbie to volunteering at Veggielution as the students had previously volunteered together on the farm. I followed directions from the two college students and decided to engage in conversation with them. I was primarily focused on their motivation for volunteering. This would be a great starting point and point of reference as we crafted our semi- structured interview questions. Both students were "East Coast transplants" to the Bay Area and had moved to the area for school. I introduced myself as a social science researcher that was partnering with Veggielution to complete a research project. Through my participant observations at Veggielution, I assessed that volunteers at the community farm are wide ranging in age, gender, and ethnicity.

The following Saturday, I made my way over to Taylor Street Farm to volunteer. The volunteer process at Taylor Street Farm was informal compared to Veggielution. I showed up on Saturday morning, opened the gate (unlocked), and showed myself into the garden. Farm staff asked me what I wanted to learn on the farm. I informed them that I was willing to learn anything, and I had little knowledge of gardening. The first hour of my shift, I shoveled wood chips in order to prep the landscape for the following year. Once this was complete, farm staff gave me the choice to pick where I wanted to work in the garden. My grandfather is an avid tomato grower and I felt this would be a good opportunity for me to learn more about tomatoes.

Frank led the tomato group and within minutes of meeting him, I was laughing from his sarcastic personality. After I informed him of my role in the research project that Taylor Street Farm was partnering with, he instantly turned into an interviewer and started asking me questions about my role as a researcher. I joked along with him and informed him of my grandfather's tomato garden. Frank was eager to share with me a trick of cloning tomato plants and creating a second harvest. Through my participant observations at Taylor Street Farm, I was able to assess that the farm staff aimed to provide an open-ended informal educational opportunity for volunteers. Figure 6 represents a photo of my volunteer experience at Taylor Street Farm.

Figure 6: Photo of my Volunteer Experience at Taylor Street Farm. Courtesy of a farm volunteer.

Overall, it was apparent that at Veggielution, the volunteers that I interacted with did not consider themselves as being from the Bay Area as they referred to themselves as "East Coast transplants." Additionally, I was able to experience the importance of education as a focal point at Taylor Street Farm. Taylor Street farm staff guided

volunteers that had the choice of learning outcomes. I was able to call upon this knowledge gained from my participant observations to guide our interview protocol.

Semi- Structured Interviews

Semi- structured interviews close the gap that observations cannot fill by providing the opportunity for researchers to ask open-ended questions with participants, as well as the possibility of follow-up queries (Adams 2015). Baur and I refined our semi- structured interview questions (Appendix A) to be more appropriate to our participants by consulting fieldnotes from my observations. Additionally, I revisited my research questions as a point of reference.

In order to examine the physical and emotional construction of farm spaces in urban contexts, we asked a question regarding why participants chose the particular location they were at to volunteer or farm. We asked the following question, "What made you choose this particular location*?"* In order to gain a better understanding of how volunteers and farm staff construct their spaces within the farm, we asked the following question, "Think about the last time you were allocated space in this garden. Tell me about the process by which you get the space?" This question opened the opportunity for us to ask follow-up questions such as, "What kind of input did you have on the decision?" and "How did you decide what to put in the space?" Additionally, we asked questions to determine how volunteers and farm staff navigate to the site, as well as traffic conditions that would prevent them from going to the site. Questions ranged from, "Will you please talk a little about how you ordinarily get to the site?" and "Are there traffic conditions around the site that sometimes cause you to change your plans?" These

questions concluded my primary anthropological findings as reported in my blog post (Appendix D).

Semi- Structured Research Questions

Baur approached the project from the perspective of urban farm sites as locations for nature-based recreation. The analysis of needs, expectations, and wants of the users at the community farms determine if the impact from the surrounding roadways interfere with the experience of the users of the community farm sites. Our interview questions sought to identify farm user motivations, by asking questions such as, "What is the main reason you are here at the garden today?" The interview questions additionally sought to expand our understanding of the social environment of the community farms. We asked questions such as, "Do you feel like you are part of a community here at the farm?" Additionally, we asked questions regarding expectations, such as, "Can you tell me a bit about what your expectations were, before you started volunteering here?" and "In what ways have your expectations been met?" These questions made up the breadth of the data in our peer- reviewed publication (Appendix C).

Baur and I both brought our own set of guiding questions into our research project. We were able to collaborate and employ existing theoretical frameworks within the conceptual framework of the project. Additionally, we had the flexibility of conducting our own analysis of the data.

Anthropological Analysis: Coding the Data

Anthropologists analyze their data by coding or categorizing based on conceptual frameworks and guiding research questions to support their results (LeCompte and

Schensul 2010). In order to complete this task, I had to revisit my research questions and conceptual framework centered around the intersecting theories of place and space. From there, I deductively chose a set of themes related to place and space to create a codebook. After the completion of the codebook, I thoroughly read each interview transcript and as themes emerged related to my predetermined set of codes, I inductively organized the data within the themes. Depending on the theme, I tracked domains that are key factors within each intersecting concept; place and space. In order to identify patterns within each participant interview, I color coded and notated each theme within each individual transcript.

Tracking Place

I tracked place at the individual level through memories and experiences. I read each individual transcript and color coded each time a respondent would talk about a memory and experience toward the research site. For example, the following narrative illustrates how interlocutors would relate the road noise at each site to a previous memory and experience. When asked, "how do you help yourself ignore the sounds that you hear from the nearby roadways?" Participant Brett responded, "It`s not something that, you know, I don`t let it bother me. It's just like when I lived in Oregon, you know, it would rain, whatever you know, it was like, people don`t let it stop you from doing what you're doing." In this case, Brett is recalling a memory and previous experience from his time in Oregon. Each time a participant would relate the road noise to a previous memory and experience, such as Brett, I would classify it within the place category in my codebook.

Additionally, I tracked placed as a geographic location. To garner narratives about the location of the farms, we asked questions regarding participant transportation to the sites, as well as traffic conditions. When asked, "will you please talk a little about how you ordinarily get to the site?" Kevin stated his normal route to the farm and highlighted that "the freeway access makes it convenient." I analyzed responses as perceived accessibility to farm site due to roadways if participants spoke of a convenient location.

Tracking Space

In order to gauge the activities that connect people to the farm space, we asked specific questions tailored to the use of space. For example, we asked Natsumi, a Taylor Street Farm volunteer, "Do you have any say in where you're going to be working during your time here?" Natsumi responded, "Today, they gave us a few options. There's the seed sewing and then planting beets or watering. So it sounds like there's a lot of different places that we can go and options, whatever we want to do, whatever the kids are interested in." I classified Natsumi's narrative by detailing the 'lived space' at the community farm by providing educational opportunities.

To recap, I deductively organized my codebook with a predetermined set of themes by revisiting my conceptual frameworks and guiding research questions. From there, I inductively read through each participant transcript and organized the data within each theme in my codebook. Alternatively, Baur utilized a coding process by using axial codes to link data together and selective codes to highlight the key insights.

Dr. Baur's Analysis: Coding and Organizing with Data Analysis Software

Baur utilized a deductive and inductive approach to analyze interview transcripts and organized his data partially with NVivo, a qualitative data analysis software. The results from his literature review centered around the field of positive psychology, guided his data analysis with a deductive approach. Additionally, Baur identified new topics within the transcripts by inductively reading each interview in a process called open coding. Open coding is an inductive approach used in order to identify categories or themes from participant responses (Blair 2015). Inductive open coding allows the data to emerge from the transcripts rather than the researcher imposing their own codes.

Following the open coding process, Baur conducted axial coding by looking at deductive and inductive themes to find relationships and patterns (Baur and Estrada 2020). After axial coding, Baur sought core foundational themes in a process called selective coding. These foundational themes were representative as core elements in participant responses. As researchers on a team, Baur and I compared the data we had retrieved through our two complementary analytical approaches. Additionally, we framed our data around different conceptual frameworks within the field of anthropology and positive psychology. Together, we produced a robust interdisciplinary evaluation of the data.

Chapter 3: Research Findings Informed by Anthropology and Positive Psychology

In this chapter, I review my own anthropological findings reported in my blog post (Appendix D) as well as Baur's findings informed by the field of positive psychology, as reported in our peer reviewed publication (Appendix C). Through my anthropological analysis, I evaluated three core results:

1. Participants adapted to the roadway noise by recalling previous memories.
2. The location of the farm sites was accessible due to surrounding roadways.
3. Participants made their spaces meaningful.

Baur and Estrada (2020) concluded that participants reported that noise and odors from nearby roadways had no impact on their experience at the farm. Respondents expressed that traffic sounds were a part of being in the city and did not register while they were working. Additionally, odors from the roadways were not reported as being bothersome.

In order to discuss my anthropological findings, it is imperative to revisit the anthropological toolkit that I used to frame my research. I utilized the intersecting theories of space and place in order to evaluate how individuals construct and attach meaning to their "spaces." In what follows, I review each framework with a written narrative as evidence provided from semi-structured interviews conducted at the farms.

A Review of Space and Place in the Field of Anthropology

In the field of anthropology, space and place are process oriented and person-based (Low 2009). Essentially, place is where space and culture meet. In order to uncover the social realities of a place, anthropologists, spatialize culture or investigate culture and

the political economy through space and place. Factors of investigation include the material or built environment, the global and local power relations within the space, and the embodied space. Adding the embodied space to the social production of space reveals conflict and illuminates larger issues. As an applied anthropologist, my interests lie in how the place, whether Veggielution or Taylor Street farm was spatialized by the factors mentioned above. Table 5 below illustrates a description of each factor and how my data falls into each category. I will succinctly review each factor and analyze each in detail with narrative from participant responses situated within my three core results.

Table 5. Factors and Example from Data

Factor: The Material or Built Environment	**Factor: Global and Local Power Relations**	**Factor: Embodied Space**	**Factor: Embodied Space to the Social Production of Space**
Orienting affinities • Perceived 'Farm community' • Perceived accessibility Designing farm site programs and activities	Navigating • Land lease expiration • Homeless crisis • Urban infrastructure hazards	Recalling previous experiences • Life experience in Georgia • Life experience in Oregon	Creating mission statements linked to teach farming practices

The material or built environment can determine why people utilize a space. Farahani and Maller (2018) discussed four main domains for this determination; characteristics of the green space, green space perception, green space preference, and the individual characteristics of the user. Although we did not inherently ask participants about these domains, participants touched upon them in responses.

Global and local power relations, viewed through places as transnational or translocal spaces, shape the individual. The individual and their experiences define meaning for the space. The meaning of space can disrupt when individuals and cultural groups are not represented in the construction of a place.

Embodied space is where the human experience and consciousness take on material and spatial form (Low 2009). Everyday movements and experiences in life evoke meaning. Daily routines such as a work commute create an emotional experience, grounded in a specific moment in time.

Adding the embodied space to the social production of space gives the space material expression, while factoring in global and collective forces (Low 2009). Conflicts reveal larger issues within the space. People experience as well as constitute space (Low 2009). An evaluation of this concept is through the regulation of space.

Adapting to Road Noise by Recalling Previous Experiences

One core result that I detected through the analysis of space and place, was adapting to road noise by recalling previous experiences. I was able to infer this result by analyzing the narratives from semi- structured interview questions regarding the social environment of the space. This informed my understanding of the movements and everyday experience within the space by the individual user. For example, we asked questions such as “do you feel like you are part of a community here at the farm?” in order to gain a better understanding of the social space. Additionally, we asked questions such as “can you describe the noise of the surrounding roadways” in order to gauge the traffic component of the acoustic environment. The following narratives of Kevin and

Brett exemplify that their activities and emotional connection in the space are more important than the surrounding soundscape of the place.

Kevin: A Community Farm Leader

Kevin, a 64-year-old community farm leader creates meaning through his activities and emotional connection in the space. When asked, "do you feel like you are part of a community at the farm?" Kevin responded, "Yes, because we tend to meet, I mean, yeah, we make associations while we're doing our various volunteer work. We can share our background as we're volunteering." Kevin identified himself as a northern Californian who grew up traveling to areas such as Georgia and the United Kingdom, but "never really lost that connection to Britain." Kevin's narrative was one example of being part of a perceived volunteer community even while his upbringing was decidedly cosmopolitan.

When asked to describe the noise from the surrounding roadways, Kevin related the road noise to an experience from when he lived in Georgia, "I've spent some time in, um, in southeast, in Georgia for example…People tell people told me that, or I'd read that an impending tornado may have the sound of a train coming through…" This narrative holds significance as Kevin is adapting his embodied space to the surrounding roadway noise by recalling a previous experience in Georgia.

Kevin places meaning to the space by describing the social movements in the space as a perceived volunteer community. By relating the road noise to a previous memory, Kevin recalls an experience to evoke meaning. Together, the social movements in the space and the relation of the road noise to a previous memory make up Kevin's

embodied space. This example reaches across interviews from farm leaders to farm volunteers at both research sites.

Brett: A Farm Volunteer at Taylor Street Farm

Brett is a 58-year-old male that creates meaning through his activities as a volunteer at Taylor Street Farm. Brett was familiar with surrounding urban farms, as well as the farm dynamics at both Veggielution and Taylor Street Farm through the years, having previously volunteered at both sites and completing a highly regarded program at a local university in agroecology and sustainable food systems. Having an insider view on the history of Taylor Street Farm, Brett was aware that the farm had navigated and changed leadership. At the start of Brett's volunteering at Taylor Street Farm, the farm was "fighting for survival." However, what drew (and continues to draw) Brett to Taylor Street Farm is a farm leader. Brett described the farm leader, "I look at this woman, she is, she has a regular day job and she's coming here and she's working here two, three hours a day after her work, you know, and how can I not like, I'm like, Oh yeah, I'm going to help you." Additionally, when describing other volunteers at the farm, Brett described them as, "hardworking, dedicated, passionate, kind, and generous." It was not surprising that, when asked if he was part of a community at the farm, Brett responded, "yeah, definitely." Through his description of a farm leader, as well as the farm volunteers, Brett places meaning to the place by detailing his everyday social movements within the space as a perceived farm community.

In order to analyze the traffic impacts on the farm landscape, we asked Brett if and how he helps himself ignore the sounds from the roadways. Brett responded by

saying, “I mean, nothing really. I mean, I just said it's, it is what it is. It's not something that, um, you know, I don't let it bother me. Right. It's just like when I lived in Oregon, you know, it would rain, whatever, you know, it was like, people don't let it stop you from doing what you're doing.” Essentially, like Kevin, Brett related to the roadway noise by sharing a previous experience. In Brett’s narrative, he recalled an experience that evoked meaning, the rain in Oregon, as a relation to the roadway noise. Brett’s social movements at the farm and his experiences make up his embodied space.

Kevin and Brett created meaning through activities in their perceived spaces that were more important than the surrounding soundscape. In both interviews, Kevin and Brett both stated that they were part of a perceived “farm community.” This bond to the perceived “farm community” manifested as a motivating factor as they continued to volunteer at the farm. Ultimately, Kevin and Brett, detailing their social activities within the space, adapted to the roadway noise by recalling a previous experience. Together, the social movements in the space and the recollection of previous experiences represent Kevin and Brett’s embodied space. To explore the theme of place and space further, we asked questions pertaining to why participants chose the location.

Accessible Location Due to Surrounding Roadways

The second core result that I evaluated through the analysis of the intersecting theories of place and space was, accessible location due to surrounding roadways. I was able to infer this result through an analysis of the geographic place. We asked questions relating to the location of the site, such as, “what made you choose this particular location?” The responses illuminated characteristics of the location of the space. I will

explore these questions through the analysis of three different narratives: Priya and Emily and Vanessa.

Priya: A Farm Volunteer at Taylor Street Farm

Priya, a 41-year-old mother who volunteers with her daughter at Taylor Street Farm, valued its location. Priya explained why she chose Taylor Street Farm, saying,

> It's so easily accessible. I just take the freeway, I just take one freeway from my house to come here, like within 10 minutes. Other farms are pretty far from my house and I can like, I can bring my, I brought my sister's family, I brought two of my friend's family here today and they all live pretty close by. So having access through freeways is very, very convenient for them. It's just one exit and then you're here.

Essentially, the surrounding roadways contribute to the perceived accessibility to the farm site within the built environment. This exemplifies an accessible location due to surrounding roadways. This theme was also shared in Emily's narrative.

Emily: A Farm Volunteer at Veggielution

To probe on the location of the farm site, we asked questions about the location of the farm. When asked, "what made you choose Veggielution as a location to come and work at?" Emily responded, "I live about 10 minutes, like a 10-minute drive from here and I just really like what they're doing In this narrative, Emily exemplifies the location of the farm site, as a short commute. Emily elaborated more on the roadways that surround the farm site,

> There's freeways surrounding the place and I think unless you're driving on the freeways around it and even then the speed is so fast, it's like you don't really, it's kind of, yeah, it's almost like it's down in a valley because of the way the road systems move around it. Um, and it's just in such an urban area, it's not something you would expect to find right here in this spot where it is.

