

# Nutrition Architecture: A child's walk to discovery



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# **Nutrition Architecture: A child's walk to discovery**

2013 Senior Project, Kathy Castro

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# Abstract

Health problems such as cardiac and obesity have increased in underprivileged urban communities due to the lack of understanding of the importance of proper nutrition and physical activity. This has widely affected urban children; with each new generation the percentage of obesity has increased. It is my belief that children have the ability to be the new pattern of change in order to combat these health issues, as they have the ability to involve different sectors of the community.

My goal is to work with the Network for a Healthy California, Los Angeles, in obtaining a child's attention in promoting a healthier lifestyle. This will be done through the redesigning of the Network for Healthy California Demonstration Garden; making it more suitable for children while integrating the rest of the community. In the garden, the different age groups become intercorrelated through the idea of a gradient; as you progress from a young age the garden is seen as playful, where as an older age person might view the garden as a learning experience. In a larger context, there is the opportunity to implement a greenway serving as a form of "way finding" to the garden and achieving the second goal of the network of physical activity. The greenway will feature redesigned streets with the implementation of bike paths and an increased amount of vegetation partly completed through parklets and extension curbs. In order to complete the best design, I took part in community participatory events, looked at case studies, and researched functional techniques.

In doing so, it was realized that learning is not only a form of education but a notion for discovery. By involving the community in participatory events there is a stronger enthusiasm for the project. Children too, can be seen as leading their communities in solving their problems.



# Dedication

A mi familia que ha estado conmigo todo el tiempo dándome amor y apoyo. Gracias **apa** por enseñarme que la persistencia te ayuda a cumplir todo. **Ama**, gracias, por todo su cariño. ¡Tengo los mejores padres del mundo! ¡Gracias a mis **hermanos y hermanas** por nunca dejar de creer en mí! Específicamente, gracias **Cindy** por ser la persona en que siempre puedo confiar. A mis **sobrinos** por darme alegría todos los días. ¡Los adoro!



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To my committee members **Patsy Owens**, **Michael Rios**, and **Daniela Tavares**. From the start I knew I had chosen the best committee. Patsy, the nicest person I have met and so thrilled about working with children. Michael super persevering and always outgoing with the community. Daniela, the first hispanic female architect and most energetic person I have met. At times when I was falling asleep because of a project due the day before, you were still “jumping around” after a day’s work. Thanks to you all. I repeat you guys are the **BEST** committee.







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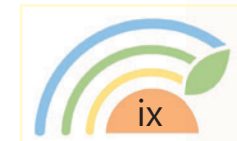
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# Introduction



# Preface

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Urban communities have many times overlooked the striking issue of health problems. The under-privileged urban citizen has entailed a life where good nutrition has had a minimal influence in their eating habits. Many of these are the effect of living in a community where fast food restaurants are closer to one's home than are grocery stores and community gardens. Los Angeles is an example of a city with high obesity rates and with minimal efforts of residents to improve their eating habits. Growing up in Los Angeles, I have seen communities being deprived of urban farms, gardens, etc. The most intriguing thing to see is how children are following in the footsteps of the adults, and having broader consequences at an early age. Instead of finding a form of change, these communities keep staying in the same pattern. It is my belief that children have the capacity to change this pattern of conformity and bring about a new, idealistic way of living. The reason for this is because I see children as being part of a larger community web, where they are able to effect the participation of the parents, followed by councils, the district, and so on. In other terms they have the influence needed to bring about a change.



# Project Goals

The main goal of the project is to allow children, and indirectly the community, to see the positive effects of healthy eating. In this project, "children" are defined as being from pre-school up to 18 years of age. Thereby, the research questions are: How can I design a greenway that would provide wayfinding to the garden and satisfy the network's goal of physical activity? ; How can I involve the community in the design? ; How can I design a demonstration garden that would capture the interest of children?

It is my perspective that the garden provides the opportunity to be part of a larger, healthier network serving as an educational site and the greenway serving as a place for exercise. The greenway will serve as a connector to the community by giving a more inviting feeling. The students who work in the garden will have the ability to expand the education to the nearby residential areas, the community. By allowing the community and children to take part in the design process, we will greatly satisfy their interest.

## 1 Master Plan

The first goal is to design a greenway master plan that allows different streets to serve as a part of the way finding to the garden. This is done