The hidden location of the farm in an urban area came as a surprise to Emily, who saw is as essentially a "secret garden." Through an analysis of the built environment, Emily detailed the perceived accessibility of the space due to a short commute and her perception of the space as a "secret garden." These attributes illustrate the built environment of the farms as an accessible location due to surrounding roadways.

Vanessa: A Community Farm Leader

Vanessa is a 50-year-old farm leader that expressed her joyance for the accessible location due to surrounding roadways. When asked, "Is this location convenient for you?" Vanessa responded, "I love that it's right off the freeway. So personally, and when I tell people about it, I say, just take 87 and you're right here. So the fact that we're directly off this exit is really convenient…" Through this narrative, Vanessa exemplifies the space as an accessible location due to the surrounding roadways. These attributes through the narratives of Priya, Emily, and Vanessa, illustrate the built environment of the farms as an accessible location due to surrounding roadways.

Participants Made Their Spaces Meaningful

The third core result that I detected through the analysis of the intersecting theories of space and place is that participants made their spaces meaningful. I was able

to infer this result by analyzing the embodied space of respondents and how they constructed and navigated their social spaces. Adding the physicality of embodied space reveals conflicts and illuminates larger issues. Embodiment highlights the activities people performed. Additionally, to situate this concept, I analyzed each transcript and identified each dimension of space: lived spaces, conceived spaces, and perceived spaces. Frank illustrates this analysis.

Frank: The Vision of the Future

Adding the embodied space, to the social production of space provides meaning and experience to the space. Frank is a 36-year-old farm leader who has been coordinating projects at the community farm for four years. When asked "what's the main reason that you're here at the garden today?" Frank responded,

My mission statement, I can tell you at three in the morning and shake me and wake me up and I would tell you my mission statements. It's simple. I just want to show people how to grow their own food… when I was going to graduate from [an area public university], I worked at a farm up north and a guy had a 30 acre farm up there. And I remember the moment when it changed a lot of things added and led up to it… [the guy] his name was Tom, he said, Frank, I made a mistake…he said, for the last 30 years, I've been growing food for people and I should have been showing people how to grow their own food. Cause that's where it was more powerful because once they know how to do it, they teach five other people. And so I saw the power in that…

Frank discusses an experience that carried a meaning to him within his narrative. The meaning, attached to Frank's everyday movements at the farm space by his mission

statement of teaching people how to grow their own food. The social construction of the space, as well as the embodied space, implies that people create meanings in their spaces. Additionally, an analysis of each dimension of space can illuminate larger issues and tension within the space created by different stakeholders.

As a farm leader at the community farm, Frank sat on the board of directors and informs decisions made at the site. The conceived space, or the vision of the embodied space by decision makers, such as Frank, illuminates Frank's narrative. "We have a lease and so I knew that we had at least three or four years to build this place up….Now I know it's his piece of land and I know there's, there's a time limit, but I knew that we could build a pilot program to where even if we have to move, which we eventually have to." Frank went on to say, "if we wanna start this somewhere else, we can treat this like the pilot program that it is, and we can just change sites. So [the community farm] will live on just somewhere else." Knowing that the lease would eventually expire, Frank navigated his conceived space applying future visions of the farm site. He imagined an education pilot program replicated on different spaces within San Jose.

Through Frank's narrative, we navigate the lived space at the community farm incorporating everyday experiences in the space that illuminate larger issues. The location of the farm site, nestled under a bridge, presents a hazard of urban infrastructure: rodents. Frank shares this unique issue,

> Yeah, the only, little thing about this site that brings a unique issue in terms of how this roadway affects an urban farm is this [bridge] being hollow and because the pipes run underneath it, it's a freeway for Norwegian roof rats... But the

> problem is if you get rid of the families that found the chicken coop now and trapped them and removed them, it doesn't matter ‘cause this is a freeway. It's just going to bring more. So that's been a struggle.

Frank’s nervousness about the rodent issue stems from the rodents being attracted to the chicken coup at the farm. This is an everyday lived experience that through participant observations is a fear to staff as they expertly maintain the chicken coup by encasing it within a metal fence.

The perceived space incorporates the use of the space that is socially produced by actors within the space. In this sense, the actors, built a community farm within an urban landscape. The community farm is influenced by the social movements within the space that illuminate larger complex social issues.

According to participant observations conducted at the community farms with Frank, with limited access to housing, homeless residents utilized the space surrounding the community farms to safely sleep at night. This illuminates a larger complex social issue in the Bay Area such as the housing crisis, income polarization, and the lack of a political will to commit to real solutions has meant steady growth in homeless. According to the National Alliance to End Homelessness (2020) there were approximately 7,254 homeless residents on a given day in San Jose in 2019 (which had a population of 1,021,795 total people).

My part in the project was to use anthropological concepts to complement Baur’s analysis. I investigated the intersecting theories of space and place to analyze my observations and semi- structured interviews. Through my analysis, I detected three core

results: participants adapted to the roadway noise by recalling previous memories, the location of the farm sites was accessible due to surrounding roadways, and participants made their spaces meaningful. Putting the anthropological toolkit away, I would now like to focus on the results from Baur's analysis, informed by the field of positive psychology, highlighted in our peer reviewed publication (Appendix C).

Satisfaction Levels Based on Motivations and Expectations

Baur focused on farms as nature-based recreation and people's expectations and motivations related to this. In general, nature-based recreational participants expressed appreciation for and value their sense of connection to nature through natural features such as bird songs and scenic views. Within this framework, dissatisfaction can be expected to arise when features negatively impact the user's sense of connection to nature. Baur analyzed expectations and motivations of volunteers and farm staff in order to determine whether nearby roadways demonstrated an impact on farm users' experiences, using the assumption that the farm experience represents a type of nature-based experience dependent upon natural features (with which nearby roads are inconsistent). Through his analysis, Baur concluded that participants expressed little or no dissatisfaction to nearby roadways due to motivating factors and expectations at the community urban farms.

Little or No Dissatisfaction Linked to Nearby Roadways

Baur analyzed the narratives by looking at participant responses to questions about the roadway noise. We asked participants questions such as "what are the most common sounds that you hear from nearby roads?" Additionally, "how do you help

yourself ignore the sound(s)?" Baur reached the conclusion that nearby road noises and smells did not interfere with farm volunteer' and staff experiences. Baur proposed that perhaps the roads had no impact because farm users' expectations and motivations to be at the farm were unrelated to a peaceful natural setting. Table 6 represents an array of responses that Baur used for analysis outlined in our peer-reviewed publication (Appendix C):

Table 6. Nearby Roads Do Not Interfere with User Experience.

[describing traffic noise] "Never bothered me too much because I`m born and raised in San Jose. I mean, I`m used to traffic sounds and so it's nice it [referring to making a conscious effort to ignore traffic sounds] wasn't something I had to try to do." -Frank, Community Farm Staff
[describing traffic noise] "Just part of being in the Bay Area- white noise." -Melanie, Veggielution Farm Volunteer
[describing traffic noise] "Just a constant hum and you can kind of tune it out after a little bit, but you have to like, get a little closer to people and talk a little bit louder and you can deal with that." -Cathy, Veggielution Farm Volunteer

Baur concluded that we can potentially understand the lack of relationship between roadway noise and farm experiences by exploring farm user's motivations and expectations for being at the farm. In this sense, expectations and motivations were the variable impacting the perception of road noise.

Motivations

In order to garner perspectives as to why participants were at the farm site, we asked motivational questions. Such as, "what is the main reason you are here at the garden today?" Baur concluded two main results: participants considered themselves as doing something meaningful and connecting to nature. Table 7 represents an array of

responses that Baur used in order to formulate his conclusions outlined in our peer-reviewed publication (Appendix C):

Table 7. Doing Something Meaningful.

"In a lot of ways, it [farming] saved me...from a mediocre life." -Frank, Community Farm Staff
"Working with people, growing the food, getting it out into the hands of the community, teaching people how to do it themselves." -Grace, Community Farm Staff
"We want to get outside and learn something do something...We want to engage...If you notice people out here, they're not looking at their phones, they're talking to each other, they're doing something." -Grace, Community Farm Staff
"People [are] missing this in their life; being connected to land and plants. And so, the expectation is still, hopefully, to get the message out and have more people come and enjoy it [the farm] and build their own passion for it. -Kristin, Taylor Street Farm Volunteer

In addition to the motivating factor of doing something meaningful, Baur also reached the conclusion that motivation arose from participants as they felt a sense of connection to other people and nature. The following, Table 8 and Table 9 represent the narratives that Baur used to formulate his two conclusions outlined in our peer reviewed publication (Appendix C).

Table 8. Sense of Connection to Other People.

"I`m here and I`m giving, sharing that with my daughter- and she loves the chickens. She's connected with them and, you know I think this is the best kind of experience- like, teaching experience- I can give her while also enriching her life. And that means a lot to me."-Priya, Taylor Street Farm Volunteer
"Getting more connected. It's just a sense of community connection through food." -Emily, Veggielution Farm Volunteer
"[My] grandfather had a farm. He had blueberry bushes, bees, [a] persimmon tree orchard...So I'd say nostalgia. Nostalgic." -Ben, Veggielution Farm Volunteer

Table 9. Sense of Connection to Nature.

"I like being outside...and putting my hands in the dirt and connecting with natural cycles." -Cathy, Veggielution Farm Volunteer
"I kind of like to come out here and just...get some outside. Get my hands in the dirt." -Ben, Veggielution Farm Volunteer
"[It's] a great way to also be active outdoors." -Melanie, Veggielution Farm Volunteer

Baur concluded that participants, motivated to volunteer or work at the urban farms by their perception of doing something meaningful and their sense of connection to people and nature. Additionally, Baur argued that the motivations of participants are a key indicator of their expectations of working at the farm.

Expectations

In order to gauge participant expectations at the community urban farms, we asked the following question, "Can you tell me a bit more about what your expectations for this location were before you started volunteering here?" Baur analyzed participant responses to this question in order to conclude two categories of expectations: education and social interaction. The following two tables, Table 10 and Table 11 represent participant expectation responses that Baur utilized, in order to formulate his conclusions outlined in our peer reviewed publication (Appendix C):

Table 10. Expectation to Receive an Educational Experience.

“I`m learning things here and I can do better gardening, whether in my backyard or on my kitchen window. So I'm getting all the knowledge. I think you know, that’s why I like it here.” -Priya, Taylor Street Farm Volunteer
“I knew it was a place where...you could learn a lot.” -Tamara, Community Farm Staff
“[We learn] how theoretical ideas or academic ideas actually are put into practice.” -Kevin, Community Farm Staff
“[I expected] at least one person who had been here for a while to, like, help us guide and show us what to do.” -Jasmine, Veggielution Farm Volunteer

Table 11: Expectation to Receive a Social Interaction.

“I thought maybe they [referring to her children] could come and run around and just look at all the vegetation and plants and participate in whatever the staff would let them participate in.” -Natsumi, Taylor Street Farm Volunteer
“They were involving kids a lot. Again, as a parent, I`m very grateful for how much they involve the kids.” -Priya, Taylor Street Farm Volunteer
“[Referring to work expectations] [working] with groups in a social setting.” -Ben, Veggielution Farm Volunteer
“I love the fact that, like, we all have this special bond.” -Tamara, Community Farm Staff

Throughout his analysis, Baur centered his focus around farms as nature-based recreation based on expectations and motivations. Baur reached the conclusion that nearby road noises and smells did not interfere with farm volunteer’ and staff experiences. Baur proposed that perhaps the roads had no impact because farm users’ expectations and motivations to be at the farm were unrelated to a peaceful natural setting. Participant motivation and expectations at the urban farms impact the relationship between roadway noise and their experience. Participants motivated by doing something meaningful and their sense of connection to other people and nature. Additionally,

participants expected to receive education and social interaction at the urban farm sites. Baur's results discussed and outlined in depth in our peer reviewed publication (Appendix C).

Anthropology and Positive Psychology, Working Together

To bring the results of the overall project full circle, Table 12 provides my results, as an applied anthropologist outlined in my blog post (Appendix D), and Baur's results informed by the field of positive psychology outlined in our peer reviewed publication (Appendix C).

Table 12. Ashley Estrada and Dr. Joshua Baur's Results.

Ashley Estrada	Dr. Joshua Baur
Result: Participants adapted to road noise by recalling previous experiences.	Result: Participants expressed little or no dissatisfaction to nearby roadways.

Result: Accessible location of farm site due to surrounding roadways.	Result: Motivating Factors
	• Doing something meaningful
	• Sense of connection
	  ○ Other people
	  ○ Land

Result: Participants made their spaces meaningful.	Result: Expectations for farm site • Education • Social Interaction

As Baur and I shaped our research around different theoretical frameworks (the field of positive psychology and anthropology) and coded our data using different procedures, we were both in agreement on results outlined in our peer-reviewed publication (Appendix C). Baur and I concluded that participants did not attribute the roadway noise to be bothersome to their experience at the farm sites. Participants motivated by doing something meaningful and their sense of connection to other people

and the land. Additionally, Baur and I concluded that participants expected to receive education and social interaction at the farm site.

Chapter 4: Future Implications

In this chapter, I discuss future implications as an area of research from the conclusions of this project by addressing three different audiences. The audiences that I address are the community farms, future research projects informed by Baur's findings, and the field of applied anthropology. I also highlight the importance of interdisciplinary research teams. A brief postscript touches on the current events taking place during the writing of this project: COVID-19, in order to discuss the impact of the coronavirus pandemic on community building and food production.

The Community Farms

Through my analysis, I determined that participants shared an attraction to community bonding and events that take place at the farms. Additionally, participants described the farm site as a space that holds meaning. This opens up the possibility of replicating the emotional experiences at the farm in other places. If the community farm sites had to relocate or if other community farms wish to open in urban areas, how should community farms create their space? By reviewing the topics that motivated participants to volunteer or be in a leadership role in our study, a framework can assist farm staff in replicating the space. Topics include:

1. Educational opportunities
2. Community bonding
3. Connecting to the land

Additionally, an investigation into the characteristics of the built environment that determine why people utilize the space can inform the framework in order to replicate the space. Characteristics ranged from:

1. The accessibility of the surrounding roadways.
2. The larger social issues in the space.
3. The hazards of urban infrastructure.

As urban planners develop new areas within the urban landscape, these characteristics are an area of exploration. How will these characteristics impinge on the users of future urban community gardens?

Future Research Projects Informed by Baur's Findings

Baur concluded that participants expressed little or no dissatisfaction linked to nearby roadways. Participant motivation and expectations at the urban farms impact the relationship between roadway noise and their experience. Participants motivated by doing something meaningful and their sense of connection to other people and nature. In our peer-reviewed publication (Appendix C), Baur called on a need for additional research on urban farms in order to paint a clearer picture of the social and economic impacts of urban farming.

Baur argues that the results based on his conclusion are not generalizable with the opportunity for additional research that can add to the growing body of knowledge that pertains to urban farming. Additional research can prove fruitful to urban natural resource managers and city planners as the cost and benefits of urban space can capitalize on the presence on vacant land near roadways in urban areas. A cost-benefit analysis conducted

of urban farms on vacant lots can inform stakeholders in public health, ecosystem services, and city planning. The information from the future research could potentially enhance the quality of life for individuals residing in urban areas.

Applied Anthropology

I investigated the intersecting theories of space and place as the cornerstone of my project. Through my analysis, I detected three core results:

1. Participants adapted to the roadway noise by recalling previous experiences.
2. The location of the farm sites was accessible due to surrounding roadways.
3. Participants made their spaces meaningful.

I was able to determine these results by investigating, a) the social construction of place through meaning (Low 2002, 2009, 2014), b) the tension between narratives of space created by different stakeholders (Lefebvre 1991), and c) the use of space to enhance activities that connect people to a certain kind of space, in this case, green space (Farahani and Maller 2018). This provided insights and indicated a fruitful arena in applied anthropology.

As urban expansion continues, urban planners have the challenge of designing spaces that will accommodate growth, but also provide health and wellness. Urban community farms provide a great opportunity to accommodate this challenge. By focusing on the intersecting theories of place and space, the analysis of themes that create experiences and memories in places can create inclusive spaces in urban areas. While theory can inform hypothesis creation strategies and analytical strategies, stakeholders, such as city planners should be open and willing to see patterns that are not predicted by

theory. As I did in this project, an applied anthropologist can contribute both an inductive ethnographic perspective and a deductive framework driven by anthropological theory in order to help uncover these patterns on future research teams.

The Importance of Interdisciplinary Research Teams

The future implications from my anthropological analysis within an interdisciplinary project with Baur can inform three different audiences: the community farms, future research projects informed by Baur's findings, and applied anthropology. By addressing the community farms, exploration can investigate the future of community farm spaces. Future research could potentially enhance the quality of life for residents in urban areas. Additionally, an area of exploration is the intersection of place and space in urban environments.

This project has been unique as Baur and I had the flexibility to explore our research with our own guiding theoretical framework and methodological tools. Baur utilized inductive open coding based on deductive psychological themes. As an applied anthropologist, I contributed both an inductive ethnographic perspective and an anthropological deductive analysis, in which theory informed the analytical process. As a deliverable to the field of applied anthropology, I developed a blog post (Appendix D) with my anthropological results.

Working as an applied anthropologist on an interdisciplinary team, Baur and I utilized our own expertise and relied on each as think tanks and sounding boards as we bounced ideas and patterns off each other. Interdisciplinary research teams can provide effectiveness and uncover patterns overlooked in the research process. Together, both of

our approaches, placed within an anthropological and psychological framework created a robust interdisciplinary evaluation. Our interdisciplinary project encapsulated in a peer-reviewed publication (Appendix C) with Baur as the primary author, and me as the secondary author is a great example of researchers working together utilizing multiple academic disciplines and approaches. We laid out findings and implications from our study and project deliverables so that they can evoke and inspire future interdisciplinary research teams.

Post- Script: COVID-19 Acknowledgement

Baur and I completed our research at the community farm sites during the summer of 2019. I began drafting my master's project report during the spring of 2020. During this time, disaster struck in the form of a global pandemic. COVID-19 swept the world by storm. Medical professionals encouraged individuals to wear face coverings, stay at home, and practice social distancing. Government officials tried to take hold of the situation by issuing stay-at-home orders. The current (2020) Governor of California, Governor Gavin Newsom issued a stay-at-home order for the state of California on March 4th, 2020. This order was open ended with no end date. I felt frightened and worried. This stay-at-home order had turned myself, a once extroverted social butterfly, into an introvert that was untrustworthy of people that I did not know. I questioned my mistrust of people and thought about the social cohesion and community building that was core to the community farms that we conducted our research at. Would they ever be the same?

My fondness for the community farms that we conducted our research at, made me constantly check-in on the farms during this time. Though both farms, forced to shut down to volunteers for a short period, were able to maintain their community building virtually through their Facebook websites. During the farm closure, Taylor Street Farm offered a spring basket giveaway that I participated in. Farm staff compiled a box of assorted vegetable seedlings to plant in your own yard. I received my box and was able to grow fresh vegetables from my backyard.

At the time of writing (summer of 2020), both farms are currently open to a limited number of farm staff and volunteers. Face coverings are mandatory, and the farms seem to be adapting to social distancing suggested guidelines from medical professionals. The current climate, global pandemic and all is a great opportunity for researchers to investigate how COVID-19 has impacted the community and food building functions at urban farms. How will urban farms adapt to these changes?

COVID-19 is beginning to shape the way that individuals navigate their daily lives as staying home and avoiding close contact is strongly encouraged. It is tough to ask people to be near each other during a pandemic, but community building is a key factor that motivated individuals to volunteer on the farm. In order to address this topic, future researchers can conduct a needs assessment at community farm sites in order to collect data and determine how stakeholders can make decisions to protect the safety of farm staff and volunteers, while harnessing the mission statement of community building at the farm. Stakeholders and future researchers can share findings from this research across

urban farms. Community farms across the United States hold the same challenge of creating a safe environment amid a global pandemic.

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Appendix A: Interview Protocol

Introduction

First, thank you for taking time out of your day to speak with us. My name is _____(Josh or Ashley). I am a _____(faculty member or graduate student) at San Jose State University. This is my project partner _____(Josh or Ashley). (SPANISH LANGUAGE VERSION ONLY) - Cynthia Franco, an undergraduate research assistant, is also with us today acting as our translator. As you may be aware, we are conducting this study in partnership with farm leadership to learn more about how nearby roadways affect your experiences here at _____(farm name).

We are here today to learn from you. We will be asking you some questions because your stories and experiences are important to us. We anticipate that with information we develop through this work, leaders at the farm and in the city will be better able to serve you. We also expect that our study results will contribute to education and scholarship.

Before we get started, I want to make sure you had a chance to read the consent notice we provided for you. Did you read it? (Yes/No). Do you have any questions about it or our project?

OK, let's get started with the interview.

Starter question

We would like to start by learning more about your understanding of urban farms. Can you tell me a little bit about what you know about urban farms?

Motivation questions

Thank you, that's great. Now, we would like to learn more about why you are here.
What is the main reason you are here at the garden today?

- Grow food
- Meet up with friends
- Spend time in a natural space
- Because I have to be/Community service

(can ask clarifying question - "Are you here because you want to be or have to be?)

VOLUNTARY, go to next page.

NON-VOLUNTARY, go to page 5

If Respondent is a Voluntary

What made you choose this particular location?

- How did you learn about Veggielution/Taylor Street?
- How did you learn about urban farms and gardens?

Can you tell me a bit about what your expectations were, before you started volunteering here?

- What did you think was going to happen here?
- Did you think you would be working by yourself, or in groups?
- Did you expect there would be people in charge? Or did you anticipate being in charge of yourself?

Now that you have been volunteering, in what ways have your expectations been met?

Is anything different than you thought it would be?

Social Environment

Thank you for your thoughtful answers. Now, I would like to ask you a little about the social environment here and the people that you volunteer with.

Do you feel like you are part of a community here at the farm?

- What words come to mind when you think of the other people working with you here?
    - How do you think about the other volunteers?
        - Are they friends?
    - Who do you usually come to the farm with?
        - Friends? Family?

Think about the last time you were allocated space in this garden. Tell me about the process by which you get space.

- What was the process?
    - What kind of input did you have on the decision?
    - How did you decide what to put in the space?

Traffic Impacts

Thank you. Your answers are really helpful. Now, I would like to ask you some questions about how the cars and roadways nearby affect you while you are working at the farm.

What are the most common sounds you hear from nearby roads?

- Horns?
- Tires/screeching?
- Accidents?
- Constant hum?

Are there some sounds that are more disturbing to you than others?

- How so? Elaborate

How do you help yourself ignore the sound(s)?

- Do you hear the sound(s) all the time while you are here? Do you stop hearing it after you have been on site for some time?
  - What techniques do you use to help ignore the traffic noise?
    - Would you say you are able to tune out?

Are there smells from the nearby roads that impact your time here?

- What are they (Exhaust, burning rubber, other car odors)?
  - In what ways do you notice them affecting you?
  - What techniques do you use to ignore the smell(s)?

Thank you. Your stories are very helpful. Now, we would like to learn about how you get to the farm.

Will you please talk a little bit about how you ordinarily get to the site?

- Public transport
  - If you wanted to get to this site using public transportation, how easy or hard would it be?
- Personal vehicle
  - How is parking at the site?
- Carpool
- Other?

Are there traffic conditions around the site that sometimes cause you to change your plans?

- Come only at certain times of day or week?
- Not come at all?

This is all really helpful. We are nearly done. To conclude, we would like to ask a few basic questions about you. I want to assure you that all information is protected and remains confidential. Basic background information will be reported for the group, not individuals.

Demographics

How long have you been volunteering at _____?

- How many years?
- In a typical week, how many days per week? How many hours per day on average?
- Preferred time of day/day(s) of the week you like to volunteer

How long have you been actively involved in urban farming (gardening?)

For how long have you lived in San Jose?

- Where do you live, if not SJ? How long?

How do you identify your cultural heritage?
European? Latin American? Asian?
How old are you?

Concluding Remarks

Great! That's all the questions we have.

In the few minutes we have left, is there anything you want to mention about your experiences here that we did not ask about? (THIS QUESTION MAY BE SKIPPED IF THERE IS TOO LITTLE TIME REMAINING)

Thank you once again for your help. Results from this project will be provided to farm leadership, in case you are interested.

We hope you enjoy the rest of your day.

If Respondent is a Non-Voluntary

Can you explain why you chose this site?

- What were the choices or options that were available to you to complete your service?
- If you had to fulfill service hours again, is there something about this site that would cause you to choose it again?
    - *ELABORATION* - If you had a friend who was looking for a place to fulfill service, what are some reasons you would recommend this site? Or not recommend it?

Can you tell me a bit about what your expectations were, before you started working here?

- What did you think was going to happen here?
- Did you think you would be working by yourself, or in groups?
- Did you expect there would be people in charge? Or did you anticipate being in charge of yourself?

Now that you have been working here, in what ways have your expectations meet met?

Is anything different than you thought it would be?

Traffic Impacts

Thank you. Your answers are really helpful. Now, I would like to ask you some questions about how the cars and roadways nearby affect you while you are working here at the farm.

What are the most common sounds you hear from nearby roads?

- Horns?
- Tires/screeching?
- Accidents?
- Constant hum?

Are there some sounds that are more disturbing to you than others?

- How so? Elaborate

How do you help yourself ignore the sound(s)?

- Do you hear the sound(s) all the time while you are here? Do you stop hearing it after you have been on site for some time?
    - What techniques do you use to help ignore the traffic noise?
        - Would you say you are able to tune out?

Are there smells from the nearby roads that impact your time here?

- What are they (Exhaust, burning rubber, other car odors)?
    - In what ways do you notice them affecting you?
    - What techniques do you use to ignore the smell(s)?

Thank you. Your stories are very helpful. Now, we would like to learn about how you get to the farm.

Will you please talk a little bit about how you ordinarily get to the site?

- Public transport
  - If you wanted to get to this site using public transportation, how easy or hard would it be?
- Personal vehicle
  - How is parking at the site?
- Carpool
- Other?

This is all really helpful. We are nearly done. To conclude, we would like to ask a few basic questions about you. I want to assure you that all information is protected and remains confidential. Basic background information will be reported for the group, not individuals.

Demographics

How long is your assigned service here?

How long have you lived in San Jose?
Where, if not currently San Jose? For how long?

How do you identify your cultural heritage?
European? Latin American? Asian?

How old are you?

Concluding Remarks

Great! That's all the questions we have.

In the few minutes we have left, is there anything you want to mention about your experiences here that we did not ask about? (THIS QUESTION MAY BE SKIPPED IF THERE IS TOO LITTLE TIME REMAINING)

Thank you once again for your help. Results from this project will be provided to farm leadership, in case you are interested.

We hope you enjoy the rest of your day.

Appendix B: Proposal to MTI

MTI MINETA TRANSPORTATION INSTITUTE

SJSU SAN JOSÉ STATE UNIVERSITY

EMERGING LEADER SEED GRANT PROGRAM

Request for Proposals

The Mineta Transportation Institute's (MTI) Emerging Leader Seed Grant Program seeks to engage and develop leadership capacity among junior faculty. This program supports faculty in the first five years of an academic position who are interested in exploring transportation research problems aligned with MTI's research goals and objectives.

Submittal Deadline: Open until annual funds are exhausted

Contact: [redacted]

All research must focus on improving the mobility of people and goods. Proposals should describe how the research will achieve MTI's goals and objectives and respond to the US DOT's research priorities as stated below.

Goal: Lead the nation in research that identifies safe, reliable transportation solutions that increase mobility of people and goods and strengthen the nation's economy

- ***Objective 1:*** Leverage new technologies and innovative processes to achieve a seamless, multimodal surface transportation system that integrates with other "smart city" investments.
- ***Objective 2:*** Create a safer, more reliable, and more resilient surface transportation system that improves equity through increased access to jobs, housing, services, and other opportunities.
- ***Objective 3:*** Reduce the impact of transportation on climate change by identifying feasible alternative modes and fuels and effective ways to reduce vehicle miles traveled.
- ***Objective 4:*** Extend surface transportation access to people of all abilities and socioeconomic levels, connecting people to where they live, work, and play.
- ***Objective 5:*** Optimize passenger and freight movements to improve mobility of people and goods through development of more accurate data models and advanced application of analytical tools.

Within the broad category of *improving mobility of people and goods*, the US Department of Transportation has identified the following priorities:

- Increase access to opportunities that promote equity in connecting regions and communities, including urban and rural communities;
- Smart cities;
- Innovations to improve multi-modal connections, system integration, and security;

- Assistive technologies for those with physical or cognitive disabilities;
- Data modeling and analytical tools to optimize passenger and freight movements;
- Innovations in multi-modal planning and modeling for high-growth regions;
- Novel (non-traditional or alternative) modes of transport and shared use of infrastructure; and
- Regional planning and setting of transportation priorities.

To comply with federal public access requirements, all data associated with this research (e.g. surveys, datasets generated from the research, video recordings, image files, etc.) must be made available to the public in an open access data repository. Researchers will be required to comply with MTI's Data Management Plan (DMP) or provide an acceptable alternative to the current DMP. If the latter, please describe, at a minimum, the following:

- A high-level description of the types of data that the research team anticipates gathering in the course of conducting research activities, including whether the data should be preserved for long-term access;
- A proposed outline of the standards and machine-readable formats that will be used for the entire scope of research activities;
- A description of any data access policies that govern (and prevent) the disclosure of identities, confidential business information, national security information, etc., and whether public use files may be generated from the data;
- A general discussion of policies for re-use and re-distribution of research data; and
- A high-level description of how, when, and where the research team plans to archive, preserve, and deposit the research data.

PROPOSAL CHECKLIST

A complete proposal includes the following:

1. Request for Seed Grant Application Form
2. A one-page résumé for each participant (students excluded)
3. Budget in excel format

MTI MINETA TRANSPORTATION INSTITUTE

SJSU SAN JOSÉ STATE UNIVERSITY

EMERGING LEADER SEED GRANT PROGRAM
Application Form

Proposed Project Title: Freeways and Farms: Prusch & Taylor Street Urban Farms Study

Contact Person/Principal Investigator

Name:
Joshua Baur

Title:
Asst. Professor

Department/Organization:
Health Science and Recreation

Mailing Address:
[redacted]

Email Address:
[redacted]

Phone Number:
[redacted]

Team Members: (Provide names and affiliations of all individuals who will be funded by this grant. Attach a one-page resume for each person.)

I will recruit a masters student either from our MPH program or from the Environmental Studies department.

Amount Requested: (Not to exceed [redacted])

[redacted]

Describe the project: (What is the topic, how does it align with MTI's Research Emphasis Area noted above, and why is it worth examining as a potential research project? What methodology will you use to explore this topic? What tasks will be done and in what timeframe? Anticipated results? How will your background and experience assist you in conducting your seed grant project? Limit to 1,500 words in scrolling text box below.)

Transporting goods and people, roadways are linchpins of a city's economy. Though critical to a city's economy, freeways and other roadways negatively impact people as well, by creating noise and pollution. Roadways can also adversely impact urban natural resources (Franklin & Fruin, 2017)* including urban farms. Busy roadways close to urban farms generate higher rates of pollution and soil contaminants (Zhao, Li, & Wang, 2011). Impacts of city roadways on urban farms require examination given that urban farms are food sources (Dobernig & Stagl, 2015) and spaces for social interaction and community building (Agnotti, 2015). In addition to biophysical research on traffic impacts on soil and plants, we need to understand social impacts of roadways on urban farmers. This study proposes an exploration of the ways in which freeways and surface roads in San Jose, CA impact urban farmers' attitudes and behaviors. Our objective is to contribute to sustainable city management and social justice efforts by looking at how a growing trend towards urban sustainable farming is impacted by ubiquitous city roadways.

Methods: We will conduct a qualitative study, in which single participant interviews will be conducted with farm volunteers and leaders at Emma Prusch Farm and Taylor Street Farm in San Jose, CA. Using a semi-structured interview protocol, a student research assistant, under the supervision of the PI, will conduct approximately 15 one-hour interviews. Interviews will be digitally recorded and then transcribed using an on-line transcription application (temi.com). Following transcription, the PI and student research assistant will use qualitative data coding software (most likely NVivo) to carry out analysis of significant themes in interviews. Data collection is expected to occur during the SJSU spring 2019 semester. Analysis and results reporting will occur during spring and summer 2019.

Expected Outcomes: At least one peer-reviewed journal manuscript will be submitted for publication. We will report results to decision-makers and stakeholders for both farms to help improve services and experiences for farm volunteers and community members. This project will function as a masters student project, to include a presentation to interested stakeholders, as well as a masters committee. A report of study findings will be prepared for MTI.

Ultimately, in addition to adding to the growing body of knowledge concerning urban farming, this project seeks to support diversity, sustainability, and social justice in San Jose, by helping stakeholders better understand relationships between urban farms and city roadways.

*Source citations available upon request. Limited room prevented inclusion of a reference list

Recipient Responsibilities: At the conclusion of the research, grantee must prepare a written report discussing the results of the work. The report will be peer reviewed, edited, formatted, and then posted on the MTI website. In addition, all grantees must provide the data obtained as part of the funded research to MTI in accordance with MTI's Data Management Plan.

Compliance with MTI's Data Management Plan:

☑ Yes, the research team, under the direction of the Principal Investigator/Co-Investigators, will comply with MTI's Data Management Plan.

☐ The research team, under the direction of the Principal Investigator/Co-Investigators, presents an alternative Data Management Plan (this must be submitted as a separate document and should be limited to two pages)

Appendix C: MTI Project Report

Project 1890 | July 2020

SJSU SAN JOSÉ STATE UNIVERSITY

MTI MINETA TRANSPORTATION INSTITUTE

Freeways and Farms: Veggielution & Taylor Street Urban Farms Study

Joshua Baur, PhD
Ashley Estrada

MINETA TRANSPORTATION INSTITUTE transweb.sjsu.edu

MINETA TRANSPORTATION INSTITUTE

LEAD UNIVERSITY OF

Mineta Consortium for Transportation Mobility

Founded in 1991, the Mineta Transportation Institute (MTI), an organized research and training unit in partnership with the Lucas College and Graduate School of Business at San José State University (SJSU), increases mobility for all by improving the safety, efficiency, accessibility, and convenience of our nation's transportation system. Through research, education, workforce development, and technology transfer, we help create a connected world. MTI leads the four-university Mineta Consortium for Transportation Mobility, a Tier 1 University Transportation Center funded by the U.S. Department of Transportation's Office of the Assistant Secretary for Research and Technology (OST-R), the California Department of Transportation (Caltrans), and by private grants and donations.

MTI's transportation policy work is centered on three primary responsibilities:

Research

MTI works to provide policy-oriented research for all levels of government and the p rivate sector to foster the development of optimum surface transportation systems. Research areas include: bicycle and pedestrian issues; financing public and private sector transportation improvements; intermodal connectivity and integration; safety and security of transportation systems; sustainability of transportation systems; transportation / land use / environment; and transportation planning and policy development. Certified Research Associates conduct the research. Certification requires an advanced degree, generally a Ph.D., a record of academic publications, and professional references. Research projects culminate in a peer-reviewed publication, available on TransWeb, the MTI website (http://transweb.sjsu.edu).

Education

The Institute supports education programs for students seeking a career in the development and operation of surface transportation systems. MTI, through San José State University, offers an AACSB-accredited Master of Science in Transportation Management and graduate certificates in Transportation Management, Transportation Security, and High-Speed Rail Management that serve to prepare the nation's transportation managers for the 21st century. With the active assistance of the California Department of Transportation (Caltrans), MTI delivers its classes over a state-of-the-art videoconference network throughout the state of California and via webcasting beyond, allowing working transportation professionals to pursue an advanced degree regardless of their location. To meet the needs of employers seeking a diverse workforce, MTI's education program promotes enrollment to under-represented groups.

Information and Technology Transfer

MTI utilizes a diverse array of dissemination methods and media to ensure research results reach those responsible for managing change. These methods include publication, seminars, workshops, websites, social media, webinars, and other technology transfer mechanisms. Additionally, MTI promotes the availability of completed research to professional organizations and journals and works to integrate the research findings into the graduate education program. MTI's extensive collection of transportation-related publications is integrated into San José State University's world-class Martin Luther King, Jr. Library.

REPORT 20-24

FREEWAYS AND FARMS: VEGGIELUTION & TAYLOR STREET URBAN FARMS STUDY

Joshua Baur, PhD
Ashley Estrada

July 2020

A publication of
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16. Abstract

This report presents the results of a project conducted by researchers at San Jose State University in partnership with Veggielution and Taylor Street Farm staff, funded by the Mineta Transportation Institute in San Jose, CA. The research team interviewed staff and volunteer farm workers to explore how nearby roadways impact experiences at farm sites. Research on outdoor nature-based recreation consistently identifies peaceful, natural site characteristics as important to a positive outdoor experience. This project sought to identify whether farm user attitudes and experiences would be consistent with these research findings resulting in farm users reporting that nearby roadways negatively impacted their experience. Without exception, nearby roadways did not interfere with interview participant experiences. To better understand these results, the authors asked farm staff and volunteers about their motivations and expectations for working at their farm.

Respondents reported motivations related to doing something meaningful and having a sense of connection to others and to the Earth. Respondent expectations focused on learning and social interaction. In this report, the authors argue that analysis of respondent interviews identifies agreement between expectations and motivations and respondents' experiences at the farm sites as the explanation for the lack of apparent impact from nearby roadways. Farm users' participation was not motivated by seeking a quiet nature experience and they reported no expectation for a quiet nature experience. Therefore, nearby roadways were not regarded as a negative impact among our sample.

The authors suggest that these findings hold implications for management and policy considerations. Urban farms are sources of healthy foods and provide opportunities for social interaction and physical activity, all identified as social determinants of health. Urban farms can also be developed as components of San Jose's urban green infrastructure, which will contribute to mitigating the effects of a heating global climate. All of these impacts of urban farms have been linked to quantifiable socioeconomic benefits that can contribute to the quality of life for San Jose's residents.

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Mineta Transportation Institute
College of Business
San José State University
San José, CA 95192-0219

Tel: (408) 924-7560
Fax: (408) 924-7565
Email: mineta-institute@sjsu.edu

transweb.sjsu.edu

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EXECUTIVE SUMMARY

INTRODUCTION

According to UN predictions, over 89% of the U.S. population will be urban residents by 2050. Freeways, highways, surface streets and other public throughways represent vital arteries for commerce and travel in and around cities. Farming is not routinely associated with cities and busy freeways, yet urban farming has been, and continues to be, a contributor to city resident's health and well-being. As such, city planners will benefit from considering creative space-allocation solutions in cities facing the development pressure of growing city populations. This document reports on a case study that explored the relationship between urban roadways and two urban farms in the San Jose Metropolitan area, specifically focusing on how nearby roadways impact the experiences of urban farm users.

THEORETICAL BACKGROUND

The field of positive psychology emerged in which the theory of self-determination demonstrated empirically supported explanatory power. Self-determination theory has been applied to behavior and participation in a host of activities. According to self-determination theory, motivation to engage in a behavior is driven by a psychological need for autonomy, competence, and relatedness. Autonomy relates to an individual's sense of volition or self-direction to engage in an activity. Competence refers to a psychological need to feel able to navigate within the environment. Finally, relatedness refers to a need to feel socially connected to others.

Motivations to engage in an activity lead to expectations about participation. Expectations are impacted by experience and knowledge about an activity and are typically updated as a person engages, and thus learns more about, an activity. When a person engages in an activity or behavior, their expectations for that behavior are supported or disconfirmed. If alignment occurs between motivation, expectations and activity, a person will be satisfied with the experience. In the case of urban farm users at our study sites, the authors inquired how nearby roadways impact farm users' experiences and how their motivations and expectations are involved.

METHODS

Following a comprehensive review of relevant literature, the researchers completed interviews between mid-July 2019 and early September 2019. The authors used convenience sampling to recruit participants until saturation had occurred (n=14). Interviews were conducted using a semi-structured approach in which a script was used to guide the interview process. A principal focus of the interviews was interviewees' motivations and expectations for working at their respective farm sites.

The study sites for this project were Veggielution (located in Emma Prusch Farm Park) and Taylor Street Farm, both located in San Jose, CA. The authors carried out data analysis by iteratively reading and analyzing interview transcripts using an open-axial-selective coding method to complete data analysis.

RESULTS

With no exceptions, our respondents expressed a lack of concern for nearby roadway noise or odors, which do not appear to negatively impact farm user experiences in urban settings. One respondent said, "Never bothered me too much because I'm born and raised in San Jose." Another said "[road noise is] just part of being in the Bay Area." Respondents in this case study reported that traffic sounds are just part of being in the city and do not even register while they are working. No respondent replied that odors coming from the roadways were bothersome either.

One of the most pervasive themes in responses to the question of motivation was the notion of doing something that feels meaningful. Respondents talked about living a more conscious lifestyle, a lifestyle that emphasizes engagement with others and with natural systems. For our respondents, doing something meaningful was exemplified by making a contribution that benefits others, in ways that included education about growing food and providing healthy food options for distribution to those in need. Meaningfully contributing to the welfare of others and the planet relates to interviewees' powerful interest in feeling connected to others and the planet. They talked about getting to know each other and members of the communities in which the farms are located. Study participants also referred regularly to feeling connection to nature. Respondents discussed their desire for their kids to learn about nature and feel connected to it. They wanted for themselves and their children to feel the dirt on their hands and to experience the growth of life. These motivational themes are evident in interviewee comments give rise to their expectations for working at the farm.

Several categories of expectations were identified in the interview transcripts. First, farm staff and volunteers reported that they expected the experience to be educational. One respondent said, "I'm learning things here and I can do better gardening, whether in my backyard or on my kitchen window." One farm staff respondent said that he enjoyed applying agricultural theory to actual farm work. Social interaction was another expectation salient in responses. This is exemplified by one participant who said, "I love the fact that like, we all have this special bond." Others reported that they were happy that farm events created social opportunities for children and families. Another example of the expectation for social interaction was evident in comments about interacting with diverse others. Respondents talked about how experiences at the farm allowed them to get to know people that they might not otherwise have met.

DISCUSSION

Analysis of the interviews with farm workers (ranging from first time volunteers to experienced farm staff) clearly shows that nearby roadways have little to no impact on the study participants' experiences. However, it is important to note that there may be bias in the study's sample. There may have been volunteers for whom nearby roads did interfere with their farm experience, causing them to leave the sites prior to our interviews. But for those present at the research sites, traffic noise and odors were not a barrier to a positive experience at the site.

The authors suggest that the apparent lack of impact that roads have on study participants

is attributable to the agreement between farm users' motivations, expectations and experiences. Farm staff and volunteers' motivations involved doing something meaningful and feeling connected to others and to natural systems. Interviewees commented often on learning about farming practices and doing something that was personally meaningful. Interviewees were motivated to participate and contribute to the farms that they believed are doing something important for the community. Study participants expressed a motivation to learn how to grow healthy food, help others learn how to grow their own healthy food, and to help youth learn about and appreciate farming and food production. By working together, farm users learn how to provide food for themselves and become engaged with each other, the community, and the natural systems on which we depend. Many commented that being around growth and life was deeply meaningful to them. Farm staff and volunteers valued the opportunity to put their hands in the dirt and feel connected to plants and animals. Farm staff and volunteers never mentioned feeling motivated to be at the farm because of a need for peace and serenity in nature.

Their expectations, consequently, centered on being at the farm to do work (which they find personally meaningful), education about farming and gardening (again, meaningful engagement and conscious participation in the food system), and enjoying opportunities for social interaction. The authors suggest that nearby roadways have little or no negative impact on the sample because our interview participants reported being motivated to be at the farms for reasons other than experiencing a peaceful and quiet nature-based experience. In fact, many respondents indicated that they were glad that the farms were located so close to roadways because it meant that they were easy to access. Study respondents' expectations that resulted from their motivations to work at the farms were equally unrelated to being in a quiet natural area.

MANAGEMENT AND POLICY IMPLICATIONS

This paper posits four dimensions of the research that pertain to the management of urban open spaces for non-industrial agriculture.

1. The authors' review of the literature reveals that scholarship on the social impacts of urban farms is currently scant. Few studies have directly explored how urban farms impact the individuals who work at them and the neighboring communities. The authors encourage public agencies to invest in additional research on this subject to contribute to inclusive and intentional sustainable urban planning. The results of this study are not intended to be generalizable. Study results represent another piece of a large and complex picture of urban sustainable planning.

2. Urban open spaces, especially those that are not ideally suited to other commercial or residential uses (e.g., small patches of land abutting a freeway) could be developed for agricultural uses to produce healthy foods, especially in communities where healthy food options may be limited. Urban farms create economic benefits for those who work at the farms by virtue of savings in food costs. They also create economic opportunities for small scale farming operations that can sell produce at farmer's markets.

3. City residents will benefit from urban planning that intentionally includes ecosystem services. Trends in data suggest that human settlement will grow increasingly urban throughout the 21st century and that cities will likely face complex, interwoven impacts of the global climate chaos. Plans that explicitly include ecosystem services can result in improved community health and economic resiliency.

4. Providing outdoor urban green spaces will contribute to the overall wellness of the publics city planners serve. Engagement in physical activity outdoors provides a host of benefits for participants including better health, more positive emotional states/better mood, increased cognitive function, improved spiritual wellness, and (of particular significance for sustainable management of urban natural resources) a stronger sense of connection to nature. Urban residents with strong pro-environmental attitudes, resulting from feeling connected to nature, are more likely to be supportive of sustainable urban natural resource management and policies. City planners and decision-makers can thus expect readier support for and understanding of sustainable natural resource management in cities when the communities with whom they will partner have developed an understanding and appreciation of how ecosystems function and of their own relationship with ecosystems. The decision to invest in green infrastructure continues to be debated among planners, so additional investigation into the costs and benefits is necessary. This case study provides an additional data point to this continuing discussion.

I. INTRODUCTION

According to the United Nations (UN), in 1950 only about 30% of the planet could be characterized as urban.[1] This figure rose to 55% by 2018, nearly doubling in less than 75 years. North America represents the most urbanized region globally, with 82% of the population residing in urban areas. In the United States, 80.7% of the population lived within urban boundaries in 2018.[2] The UN predicts that over 89% of the U.S. population will be urban residents by 2050 This degree of urbanization places intense pressure on open space in and around cities and creates powerful incentives for city decision-makers to develop urban open spaces for commercial and residential uses that crowd out other uses including open spaces for recreation and non-industrial farming.

The Association of Bay Area Governments projects that the Bay Area population will reach over 9 million people by 2040. The same report estimates an increase of over 822,000 new housing units built in the region by 2040.[3] The already considerable population growth in Santa Clara County over the last 30 years resulted in the loss of 21,171 acres of farm- and rangeland to development. An additional 28,391 acres of the County's farm- and rangeland are currently under intense development pressure.[4] Other regions in California are experiencing similar landscape changes as well. In Los Angeles County, for example, 41,000 acres of land were covered by orange groves in 1950. In 2019, that figure dropped to just 76 acres.[5] In Santa Clara County, open spaces are extremely vulnerable to development and rising land prices as evidenced by nearly 22,000 acres of farmland being converted for developed uses over the past 30 years (more farmland than any other Bay Area county).[6] As urban centers in the Bay Area continue to experience population growth, development pressure on open spaces will surely become increasingly intense. More and more, cities are seeking to maximize use of available space for housing and economic development.[7] Bay Area challenges associated with housing availability and home prices have created a critical need for efficient use of available city space.[8]

While many factors contribute to the intense urbanization in the Bay Area, generally speaking, personal automobiles and abundant roadways are among the biggest contributors to urban expansion.[9] Freeways, highways, surface streets, and other public throughways represent vital arteries for commerce and travel in and around cities. An inventory of public roadways in the city of San Jose reveals that in 2018, there were 3,915 miles of roadway in the city.[10] Nationally, in 2017, transit infrastructure served 326 million Americans and connected 7.6 million commercial entities to each other, suppliers, and customers, resulting in considerable contributions to the economic activity.[11] In 2016, freight trucks accounted for the transportation of the largest percentage of goods moved in the U.S., with an estimated value of $11.2 trillion.

Cities and surrounding regions in Santa Clara would struggle without the network of public roadways that facilitate the movement of goods and people daily. Cities are densely populated landscapes, honey-combed with public roadways and dominated by concrete, asphalt, steel, and semi-permeable or completely non-porous surfaces. These are not environments one readily associates with farming, and yet, urban farming has been and continues to be a contributor to city resident's health and well-being. Urban development means that space for food production and other ecosystem services is limited and creative

allocations of space for uses other than development are becoming increasingly important to consider.

To contribute to this consideration, this document reports on a case study project exploring the relationship between urban roadways and two urban farms in the San Jose, CA metropolitan area: Taylor Street Farm and Veggielution farm. The researchers employed qualitative research methods, interviewing staff and volunteers at the two farms to inquire about how nearby roadways impacted their experiences while working at the farm. Though the authors do not propose any explicit a priori hypotheses, scholarship on outdoor nature-based recreation finds that people who engage in outdoor, nature-based activities commonly identify features related to peaceful natural settings as key contributors to a positive experience.[12 13] The authors explored whether urban farm users would identify a peaceful nature experience as an unmet expectation in their activities at the farms. In other words, the authors sought to answer the question of how nearby roadways impact the experiences of urban farm users. Interview questions were developed from a comprehensive review of literature to develop a theoretical foundation for the work.

II. THEORETICAL FOUNDATION

URBAN FARMS AND GARDENS

Urban farming (defined as the production of crop and livestock goods within city and town limits)[14] has been a part of American cities ever since the 1800s, and recent decades have witnessed a notable rise in urban agricultural sites across the U.S.[15,16] Much of the current movement towards local, urban agriculture can trace its roots to the intense post-WWII urbanization of American cities, followed quickly by the hollowing out of city centers in favor of suburban development during the 1960s and 70s.[17] With the migration of people out of city centers in places like New York, Chicago, and Philadelphia, tracts of vacant space emerged as part of a trend of urban decay and blight. The remaining residents in city centers, typically low-income families and people of color, commonly faced significant challenges accessing healthy food options as markets closed and were replaced with fast food restaurants.[13] In response to economic difficulties and food insecurity, low-income urban communities began developing vacant lots as small-scale garden and farm operations in which community members worked collaboratively to grow and harvest fresh food products in urban agriculture collaboratives.[18]

This trend of using abandoned city spaces for community agriculture is currently continuing nationwide as open spaces in cities, whether by design or by circumstance, are being converted to agriculture uses.[19] A 2013 national study of urban non-industrial farm operations revealed that over one third of the farms included in the study had multiple production spaces (mean = 3.1), 78% of production occurred within city boundaries, and mean farm size was nine acres.[20]

In the past decade, many urban and suburban communities developed urban agricultural sites as part of a growing lifestyle movement in the U.S. centered around making consumer choices that support sustainable practices.[21,22,23] Many communities in the U.S. and internationally identify the values of community gardens and farms in terms of not only healthy food options[24] but also in terms of community social cohesion[25] and public health.[26,27,28]

FARMS AS NATURE-BASED RECREATION

Nationwide, urban agricultural sites provide a host of ecosystem services including food production, energy savings, and nitrogen sequestration with an estimated contribution to the national economy of $33 billion annually.[29] Urban open green spaces provide another valuable ecosystem service in the form of recreation and leisure activities.[30,31] Urban farms and gardens offer outdoor recreation experiences that promote multiple health benefits through physical activity.[32,33,34] Motivations for urban gardeners vary, but scholarship on the subject reveals several consistent factors including food provision, opportunities for social interaction, civic engagement, and learning about biological systems.[35] Studies also indicate that urban gardens are sources of quiet and restorative recreation, in which participants can maintain or improve their cognitive, emotional, and physical wellness.[36,37,38]

Research has found that positive experiences during nature-based recreation contribute to feeling connected to nature,[34 39 40] and that naturalness (i.e., the absence of human presence) has been identified as a key contributor to a positive nature-based experience.[41 42 43] Participant satisfaction with a nature-based recreation experiences is, therefore, routinely linked to the ability of the participant to feel a sense of connection to nature through direct experience of natural features. Natural features associated with a positive experience include hearing nature sounds such as birdsong, the experience of solitude, pleasant fragrances such as blooming flowers, and expansive views.[44 45 46] When people recreate in an area with features inconsistent with the recreationists' expectations of, for example, naturalness or natural features, dissatisfaction with the experience is likely.[47] To better understand how presence of human activity might impact urban nature experiences among urban farmers, therefore, it is useful to explore how expectations, motivations, and satisfaction with an outdoor, nature-based experience are linked.

EXPECTATION AND MOTIVATION

In order to understand how nearby roadways impact farm user experiences, we will look at the relationship between expectations, motivation, and experience satisfaction (Figure 1). Satisfaction with an experience results from the agreement between expectations and actual experience.[48] In cases where expectations disagree with actual experience, one can expect that the activity participant will be dissatisfied to a greater or lesser degree depending upon the level of disagreement.[49]

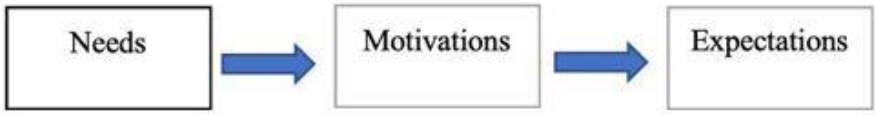

Figure 1. Motivations and Expectations for Experience

Scholars have explored the roots and impacts of motivation to develop an understanding of human behavior.[50] Early research on human behavior identified basic biological needs as drivers of behavior.[51 52] Theories of human behavior continued to develop with the work of scholars such as Allport[53], Murray[54], and Maslow[55] who advanced understanding of behavior from biological needs to specific psychological needs. Development of the scholarship on motivation and behavior continued with a shift occurring in response to the humanistic revolution of the mid 20th century.[48] The field of positive psychology emerged in which the theory of self-determination demonstrated empirically supported explanatory capacity.

Self-determination theory[56] has been applied to behavior and participation in a host of activities including education[57] and exercise.[58] According to Deci and Ryan[54], self-determination theory helps explain how "innate psychological needs for competence, relatedness, and autonomy concern the deep structure of the human psyche, for they refer to innate and life-span tendencies toward achieving effectiveness, connectedness, and coherence" (229). Self-determination theory argues that an individual's motivation to engage in a behavior is driven by need for autonomy, competence, and relatedness. With respect to autonomy, people need to feel that the origin of the impulse to engage in an activity resides within them, rather than originating in some external force. In other

words, people have a psychological need to be in control of their action, to be volitional agents. Competence is the psychological need to effectively navigate and negotiate surrounding environmental influences. Individuals possess a powerful psychological need to feel capable in relation to the external environment. Finally, relatedness results from a psychological need for connection and relatedness to others in a social context.

As people develop motivation to engage in an activity or behavior, they develop expectations for the outcomes of the behavior.[59] Expectations are impacted by experience and knowledge about an activity and are typically updated and altered by an individual based upon first-hand experience with an activity.[60] Expectations have both a cognitive and an affective dimension.[61] As individuals learn more about an activity or behavior (either directly or indirectly), their expectations are inevitably amended as new information supports or refutes pre-learning expectations. Similarly, an affective dimension exists in which a person's hopes or fears for an activity may be more or less activated by experience (or lack of experience). When a person engages in an activity or behavior, their expectations for that behavior are either supported or disconfirmed. If alignment occurs between motivation, expectations and experience with an activity, a person will be satisfied with the experience.[62]

III. METHODS

PARTICIPANTS

Volunteers and staff members from both research site locations who took part in field interviews were assigned pseudonyms (Table 1).

Table 1. Study Participants (with Pseudonyms)

Farm	Pseudonym, Sex, Age	Status (Staff/Volunteer) & Duration
Taylor Street	Brett, Male, 58	Volunteer (1 year)
Taylor Street	Kristin, Female, 24	Staff (4 months)
Taylor Street	Vanessa, Female, 50	Staff (6 months)
Taylor Street	Frank, Male, 36	Staff (3 years)
Taylor Street	Tamara, Female, 44	Staff (1.5 years)
Taylor Street	Natsumi, Female, 41	Volunteer (1 week)
Taylor Street	Priya, Female, 41	Volunteer (3 months)
Veggielution	Kevin, Male, 64	Staff (3 months)
Veggielution	Jasmine, Female, 23	Volunteer (4 years)
Veggielution	Melanie, Female, 29	Volunteer (1 day)
Veggielution	Cathy, Female, 31	Volunteer (2 weeks)
Veggielution	David, Male, 25	Volunteer (1 day)
Veggielution	Ben, Male, 30	Volunteer (5 years)
Veggielution	Emily, Female, 38	Volunteer (1 month)

RESEARCH PROCESS

The idea for this project originated in conversations between the principal investigator (PI) and a San Jose State University (SJSU) administrator with contacts at Taylor Street Farm. The SJSU administrator also suggested Veggielution as another urban farm partner for the study. The PI contacted representatives from Taylor Street Farm and Veggielution initially by email to propose a discussion about the project. Subsequent emails and phone calls helped the PI develop the project in partnership with collaborators from both farm sites.

PI and a graduate student co-principal investigator (Co-PI) conducted a review of pertinent literature while engaging with research project partners at both sites. Study and interview protocols were developed by PI, Co-PI, and Co-PI's graduate advisor (Dr. Jan English-Lueck) using extant literature and study goals. Development of study protocols and the literature review continued until summer 2019, when fieldwork commenced.

Prior to interviews, Co-PI and an undergraduate research assistant (Cynthia Franco, hereafter "RA") recruited by Co-PI and Dr. English-Lueck conducted observations at each site in order to understand formal and informal activities that occur there. During June 2019, prior to the commencement of interviews, Co-PI spent several days volunteering at both research sites and observed and recorded volunteer activities in field notes. Co-

PI's observation process helped her develop relationships with farm staff and volunteers, which facilitated subsequent interview data collection. Also, during June 2019, prior to interviews taking place, PI emailed bilingual announcements (Spanish and English) concerning the project to farm staff partners to distribute to their volunteers and post at the farm sites (Appendix A). All bilingual materials were reviewed by the SJSU Institutional Review Board (IRB) for accuracy of translations. In the event authors interviewed a Spanish-only speaker, RA (a fluent Spanish speaker) would act as a translator.

Interviews began in mid-July 2019 and continued until early September 2019. The interview process was slowed somewhat due to Co-PI working in another job that required her to be out of town regularly throughout the summer weekends. Interviews were conducted at Veggielution on July 27, August 10, and September 7, 2019. Interviews were conducted at Taylor Street farm on August 5, 10, and 24, 2019. Interviews were conducted until saturation occurred, at which point interviews were not revealing new information concerning impacts of nearby roadways.[63] Interviews occurred during normal farm operating hours (generally between 10am and 2pm on Saturday), during times when volunteers were working at the sites. Interviews were conducted using a semi-structured approach in which a script (Appendix B) was used to guide the interview process, but flexibility was designed into the interview protocol to allow exploration of any new and informative topics that interview participants might introduce.[64]

All members of the research team (PI, Co-PI, RA) were present for all interviews. PI conducted the interviews and Co-PI assisted (Co-PI asked follow-up questions in addition to asking questions when interview participants introduced a new topic). RA observed interviews, took notes, and was welcome to ask questions. Convenience sampling was used to select interviews participants. At both sites, farm staff approached volunteers during regular volunteer hours and invited them to be interviewed. All volunteers who were invited to be interviewed agreed. All interview participants were English speakers. Farm staff interviewees had previously agreed during project development to be interviewed. We sampled a mixture of staff and volunteers across the two study sites. We wanted to capture the attitudes and perceptions of all users of the urban farms, paid and volunteer, since all users are exposed to nearby roadways.

Interviewees were asked to read an informed consent document prior to commencing any interview activities. After an interviewee read the informed consent document, PI asked the interviewee if they had any questions. PI informed the interviewee that the interview would be recorded using a digital recorder and asked if the interviewee agreed to be recorded. All interviewees agreed to be recorded. Interviews lasted approximately an hour each. At Veggielution, interviews were conducted under a shaded arbor, using a folding table and chairs the research team furnished. At Taylor Street farm, interviews were conducted in a shaded area using picnic tables that were already present at the site. The research team offered a bottle of water to each participant.

All research activities were reviewed and approved by the SJSU IRB, Protocol #S19102.

LOCATION

Veggielution and Taylor Street Farms are located in San Jose, in the Santa Clara Valley of central California. A metropolitan statistical area,[65] San Jose's 2018 population estimate is slightly above 1 million people with about 35% of the population reported as Asian, 32% Hispanic/Latino, 26% White non-Hispanic, 3% Black/African American.[66] With an unemployment rate lower than the national average, San Jose is home to industries including professional and business services, manufacturing, education, and health services.[67] The city experiences an average annual high temperature of 71 F, low of 50 F and average annual rainfall of about fifteen inches.[68]

Veggielution at Emma Prusch Farm Park

Founded in 2008 by SJSU graduate students, Veggielution Community Farm occupies two acres within the Emma Prusch Farm Park (Figures 2 and 3). The farm is located in San Jose's Mayfair neighborhood, home to historically low-income and minority families. The farm seeks to create civic and social engagement through farming and education. In 2013, 2,600 volunteers donated approximately 21,000 hours and harvested over 56,000 pounds of fresh produce.[69]

Figure 2. Emma Prusch Farm Park, San Jose, CA

Figure 3. Veggielution Farm, within Emma Prusch Farm Park

Taylor Street Farm

The PI obtained a brief history of Taylor Street Farm through an email exchange with one of the farm's leadership team members.

Taylor Street Farm was founded in 2013 when the organization Garden to Table (https://gardentotable.org/) installed 2,500 square feet of raised beds on a previously vacant lot. Taylor Street Farm is a one-acre urban educational farm located in downtown San Jose (Figure 4). The staff at Taylor Street like to think of it as an oasis in the heart of Silicon Valley. Farm staff believe in the power of growing your own food and having access to healthy food. Taylor Street Farm educates youth, families, and the community on where food comes from and how it is grown. Every week, almost 100 volunteers of all ages come to the farm to participate in their programs.[70]

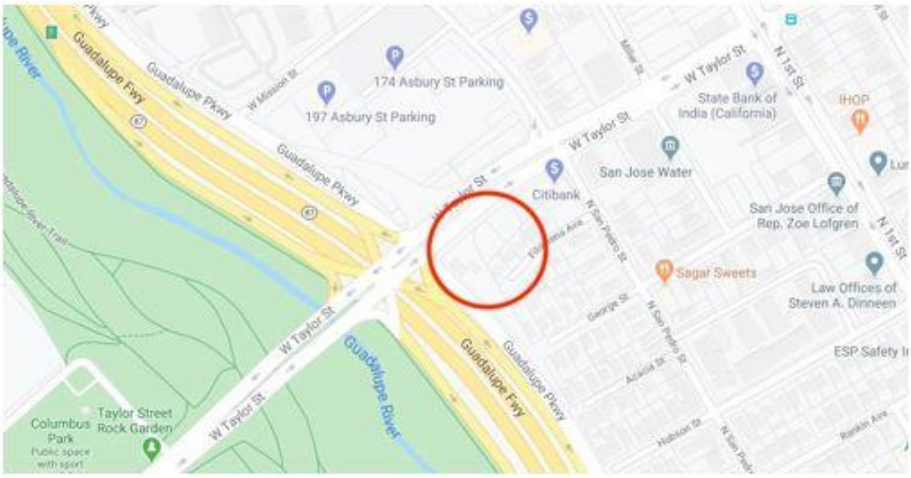

Figure 4. Taylor Street Farm, San Jose, CA

DATA ANALYSIS

Following field work and data collection, transcripts were analyzed using customary qualitative data analysis procedures.[62 71] Co-PI used a transcription app called Temi (temi.com) to assist with transcription of recordings. Co-PI transcribed interviews starting in July and ending in September 2019, cross-referencing transcripts with Co-PI's interview notes. Following completion of all transcriptions, PI and Co-PI began coding and data analysis. The qualitative data analysis software NVivo contributed to data analysis.

The researchers employed a combined deductive and inductive approach in data analysis. While no a priori hypotheses were proposed, the authors used the results of the literature review as a framework to guide data analysis. Data analysis also involved identifying new topics that emerged in the interviews which were not components of the original literature review-derived analysis framework. PI and Co-PI iteratively read and analyzed interview transcripts using an open-axial-selective coding method to complete data analysis.[7] During open coding, the researchers attempted to identify categories of prevalent responses in the participants' statements. For example, if a respondent said "I like working here because I can get my hands dirty," the researchers might apply an open code such as "enjoyment from physical labor in nature."

Following the open coding process, the researchers conducted axial coding. During axial coding, the researchers analyzed open codes looking for links, relationships, and patterns in the open codes. For example, the researchers might examine numerous open codes that relate to working in the dirt and argue that the open codes share a common element having to do with personal engagement with the earth and natural processes.

The final stage of the coding process involved creating selective codes. At the selective coding

stage, the researchers sought one or two core, foundational themes from the axial codes as a representation of the core thematic elements in the participant responses. For example, if a researcher developed the axial codes that indicate engagement with the earth and natural processes as a prevalent motivation, then the resulting selective code (i.e., pattern evident in the axial codes) could arguably be characterized as "connection to the Earth."

IV. RESULTS

IMPACTS OF NEARBY ROADWAYS

Without exception, our respondents expressed little or no concern or dissatisfaction resulting from a disparity between actual and expected experiences at the farm sites. In particular, nearby roadway noise and odors were found to have little to no impact on farm users (Table 2). This section presents the results of the interviews, including responses to inquiries about the most common road sounds respondents heard, whether some sounds were more disturbing than others, whether they used any techniques to help ignore road sounds, and whether respondents noticed any odors from nearby roadways that impacted them.

Table 2. Sample of Study Participant Responses about Roadway Impacts

Nearby roads do not interfere with user experience	[describing traffic noise] Never bothered me too much because I'm born and raised in San Jose. I mean, I'm used to traffic sounds and so it's nice it [referring to making a conscious effort to ignore traffic sounds] wasn't something I had to try to do. —Frank, Taylor Street Farm staff
	[describing traffic noise] "Just part of being in the Bay Area—white noise." —Melanie, Veggielution volunteer
	[describing traffic noise] "Just a constant hum and you can kind of tune it out after a little bit, but you have to, like, get a little closer to people and talk a little bit louder and you can deal with that." —Cathy, Veggielution volunteer

Brett (Taylor Street Farm volunteer) did not identify any particular sounds that were impacting him in any special way. He described the sounds as just traffic noise, admitting "Of course, it would be nicer if there was no traffic noise or... no airplane noise or whatever. Um, that would be great." Though Brett indicated no traffic noise would be ideal, he said that he was glad to have the farm located where it was because its location was accessible. Brett further indicated that the road noise registered to him as a constant hum and it did not bother him. Frank (Taylor Street Farm staff) described the traffic noise as Brett did: essentially as white noise. Frank commented that what was more bothersome than the traffic noise was the sound of airplanes passing overhead. Taylor Street Farm lies in the flight path of Mineta San Jose International Airport, so planes fly overhead regularly. Frank indicated that, occasionally, horns honking, or tires screeching was somewhat bothersome, but he went on to say that traffic noise "never bothered me too much because I'm born and raised in San Jose. I mean, I'm used to traffic sounds and so it [referring to making a conscious effort to ignore traffic sounds] wasn't something I had to try to do." Clearly Frank is relating that the nearby roadways do not appreciably impact his experience while working at the farm.

Melanie (Veggielution volunteer) reported a response to traffic noise similar to Frank's and Brett's. She said that the sound is "just part of being in the Bay—white noise."

Given that our interview occurred on Melanie's first day volunteering, she was not able to comment on any strategies that she uses to ignore sounds, but she did say that she thought she might need to develop strategies to ignore honking. Melanie did not identify any odors coming from the roadways that impacted her. Cathy (Veggielution volunteer) reported that the sound from the roadways was just a constant loud hum, and that no sounds were especially impactful. She explained, "you can kind of tune it out after a little bit, but you do have to like get a little closer to people and talk a little bit louder and you can deal with that." In fact, Cathy commented that the sounds of the peacocks that call Veggielution home were more persistent and irritating than the roads: "The peacocks and even the roosters, they just—apropos of nothing—would start screaming." Though respondents did not report that traffic noises substantially impacted their experiences at the farms, some did comment on trying to manage the sounds by imagining they are something else.

Emily (Veggielution volunteer) commented that the traffic sounds are a constant white noise, so she tries to "convince [herself] it's the ocean." David (Veggielution volunteer), who was at the farm for the first time, reported that he simply tries to focus on his work, rather than the road noise. David said, "in doing work, there's like shovel noises and, like, you're trying to focus on doing your task. So that does sort of tune it out a little bit as well." Neither David nor Emily reported that there were any odors from the roads that impacted them while working at the farm. Generally, interview respondents' comments were similar to Vanessa's (Taylor Street Farm staff), when she replied, "I don't even pay attention to it [referring to road noise]. I didn't even hear it. Um, cause it's just this sort of constant hum … I don't have any techniques … because I'm thinking about something else. So … it doesn't cause concern." Deliberate psychological techniques to process road impacts were not commonly reported but did represent a discernable relationship in the data that otherwise reflects little relationship between roadways and farm user experiences.

Interestingly, several interviewees reported gratitude for their farm's proximity to roadways. For example, Kevin (Veggielution staff) said that the "freeway access is … convenient." Emily (Veggielution volunteer) reported that her drive to the site was only 10 minutes. Brett (Taylor Street Farm volunteer) said, "It's very convenient cause … it's very close [to his neighborhood in San Jose]. That's my community." Kristin (Taylor Street Farm volunteer) also said, "because the freeway is accessible for me and it's right off the freeway in one regard, that's actually really helpful cause it is easier to get here." And Vanessa (Taylor Street Farm staff) said, "I love that it's right off the freeway.... When I tell people about it, I say, 'just take 87 and you're right here.' So, the fact that we're directly off this exit is really convenient." Interviewees, rather than identifying nearby roadways as negatives, describe satisfaction that roadways are close by.

This report argues that the lack of an apparent relationship between the experience of working on these farms and the presence of nearby roadways can be largely attributed to study participants' motivations and expectations for working at their respective study sites. First, the authors will discuss participant motivations.

MOTIVATIONS

Interview participants were asked to think about their primary motivations for coming to the farm site on the day we conducted interviews. Respondents were asked the following question: "We would like to learn more about why you are here. What is the main reason you are here at the garden today?" Several examples of reasons were included in the scripted follow-up questions in the event that an interviewee was having difficulty answering the question. These examples included growing food, spending time with friends, and spending time in a natural space. Analysis of interview transcripts suggests two foundational themes in respondents' motivation statements.

Doing Something Meaningful

One of the most pervasive themes in responses to the question of motivation was the notion of doing something that feels meaningful (Table 3).

Table 3. Sample of Comments about Doing Something Meaningful as Motivation

Meaningfulness	In a lot of ways, it [farming] saved me … from a mediocre life. —Frank, Taylor Street Farm staff
	Working with people, growing the food, getting it out into the hands of community, teaching people how to do it themselves. —Vanessa, Taylor Street Farm staff
	We want to get outside and learn something and do something.… We want to engage.… If you notice people out here, they're not looking at their phones, they're talking to each other, they're doing *something.* —Vanessa, Taylor Street Farm staff
	People [are] missing this in their life; being connected to land and plants. And so, the expectation is still, hopefully, to get the message out and have more people come and enjoy it [the farm] and build their own passion for it. —Kristin, Taylor Street Farm volunteer

Vanessa (Taylor Street Farm staff) expresses this well when she replied to the question by saying that her main reason for being at the farm was "working with people, growing the food, getting it out into the hands of community, teaching people how to do it themselves." For Vanessa, the effort and experience of growing food, helping others to grow food, and distributing food is part of living a more conscious lifestyle—a lifestyle that emphasizes engagement with others and the natural systems on which humans depend. Melanie (Veggielution volunteer) echoes Vanessa's sentiments, explaining that her reason for being at the farm involved feeling more connected and "not … just, you know, kind of … binge eat, eat mindlessly, you know. It's the same as, like,… farmers who slaughter their own chickens are more … appreciative and respectful." Kristin (Taylor Street Farm volunteer) shared a similar sentiment. When asked her about why she was volunteering, she replied that she thinks

> People [are] missing this in their life; being connected to land and plants. And so, the expectation is still, hopefully, to get the message out and have more people come and enjoy it [the farm] and build their own passion for it.

She went on to say that she was impressed and surprised at how much volunteers and staff deeply cared about what they are doing at Taylor Street Farm, saying, "I think people genuinely care. And I think that that's different. I'm not quite used to that."

Interview participants also related ideas about a particular type of meaningfulness: making a contribution. Frank (Taylor Street Farm staff) said that he wants to "show people how to grow their own food." He elaborates on this feeling of making a contribution by relating a story to the interviewers about a conversation he had with a volunteer:

> I have a lot of experience in education, so I always like to show people that [referring to methods of growing food] and when we were walking back to the farm house, his name was [Alan], he said, '[Frank], I made a mistake.' I was like, 'Oh, what'd you leave the water on, or something?' But he said, 'no, for the last 30 years … I've been growing food for people and I should have been showing people how to grow their own food. Cause that's where it was more powerful because once they know how to do it, they teach five other people.' And so I saw the power in that and I just didn't want to be out alone, you know, on a farm by myself.... My heart was actually going towards actually showing this to people.

For Frank, the act of learning about agriculture with the intent of teaching others how to grow their own food—to help others to be able to care for themselves and enjoy the benefits of healthy food options—fulfills his desire to use his energy and efforts for the benefit of others. In other words, the farm allows him to contribute to the welfare of others, thereby living a meaningful life. Frank said, "In a lot of ways, it [farming] *saved me … from a mediocre life.*[1]" Tamara (Taylor Street Farm staff) expresses a similarly strong interest in contributing when she said, "You want to go to a place where you can make a difference. … And this place needed people, it needed assistance, it needed infrastructure, and so it was a really good fit." Tamara, like Frank, does not just express an interest in contributing to the health and wellness of the farm staff and volunteers, she takes action.

Priya, a volunteer at Taylor Street Farm, echoes the sense of making a contribution when she says, "It's all interconnected, right? Like I give you something, you give me [something] in return. That's such a nice feeling to go home with." Priya's comment suggests that she possesses an underlying belief in the value of mutually reinforcing contributions between people and the planet. Emily (Veggielution volunteer) puts it very succinctly when she says, "[Working at the farm] really appeals to me cause … I can kind of give back." Vanessa (Taylor Street Farm staff) said:

> We want to get outside and learn something and do something. We don't want to sit inside and look at the wall. We want to engage. We, if you notice people out here, they're not looking at their phones, they're talking to each other, they're doing something.

In addition to being motivated by living with a sense of meaning, the researchers identified a second primary motivation category they titled sense of connection.

[1] Emphasis added by authors

Sense of Connection

Connection to Other People

Table 4. Sample of Comments about Connecting to Other People

Connection to other people	I'm here and I'm giving, sharing that with my daughter—and she loves the chickens. She's connected with them and, you know, I think this is the best kind of experience—like, teaching experience—I can give her while also enriching her life. And that means a lot to me. —Priya, Taylor Street Farm volunteer
	Getting more connected. It's just a sense of community connection through food. —Emily, Veggielution volunteer
	[My] grandfather had farm. He had blueberry bushes, bees, [a] persimmon tree orchard.… So, I'd say nostalgia. Nostalgic. —Ben, Veggielution volunteer

Scholarly literature identifies the sense of connection generated by urban gardening and farming as powerful and desirable.[7] Interviewees in our study reported a similarly strong interest in feeling connected to others and the planet (Table 4). Priya (Taylor Street Farm volunteer) said "I feel very relaxed. I feel very happy when I'm here and I'm giving, sharing that with my daughter—and she loves the chickens. She's connected with them and, you know, I think this is the best kind of experience—like, teaching experience—I can give her while also enriching her life. And that means a lot to me." Priya values the connection her daughter is developing with nature (the chickens), and additionally identifies that her mood is positive ("relaxed," and "happy") in the same sentiment. She sees her daughter making connections to the natural world while simultaneously sharing experiences with her daughter that strengthen their connection. Emily (Veggielution volunteer) also said that she liked "getting more connected. It's just a sense of community connection through food." Similarly, when the interviewers asked Kevin (Veggielution staff) a question about the social environment at the farm ("Do you feel like you are part of a community here at the farm?"), he replied by describing Veggielution as "a community around food, which I think is, like, a really … good way to get to know people.… I appreciate that.… I think food, like, connects us to stories a lot, and so it's a good way to connect with each other." These comments clearly highlight a desire for engaged connection among the respondents.

Vanessa (Taylor Street Farm staff), like Kevin, identified connectivity to others as a strong motivator for people who work at the farm. Vanessa said, "I guess we're just driven to engage—engage with the world, engage with each other." Jasmine (Taylor Street farm volunteer) said simply that one of her motivations for volunteering was "meeting people." When Jasmine talks about "volunteers that have been here for a long time or people who've just, like, somehow connected to the farm through different people," she refers to being surprised at the social connections that exist at Taylor Street Farm. It can be inferred from Jasmine's comment that she is pleasantly surprised by the sense of connection farm staff and volunteers feel. This suggests to the researchers that Jasmine's experiences of developing connections with others through other social activities did not feel sufficiently successful to her. Jasmine's comment suggests that she is, as a result, happy with the prospect of creating connections

with others through the farm, as was Melanie (Veggielution volunteer), who reported that one of the main reasons she was at the farm was to "meet a lot of fun people." Interviewees consistently identified how highly valued feeling connected through social interaction is.

This sense of connection also has an interesting generational component, though this was mentioned only by some respondents. Typically expressed in reference to ancestors who had a farm or engaged in farming activities in the past, these respondents reported feeling connected to a prior generation. For several of our interview participants, working on the farm today makes them feel more aware of connected to their history and family. For Frank (Taylor Street Farm staff), engaging in farm activities made him feel connected to a grandfather he never met ("No, no. He died a long time ago before I was born"). Frank said, "My mother's father grew up during the Great Depression and they had a depression garden. They survived … from their garden and, you know, hunting. And I kind of wanted to plant some of those varieties he used to grow. It was kind of like a way to speak to him. He's long gone now.… So, it was a way to have that kind of relationship." Ben (Veggielution volunteer) related to us that his "grandfather had farm. He had blueberry bushes, bees, [a] persimmon tree orchard. My grandfather had his own farm. So, I'd say nostalgia. Nostalgic." Ben's reference to "nostalgia" can be interpreted as a connection to a loved one through the activity of farming. For Jasmine, her connection to another generation was to her childhood self. Jasmine said that "I think, like, as a kid too,… we would have, like, field trips to a farm sometimes.… I was like, 'farming and gardening is fun.'" Here, Jasmine expresses a sense of connection to her childhood self by consciously connecting her adult experience at the farm to a pleasing memory of her childhood experience on a farm. Melanie (Veggielution volunteer) expresses intergenerational connection to her still-living parents when she envisions learning more about gardening and plants to help her connect with her parents. Melanie said that "my parents, uh, they have a backyard that is full of trees and, you know, vegetables and … I really have no idea what they're doing back there.… Every time they asked me to help, I just feel a little lost. And … they're also very … particular about, you know, how to do things." We can reasonably conclude, therefore that Melanie sees her volunteer work at Veggielution as a way to engage and connect with her parents in an activity that is strongly meaningful to them ("they're also very … particular about, you know, how to do things"). Feeling motivated by desire for connection went beyond the human social realm.

Connection to Nature

Feeling connected to nature was another dimension of connection that respondents identified as motivating their work at the farm (Table 5).

Table 5. Sample of Comments about Connecting to Nature

Connection to nature	I like being outside … and putting my hands in the dirt and connecting with natural cycles. —Cathy, Veggielution volunteer
	I kind of like to come out here and just … get some outside. Get my hands in the dirt. —Ben, Veggielution volunteer
	[It's] a great way to also be active outdoors. —Melanie, Veggielution Farm volunteer

Emily (Veggielution volunteer) talked about getting "back to the land," and Kristin (Taylor Street Farm volunteer) said that it was "fun just to plant something and watch it grow." Kristin would later say that she felt "people [are] missing this in their life; being connected to animals and plants." We can reasonably conclude, therefore, that for Kristin and Emily, connection to the Earth is a strong motivator for their farm volunteering. Similarly, Cathy (Veggielution volunteer) said:

> I like being outside … and putting my hands in the dirt and connecting with natural cycles. And in my day to day life, I don't really have an opportunity to do that. So, I feel like … I can take this time and really just sort of reconnect with the earth and how we live.

Cathy, being an urban dweller (as all the farm workers participating were), cannot spend as much time in contact with nature as she desires so she values the opportunity the farm provides. David (Veggielution volunteer) echoes this sentiment by saying, "I like gardening at home, but I'm in an apartment now so it's really hard to do that. So … this seems like a neat opportunity to have the space to do, like, farming and gardening." Natsumi (Taylor Street Farm volunteer) also expressed to the researchers that she was motivated to get her children outside when she said that she wanted to have her kids get outside and be exposed to nature and natural systems "instead of keeping them cooped in the house."

Likewise, Priya (Taylor Street Farm volunteer) was motivated to be at the farm to "[get her] hands dirty, working with the earth." Ben (Veggielution farm volunteer) said, "I have an office job Monday through Friday, so I kind of like to come out here and just … get some outside [time]. Get my hands in the dirt." Vanessa (Taylor Street Farm staff) expressed a similar motivation when she reported to the interviewers that she "just [loves] being around growing things." Melanie (Veggielution volunteer) said that she believed that volunteering at the farm was "a great way to also be active outdoors" and that working on the farm helped her feel more "appreciative and respectful" of plants and animals that people consume. Jasmine (Veggielution farm volunteer) commented that working outdoors and being physical on the farm "makes [her] a lot happier of a person" because the work is "calming and, like, satisfying." The authors argue that the motivations identified in interviewee comments give rise to their expectations for working at a farm (Figure 1). To learn more about interviewee expectations, the researchers asked respondents the following question: Can you tell me a bit more about what your expectations for this location were before you started volunteering here? Responses concerning their expectations fell into two categories, discussed further below.

EXPECTATIONS

Education

Table 6. Sample of Comments about Education

Learning	No, I thought learning too. Cause I figured whoever was doing the guiding would be experienced and know what they're doing. —Natsumi, Taylor Street Farm volunteer
	I'm learning things here and I can do better gardening, whether in my backyard or on my kitchen window. So I'm getting all the knowledge. I think, you know, that's why I like it here. —Priya, Taylor Street Farm volunteer
	I knew it was a place where … you could learn a lot. —Tamara, Taylor Street Farm staff
	[We learn] how theoretical ideas or academic ideas actually are put into practice. —Kevin, Veggielution Farm staff
	[I expected] at least one person who had been here for a while to, like, help us guide and show us what to do. —Jasmine, Veggielution Farm volunteer

Respondents consistently identified education as a primary expectation (Table 6). For example, responding to the question, "Did you think that you'd be learning while you were here or that you'd be just helping to basically do physical labor," Natsumi (Taylor Street Farm volunteer) said: "No, I thought learning too. Cause I figured whoever was doing the guiding would be experienced and know what they're doing." Natsumi also said "I thought we would be given instruction and we would be given assignments." In her reply, Natsumi makes no mention of an expectation of a quiet, peaceful nature experience. Like other respondents, she did not come to the farm expecting her experience to be quiet and peaceful.

Many of the respondents indicated reviewing online information and seeing that education was a part of the farm's mission. Tamara (Taylor Street Farm staff) said "from the Facebook page, I knew that the focus of this farm was really on education." She went on to add "So, I knew it was a place where … you could learn a lot, but I don't think I had a lot of expectations given that there wasn't, um, a lot out there about the farm." Kevin (Veggielution staff) also identified learning about other cultures and the ways in which other cultures grow and prepare food. Kevin also said that working at the farm presents the opportunity to learn "how theoretical ideas or academic ideas actually are put into practice." Practice/practical skills and learning were similarly emphasized by participants, describing expectations that were task oriented. Jasmine (Veggielution volunteer) said that she came "prepared to, like, be directed to a specific task and then, within that, like, I knew I would … have, like, choice of, like, oh, take breaks whenever you need it." David (Veggielution volunteer) offered a similar expectation when he said, "I can dig, I can use a shovel," elaborating further that though he could physically accomplish the task assigned, he needed farm staff to help him "[know] what to do with the shovel, what … tasks need to be done, when they need to be done." David, therefore, came to the farm ready to complete tasks and expected supervision so he could direct his efforts profitably. Similarly, Jasmine (Veggielution volunteer) reported that she expected "at least one person who had been here for a while to, like, help guide us and show us what to do" as a way for volunteers to know what tasks they need to accomplish and to help them learn.

Learning and task accomplishment can occur individually or in a group dynamic. Kevin pointed out that "field crew[s] would work together and they would work as a group, working on one process or another process or one activity." Priya (Taylor Street Farm volunteer) expresses this dimension of education nicely when she said:

> Here we are learning, like, … the first time I was here I learned about how to choose a fertilizer depending on what plant you're growing. And they have a great lesson. If you haven't heard it, you should take that lesson … they have the whole concept there for how to choose a fertilizer. So I'm learning things here and I can do better gardening, whether in my backyard or on my kitchen window. So I'm getting all the knowledge. I think, you know, that's why I like it here.

Priya and Kevin's comments are representative of the responses to this question in that they identify a powerful valuation of learning by doing. Volunteers and staff alike at our partner sites expressed a strong expectation of education and learning from one another.

Social Interaction

Table 7. Sample of Responses about Social Interaction

Social Interaction	I thought maybe they [referring to her children] could come and run around and just look at all the vegetation and plants and participate in whatever the staff would let them participate in. —Natsumi, Taylor Street Farm volunteer
	They were involving kids a lot. Again, as a parent, … I'm very grateful for how much they involve the kids. —Priya, Taylor Street Farm volunteer
	[Referring to work expectations] [working] with groups in a social setting. —Ben, Veggielution volunteer
	I love the fact that, like, we all have this special bond. —Tamara, Taylor Street Farm staff

Respondents at both Veggielution and Taylor Street Farm consistently mentioned family activities and being in a social setting as some of their primary expectations (Table 7). Both sites actively encourage kids and family to volunteer. Veggielution, for example, has a Youth Garden program, which seeks volunteers to help "families in our Youth Garden explore the garden, learning about healthy lifestyle choices, and discovering the exciting processes of the natural world." (http://veggielution.org/youth-garden-volunteering) Taylor Street Farm hosts family-centric events in which "hands-on garden education help[s] young children (ages 4–10) nourish their curiosity, improve cooperative learning and listening skills, enhance their senses, become stewards of the environment, eat more fruits and vegetables, and increase physical activity" (http://www.taylorstfarm.org/events.html). Natsumi (Taylor Street Farm volunteer) said,

> I thought maybe they [referring to her children] could come and run around and just look at all the vegetation and plants and participate in whatever the staff would let them participate in. I wasn't too sure how they … worked everything and … if the regular volunteer hours were kid-friendly. But it seems like they are.

Thus, working alongside their children and helping their children learn about farming and

food was important to respondents.

Priya (Taylor Street Farm volunteer) reported that "when I came and, you know, I saw how grateful they (referring to farm staff) were and, you know, they were involving kids a lot. Again, as a parent, … I'm very grateful for how much they involve the kids." She went on to say "they (Taylor Street Farm staff) had activities that they (the kids) could do." Natsumi (Taylor Street Farm volunteer) was very happy to see that so many children were involved in farm activities because she wants her kids to learn about farming and food production. She said "I first came to the family day, … when we brought the kids and we saw all the other kids. That was fun." Natsumi went on to say "I didn't expect to see so many families here. I didn't know that they would have different stations for the kids to participate in like salsa making, planting lettuce, and whatever else they were doing." In these responses, the researchers see parents expressing appreciation for the activities that staff developed for their children so that kids were actively involved in the farming activities alongside their parents.

Socializing and social interaction is another major theme in the interviews; respondents worked at the farm with the expectation of working in groups and meeting other volunteers and staff. Ben (Veggielution volunteer) remarked that he anticipated meeting people and working "with groups in a social setting." Tamara (Taylor Street Farm staff) said that "now we have a really strong group of volunteers and a lot of folks come out from the community," suggesting that social interaction is a priority for the farm staff. The researchers also asked Tamara to talk about the sense of community at Taylor Street Farm, and her reply clearly highlights the value farm staff place on social interaction and bonding: "We … really attract a diverse … group of folks and it's probably people that we wouldn't otherwise meet or become friends with or get to know. And I love the fact that like, we all have this special bond." Respondents express a clear expectation for building bonds with other volunteers and with staff.

Interest in socializing and social connection is also evident in Cathy and David's comments, volunteers at Veggielution Farm. David, with whom we spoke on his first day at Veggielution, commented, "maybe I will make some friends and there'll be a larger community, but … I have to see … what happens with that." Though David does not express an emphatic interest in making friends here ("*maybe* I will make some friends…"), he clearly anticipates that socializing and relationships will be part of the environment at the farm. Similarly, Cathy, who had volunteered at Veggielution for some time but left the area for several years and was reconnecting with Veggielution following her return to San Jose, remarked that "You know [with] repeated exposure, you get to know people. So, there was certainly some of that last time.… I just haven't been back long enough to really build those relationships again." Clearly, Cathy enjoyed social connections with other volunteers and staff at Veggielution and was interested in making new connections.

V. DISCUSSION

This study examines how nearby roadways impact farmers (staff and volunteers) at two San Jose, CA urban farms. The researchers were interested in how the outcomes from this study compare to prior research into the elements contributing to satisfying nature-based outdoor experiences. According to prior research, participants in outdoor recreation activities routinely seek peaceful nature locations. A peaceful natural setting, therefore, would seem to be central to a positive outdoor experience.[38] Other desirable elements commonly identified with a satisfying outdoor experience include absence of human activity,[7] peace and quiet,[75] presence of wildlife[76] and water features.[77] Based on the body of research reviewed for this study, the researchers anticipated that interview participants might identify nearby roadways as negatively impacting their farm experiences. However, our respondents did not report any substantial impact from nearby roadways.

NEARBY ROADWAYS HAVE NEGLIGIBLE IMPACTS ON URBAN FARMING EXPERIENCES

For many outdoor recreationists, being away from traffic and other city noises are among their primary expectations when engaged in outdoor recreation.[72] For the recreational volunteer farmers and farm staff in this study, however, this was not the case. Priya (Taylor Street Farm volunteer) perfectly exemplifies the absence of this expectation when she said,

> I wasn't coming in expecting it to be quieter or anything. You know, occasionally when we are talking here, we have to talk a little louder to dominate [over] the noises around us. But … there wasn't a point where I felt it's too noisy."

Our analysis of the interviews with farm workers and volunteers makes clear that nearby roadways have little to no impact on the participants. We asked interview participants about what sounds they heard from the nearby roadways, whether any sounds were more disturbing than others, and whether interviewees employed any techniques to help ignore the sounds. Without exception, interviewees reported that nearby road sounds did not negatively impact their experiences at either site. Mostly, respondents described the sounds of roads as a constant hum—just white noise. They expressed no concerns or frustration with the road noise, with the exception of having to occasionally talk a little louder.

Though it appears that nearby roadways do not impact urban farmers, it is important to consider that our data collection may have missed a group of volunteers who could provide a differing perspective on the question of roadway impacts. It is possible that some volunteers and staff at the farm *were* bothered by the road noise, causing them to leave the site prior to research activities commencing at each site. This response is called a coping mechanism.[78] Coping mechanisms have been identified as a response (cognitive or behavioral) to some negative or unpleasant stimulus that detracts from a user's experience. For example, cross-country skiers may experience conflict with snowmobilers.[79] Cross-country skiers commonly prefer experiences that are based in nature, with quiet surroundings and natural scenery. Snowmobilers, on the other hand, typically seek out a more adrenaline-fueled experience. Consequently, snowmobilers intense and "aggressive" experiences that include vehicles that are noisy and emit malodorous exhaust, are likely to negatively impact the experiences

sought out by the cross-country skiers.

In response, skiers can use different types of coping behaviors including leaving the site in favor of one that meets their expectations (spatial displacement); using the site at a different time in hopes of avoiding other conflict-inducing users (temporal displacement); or engaging in accommodation. Accommodation is a cognitive strategy in which the recreation user reappraises their expectations for their recreational experience such that the impact of the conflict-inducing behavior is sufficiently reduced.[80] In the current study, one cognitive coping mechanism was reported by a small number of interview participants. These informants reported that they thought about traffic noise as something other than traffic, such as Emily from Veggielution re-imagining the sound as waves at the beach.

However, there may also have been volunteers at one or both of our research sites who left the sites (a spatial displacement coping mechanism) prior to our interviews in response to nearby roadways. As such, the reporting in this study may feature a biased sample since the researchers did not contact those who may have left the sites. For those at the site with whom the researchers could speak, however, traffic noise and odors were not a barrier to a positive experience at the site. The researchers thus suggest that the lack of impact that roads seem to have on study participants is attributable to the nature of farm users' motivations and expectations for being at the farm. The essential motivations evident in interviewee comments relate to engaging in personally meaningful activities, not a quiet experience in nature. For farm users, it is clearly meaningful to participate in the food system in ways that feel more conscious and intentional. Interviewees commented often about how farming activities contribute to doing something more than just "sitting around" and living lives that would feel unfulfilling for them. The meaningfulness of participating more consciously in the food system was also reflected in comments about helping the community.

Interviewees expressed a motivation to learn about growing healthy food, helping others learn how to grow their own healthy food, and helping youth to learn about and appreciate farming and food production. Both farm staff and recreational volunteer farmers described how the mission of the farms (especially regarding education) resonated with them. Many commented that being around growth and life was deeply meaningful to them. Clearly, farm staff and volunteers were motivated by service and education, both of which contribute to living a meaningful life for them. A meaningful life for the volunteers and staff also centered around empowerment through engagement. By working with each other, they could learn to provide food for themselves and become engaged with each other, the community, and the natural systems on which we depend. Farm staff and volunteers also consistently identified building connections and a sense of community (among farm staff and volunteers, and with the neighbors in the community surrounding the farm) as strong motivators. These basic motivational traits are consistent with the expectations interview participants discussed.

The researchers suggest that farm user motivation for doing something that feels meaningful and feeling a sense of connection lead to respondent's reported expectations centered on contributing to the farms with their labor, learning about farming and gardening, and having opportunities for social interaction. Interestingly, though interviewees did not identify having a quiet nature experience as an expectation, they nevertheless voiced interest in feeling more connected to the Earth. This sense of connection to others, including nature, is a

recurrent theme throughout the interviews. A sense of connection to nature is frequently sought during more peaceful remote area recreation.[81] [82] Despite being in the middle of a major urban area surrounded by busy roadways, farm staff and volunteers expectations indicate that they valued the opportunity to connect with nature by putting their hands in the dirt and encountering and experiencing the plants and animals at the farm.

The researchers suggest that this consistency between interviewee motivations, expectations, and experiences at the study sites is the primary reason that interview analysis failed to reflect a discernable negative impact from nearby roadways. Nearby roadways have little or no negative impact on our sample because they were motivated to be at the farms for reasons other than a peaceful and quiet nature-based experience. Further, their expectations, derived from their motivations, were met because they did not depend on a serene nature setting. Given that their expectations did not include quiet or peace, there was no sense of conflict between experience, motivations, and expectations for volunteering or working at the farm sites. In fact, many respondents indicated that they were glad that the farms were located so close to roadways because it meant that they were easy to access. Study results present several implications for management of urban green spaces, especially those located nearby a busy roadway.

MANAGEMENT AND POLICY IMPLICATIONS

The researchers suggest that there are four dimensions of urban farming our analyses revealed that are directly relevant to urban planning and management. These dimensions are: Need for additional research, urban farms can serve as resources for healthy food options, urban farms contribute to local ecosystem services with direct benefits for city dwellers and, space for salubrious outdoor leisure activities is needed in heavily urbanized locations.

Additional Research on Urban Farms is Needed

This report presents the outcome of a case study. While case studies are immensely useful, they are by design and necessity, not generalizable. The results of our analyses represent another piece of a picture that remains incompletely understood but with additional study, will grow clearer. Currently, the body of research that has considered the impacts (social and economic) of urban farms remains incomplete and the authors would like to encourage decision makers and planners to support scholarship that focuses on the still developing understanding of urban farms and their impacts. One of the difficulties urban planners and decision-makers have identified in relation to urban farms is a lack of understanding and access to technical information.[83] Consequently, there is reason to dedicate public and private funds to support scholarship focusing on urban farming impacts. Results from collaborative research projects involving urban farms, civic and business leadership, and universities will contribute to continued data-driven management decisions.

Access to Healthy Foods

Urban open spaces, especially those that may not be ideally suited to other commercial or residential uses (e.g., small patches of land abutting a freeway), could be developed

for agricultural uses. In many low-income communities around the U.S., urban farms and gardens directly contribute to social, environmental, and health justice as sources of healthy foods.[84 85] Provision of food through urban farms has demonstrated economic impacts that include savings for individual families and communities[86] as well as commercial benefits through farmer's markets.[87 88] Open space in neighborhoods has also been linked to higher property values.[89 90] Public planners and decision-makers can contribute to direct economic impacts for city residents through urban farm spaces using local laws that extend urban farming economic benefits to landowners.

In some locations, city and state governments have already begun to recognize the practical economic implications of non-industrial agricultural for urban property owners and developers. In California, Assembly Bill 551(the Urban Agriculture Incentive Zones Act (UAIZ), which was signed into law on Sept. 28, 2013) allows cities and counties to create incentive zones in urban areas for local food production. Under UAIZ, landowners who agree to designate their land for small urban farming operations, greenhouses, community gardens, or the like for five years or more are entitled to adjust assessed property value for tax purposes. Property taxes for such plots will be assessed based on the average per-acre value of irrigated cropland in California, which is generally a much lower rate than urban property tax rates. To qualify for the lower property tax, urban agriculture parcels must be at least 0.10 acres and no larger than 3 acres.[91] According to the California State Board of Equalization, the assessed value for lands falling under UAIZ in 2020 is $15,100 per acre.[92] These tax incentives should be very appealing to commercial property owners who possess undeveloped property not readily converted to more conventional uses because of its location next to a busy roadway. By taking advantage of the UAIZ designation, property owners not only benefit financially but also contribute to neighborhood stability, sustainability, and environmental justice with direct and measurable benefits to public health. These benefits would not only accrue for community residents either; reserving open space for community agriculture also creates very positive visibility for property owners and real estate developers.

Ecosystem Services

Ecosystem services are services that arise out of natural processes and yield benefits for people.[93 94] Urban ecosystems, that include urban farms and gardens, are identified as providers of direct services to people,[95 96] including provision of food,[97] biodiversity,[98] pollination and seed dispersal,[99] water regulation and quality,[100 101] and climate change resiliency.[102] Consequently, city planners and decision makers who wish to implement intentional, proactive strategies for sustainable city planning rather than arguably less efficient, reactive strategies can meet their goals partially by including urban small-scale farms in their planning. The significance of sustainability in city planning is apparent when one considers accelerating urbanization of humanity.

Trends in data suggest that human settlement will grow increasingly urban in the unfolding 21st century,[103] and that cities will likely face complex and interwoven impacts of global climate chaos.[104 105] Inclusion of urban green infrastructure can help mitigate many of the impacts of climate change in cities.[106 107] Among the unique consequences cities face in a heating global climate is the urban heat island effect (UHI) in which cities are warmer

than surrounding rural areas as a result of heat trapping and reflecting materials used to build cities.[108] Predictions for economic impacts of UHI reach as high as 3.9% of city GDP by the end of the century.[109] Mitigation of UHI is one of the ecosystem services that urban green spaces like farms provide for city residents.[110 111] City planners and decision makers will serve their constituents well by considering in current and future city planning decisions how urban farm spaces contribute to UHI mitigation and other ecosystem services. Planning in harmony with nature (by including abundant green infrastructure) results in improved community health (as indicated by such things as physical activity and healthy food) and economic resilience (ability to adapt to and manage economic expansion and contraction).[112] Another ecosystem service, access to outdoor recreation and physical activity, are both social determinants of health and contributors to sustainable urban planning.[113 114] Urban farms, according to our sample, provide valued opportunities for physical activity. Therefore, the researchers suggest that the salubrious physical activity associated with urban farming will also positively impact public health.

Provision of Outdoor Recreation

Respondents in our sample indicated that one prominent motivation for volunteering on urban farms is the opportunity to engage in physical activity that is also meaningful (e.g., growing and teaching others to grow food). Personally meaningful physical activity is routinely provided through outdoor recreation, identified as an ecosystem service—but one which receives less attention relative to the more well-known services such as climate change mitigation and water regulation.[115 116] Engagement in physical activity outdoors provides a host of benefits for participants including better health,[117 118 119] positive emotional states/better mood,[120 121] improved cognitive function,[122] and spiritual wellness.[123 124 125] These benefits are linked directly to economic impacts such as worker productivity and reduced strain on public healthcare systems.[126 127] In addition to such benefits, outdoor recreation is directly related to sustainable management of urban natural resources by virtue of creating a stronger sense of connection to nature.[128 129]

Conscious awareness of a connection to nature is regularly identified among remote-area nature visitors as a desirable outcome of their experiences.[130 131] Similarly, respondents in the current study reported that feeling more connected to the Earth and its natural systems was a strong motivator for working at both farm sites. Through urban, non-industrial farming, participants engage in physical activity that connects them to the local ecosystem. From the point of view of sustainability, children's sense of connection to nature is particularly important to consider. Research identifies pleasant, nature-based childhood experiences as one indicator of future pro-environmental behavior in adult life.[132 133 134] Urban residents with strong pro-environmental attitudes are more likely to be supportive of sustainable urban natural resource management and policies.[120 135] Therefore, city planners and decision makers can expect readier support for sustainable natural-resource management in cities where the communities with whom they will partner have a well-developed understanding and appreciation of how ecosystems function through their sense of connection to nature.

Community planning and development are collaborative processes in which a well-informed, actively engaged community will drive development and planning towards

consensus decisions. Given the likelihood that urban planning will face increasingly complex challenges in a new climate-altered reality, decision makers and the publics they serve will need to consider and understand various planning alternatives. Among the climate change mitigation strategies that have demonstrated effectiveness for a relatively low cost,[136] abundant urban green infrastructure will be more likely to be supported by city residents who have first-hand knowledge and experience with urban green spaces. Nevertheless, investment by cities in urban green infrastructure remains under debate, making additional investigation into its costs and benefits necessary.[137] This case study provides an additional data point in the continuing discussion.

VI. CONCLUSION

In this case study, the research team sought to better understand how nearby roadways impact volunteers and staff at two San Jose, CA urban farms. The researchers explored study participants' attitudes and perceptions of nearby roadways to facilitate understanding of the relationship. Based on existing scholarship focusing on desirable features associated with positive outdoor experiences, the researchers suspected that farm volunteers and staff would be likely to identify road noise as a barrier to positive experiences. The sample reported on in this paper, however, reported that nearby roadways did not negatively impact their farm experience. In fact, not one single respondent indicated that nearby roadways were a problem either by virtue of noise or unpleasant odors. This lack of impact by nearby roadways on farm users is understandable given study participants' motivations and expectations (Figure 1). The respondents in this study were not motivated by working in a peaceful natural location and, consequently, had no expectation for a quiet nature experience. In fact, respondents expected to hear traffic noise given the location of the farms in downtown San Jose. It is significant to note that many respondents even identified the proximity of roadways as a positive feature; locating farms right off the freeway makes them easy to reach. Based on these findings, the researchers propose several management considerations with direct implications on public health and wellness as well as sustainable urban planning and management.

The researchers caution the reader to take note of several study limitations. First, this study is a small-sample case study and is, therefore, not generalizable to the population of San Jose, nor to any other population of urban farmers. Second, sample selection bias may create upward pressure on study error. The researchers contacted only those working at the farms at the time of study and, therefore, were unable to interview any people who may have left the study sites in response to negative impacts of nearby roads. Finally, all studies contain inherent error resulting from numerous methodological sources. The researchers attempted to reduce error by rigorously adhering to tested social science research methods, but error cannot be removed entirely from any study. As Kaplan and Kaplan explained, "Every study is incomplete and provides only a partial view. Multiple studies across different groups of people and different settings will be necessary no matter how elaborate each individual study."[138] Thus, future studies could expand and improve upon this work by examining the relationship of nearby roadways and urban farmers' experiences in different locations across the state and nationally.

The researchers on this project present these results with the hope that they will be a useful contribution to urban natural resource managers, city planners, and the general body of knowledge concerning our relationships to urban green spaces and sustainable planning. The results demonstrate how highly valued urban farms are by their paid staff and volunteer. Moreover, there is a growing body of empirical evidence that supports the conclusion that urban farms and gardens generate abundant benefits with low accompanying costs. Nevertheless, efficient and intentional strategies for sustainable city management will depend increasingly on understanding the costs and benefits of space usage to urban residents. Busy urban roadways are here to stay for the foreseeable future; cities rely on them to transport goods and people daily. Unused small parcels of land that abut a busy roadway need not remain unused. City planners and managers can capitalize on the presence of undeveloped

land near these roadways. Such sites can be a resource for individual and public health, ecosystem services and sustainability, environmental justice, and better quality of life for city residents in the Bay Area.

APPENDIX A: BILINGUAL OUTREACH MATERIALS

SPANISH VERSION—VEGGIELUTION INTRODUCTION LETTER

Queridos amigos en Veggielution,

Thank you for taking the time to read this.Gracias por tomar el tiempo de leer esto. My name is Joshua Baur.Mi nombre es Joshua Baur. I am an assistant professor at San Jose State University, in the department of Health Science and Recreation.Soy profesor asistente en la Universidad Estatal de San José, en el departamento de Ciencias de la Salud y Recreación.

I am reaching out to inform you about a study I am conducting.Me dirijo a ustedes para informarles sobre un estudio que estoy realizando. The Mineta Transportation Institute (https://transweb.sjsu.edu/) is funding this project.El Instituto de Transporte de Mineta (https://transweb.sjsu.edu/) está financiando este proyecto. Along with Graduate Research Assistant Ashley Estrada, and Undergraduate Research Assistant Cynthia Franco, I am looking at the impacts of nearby roadways on users of urban farms, such as yourself. Junto con la Asistente de Investigación de Posgrado Ashley Estrada y la Asistente de Investigación Cynthia Franco, estoy analizando los impactos de las carreteras cercanas en los usuarios de las granjas urbanas, tal como la de Veggielution. We are looking for volunteers to participate in our study. Estamos buscando voluntarios para participar en nuestro estudio.

Esperamos que, con la ayuda de los voluntarios, los resultados de este estudio ayuden a los gerentes de su granja y los planificadores locales y tomadores de decisiones a tomar en cuenta las necesidades de los residentes de San José. Study results will also contribute to a scholarly body of research. Los resultados del estudio también contribuirán al cuerpo académico de investigación.

We will be coordinating with your farm's staff to set up times to carry out interviews withEstaremos coordinando con el personal de su granja para establecer horarios para llevar a cabo entrevistas con study volunteers.voluntarios para la investigación. I hope that you will consider participating with our study.Espero que consideren participar en nuestro estudio. Your experiences and thoughts are important to us.Sus experiencias y pensamientos son importantes para nosotros. If you have any questions, please feel free to contact me at Joshua.baur@sjsu.edu.

Si tienen alguna pregunta, no duden en contactarme por email en Joshua.baur@sjsu.edu.

Thank you for your kind attention.Gracias por su amable atención.

Joshua Baur

Joshua Baur

ENGLISH VERSION—VEGGIELUTION INTRODUCTION LETTER

Dear Friends at Veggielution Farm,

Thank you for taking the time to read this. My name is Joshua Baur. I am an assistant professor at San Jose State University, in the department of Health Science and Recreation.

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We expect that, with the help of study volunteers, results from this study will help managers at your farm and local planners and decision-makers reach decisions that are inclusive of the needs of San Jose's residents. Study results will also contribute to a scholarly body of research.

We will be coordinating with your farm's staff to set up times to carry out interviews with study volunteers. I hope that you will consider participating with our study. Your experiences and thoughts are important to us.

If you have any questions, please feel free to contact me at Joshua.baur@sjsu.edu.

Thank you for your kind attention.

Joshua Baur

SPANISH VERSION—TAYLOR STREET FARM INTRODUCTION LETTER

Queridos amigos en Taylor Street,

Thank you for taking the time to read this.Gracias por tomar el tiempo de leer esto. My name is Joshua Baur. Mi nombre es Joshua Baur. I am an assistant professor at San Jose State University, in the department of Health Science and Recreation.Soy profesor asistente en la Universidad Estatal de San José, en el departamento de Ciencias de la Salud y Recreación.

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Esperamos que, con la ayuda de los voluntarios, los resultados de este estudio ayuden a los gerentes de su granja y los planificadores locales y tomadores de decisiones a tomar en cuenta las necesidades de los residentes de San José. Study results will also contribute to a scholarly body of research. Los resultados del estudio también contribuirán al cuerpo académico de investigación.

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If you have any questions, please feel free to contact me at Joshua.baur@sjsu.edu .

Si tienen alguna pregunta, no duden en contactarme por email en Joshua.baur@sjsu.edu.

Thank you for your kind attention. Gracias por su amable atención.

Joshua Baur

Joshua Baur

ENGLISH VERSION—TAYLOR STREET FARM INTRODUCTION LETTER

Dear Friends at Taylor Street Farm,

Thank you for taking the time to read this. My name is Joshua Baur. I am an assistant professor at San Jose State University, in the department of Health Science and Recreation.

I am reaching out to inform you about a study I am conducting. The Mineta Transportation Institute (https://transweb.sjsu.edu/) is funding this project. Along with Graduate Research Assistant Ashley Estrada, and Undergraduate Research Assistant Cynthia Franco, I am looking at the impacts of nearby roadways on users of urban farms, such as yourself. We are looking for volunteers to participate in our study.

We expect that, with the help of study volunteers, results from this study will help managers at your farm and local planners and decision-makers reach decisions that are inclusive of the needs of San Jose's residents. Study results will also contribute to a scholarly body of research.

We will be coordinating with your farm's staff to set up times to carry out interviews with study volunteers. I hope that you will consider participating with our study. Your experiences and thoughts are important to us.

If you have any questions, please feel free to contact me at Joshua.baur@sjsu.edu.

Thank you for your kind attention.

Joshua Baur

Joshua Baur

APPENDIX B: INTERVIEW SCRIPT/QUESTIONS

Introductory Comments

First, thank you for taking time out of your day to speak with us. My name is_____(Josh or Ashley). I am a_____(faculty member or graduate student) at San Jose State University. This is my project partner_____(Josh or Ashley). (SPANISH LANGUAGE VERSION ONLY) - Cynthia Franco, an undergraduate research assistant, is also with us today acting as our translator. As you may be aware, we are conducting this study in partnership with farm leadership to learn more about how nearby roadways affect your experiences here at_____(farm name).

We are here today to learn from you. We will be asking you some questions because your stories and experiences are important to us. We anticipate that with information we develop through this work, leaders at the farm and in the city will be better able to serve you. We also expect that our study results will contribute to education and scholarship.

Before we get started, I want to make sure you had a chance to read the consent notice we provided for you. Did you read it? (Yes/No). Do you have any questions about it or our project?

OK, let's get started with the interview.

Starter Question

We would like to start by learning more about your understanding of urban farms. Can you tell me a little bit about what you know about urban farms?

Motivation Questions

Thank you, that's great. Now, we would like to learn more about why you are here.

What is the main reason you are here at the garden today?

- Grow food
- Meet up with friends
- Spend time in a natural space
- Because I have to be/Community service

(can ask clarifying question - "Are you here because you want to be or have to be?)

- What made you choose this particular location?
- How did you learn about Veggielution/Taylor Street?

- How did you learn about urban farms and gardens?

Expectation Questions

Can you tell me a bit about what your expectations were, before you started volunteering here?

- What did you think was going to happen here?
- Did you think you would be working by yourself, or in groups?
- Did you expect there would be people in charge? Or did you anticipate being in charge of yourself?

Now that you have been volunteering, in what ways have your expectations meet met?

Is anything different than you thought it would be?

Social Environment

Thank you for your thoughtful answers. Now, I would like to ask you a little about the social environment here and the people that you volunteer with.

Do you feel like you are part of a community here at the farm?

- What words come to mind when you think of the other people working with you here?
- How do you think about the other volunteers?
- Are they friends?
- Who do you usually come to the farm with?
- Friends? Family?

Think about the last time you were allocated space in this garden. Tell me about the process by which you get space.

- What was the process?
- What kind of input did you have on the decision?
- How did you decide what to put in the space?

Traffic Impacts

Thank you. Your answers are really helpful. Now, I would like to ask you some questions about how the cars and roadways nearby affect you while you are working at the farm.

What are the most common sounds you hear from nearby roads?

- Horns?
- Tires/screeching?
- Accidents?
- Constant hum?

Are there some sounds that are more disturbing to you than others?

- How so? Elaborate
- How do you help yourself ignore the sound(s)?
- Do you hear the sound(s) all the time while you are here? Do you stop hearing it after you have been on site for some time?
- What techniques do you use to help ignore the traffic noise?
- Would you say you are able to tune out?

Are there smells from the nearby roads that impact your time here?

- What are they (Exhaust, burning rubber, other car odors)?
- In what ways do you notice them affecting you?
- What techniques do you use to ignore the smell(s)?

Thank you. Your stories are very helpful. Now, we would like to learn about how you get to the farm.

Will you please talk a little bit about how you ordinarily get to the site?

- Public transport
- If you wanted to get to this site using public transportation, how easy or hard would it be?
- Personal vehicle

- How is parking at the site?
- Carpool
- Other?

Are there traffic conditions around the site that sometimes cause you to change your plans?

- Come only at certain times of day or week?
- Not come at all?

This is all really helpful. We are nearly done. To conclude, we would like to ask a few basic questions about you. I want to assure you that all information is protected and remains confidential. Basic background information will be reported for the group, not individuals.

Demographics

1. How long have you been volunteering at_____?
2. In a typical week, how many days per week? How many hours per day on average?
3. Preferred time of day/day(s) of the week you like to volunteer
4. How long have you been actively involved in urban farming (gardening?)
5. For how long have you lived in San Jose?
6. Where do you live, if not SJ? How long?
7. How do you identify your cultural heritage?
8. European? Latin American? Asian?
9. How old are you?

Concluding Remarks

Great! That's all the questions we have.

In the few minutes we have left, is there anything you want to mention about your experiences here that we did not ask about? (THIS QUESTION MAY BE SKIPPED IF THERE IS TOO LITTLE TIME REMAINING).

Thank you once again for your help. Results from this project will be provided to farm leadership, in case you are interested.

We hope you enjoy the rest of your day.

ABBREVIATIONS AND ACRONYMS

Co-PI	Co-Principal Investigator
IRB	Institutional Review Board
MTI	Mineta Transportation Institute
PI	Principal Investigator
RA	Undergraduate Research Assistant
SJSU	San Jose State University
UAIZ	Urban Area Incentive Zone

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ABOUT THE AUTHORS

JOSHUA BAUR, PHD

Joshua Baur is an assistant professor and Recreation Degree coordinator at San Jose State University. His research focuses on the relationship between urban residents and the natural environment.

ASHLEY ESTRADA

Ashley Estrada is a graduate student completing her master's degree in Applied Anthropology at San Jose State University.

PEER REVIEW

San José State University, of the California State University system, and the Mineta Transportation Institute (MTI) Board of Trustees have agreed upon a peer review process required for all research published by MTI. The purpose of the review process is to ensure that the results presented are based upon a professionally acceptableresearch protocol.

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Appendix D: Blog Post

Freeways and Farms: Veggielution at Emma Prusch and Taylor Street Urban Farms Study

Project/Program:
Freeways and Farms: Veggielution at Emma Prusch and Taylor Street Urban Farms Study

Project Coordinator:
Dr. Jan English- Lueck

Project Members:
Dr. Joshua Baur
Ashley Estrada

Description:

The scope of our project examines how nearby roadways impact the perspectives of the users and producers of urban farms. Two urban farms in San Jose, California were focal points of our research: Veggielution at the Emma Prusch Farm Park and Taylor Street Farm. The Mineta Transportation Institute provided the funding for our project, with Dr. Joshua Baur as Primary Investigator and me as a Co-Investigator.

As a Co- Investigator to the project, I had the flexibility to focus my research as an applied anthropologist, utilizing Anthropological themes such as place attachment and the social production of space. The question that I was seeking to answer was "how do the components of the roadways, whether the natural or built environment of the street, play into the physical and emotional construction of these farms?

As a research team, Dr. Joshua Baur and I conducted fourteen semi- structured interviews with the volunteers and farm staff at the farm sites during the summer of 2019. In addition to our interviews, I also conducted structured and participant observations during volunteer gardening events held as each farm site. The flexibility of our project allowed Dr. Baur and I to conduct our own analysis centered around our focus of research.

As an applied anthropologist, I shaped my theoretical framework around place attachment and the social production of space. Through my analysis of these themes, I was able to forecast three core results:

1. Participants adapted to the roadway noise through noise replication.
2. The location of the farm sites was accessible due to surrounding roadways.
3. Participants constructed their space as a platform for meaning that can be produced in other urban places.

These three core findings represent implications for future research in the field of applied anthropology. By focusing on the intersection of place attachment and the social production of space, I was able to determine that the obvious constraints of roadways, such as busy traffic and noises were not relevant. The social connection and the connection to land that volunteers and farm staff experience holds relevance. The place is not as significant as the activity that motivates volunteers and farm staff to visit the space. Such places can be replicated in other urban spaces by highlighting motivating factors such as educational opportunities and community interaction. An applied anthropologist can provide an ethnographic lens to the construction and building of these future spaces.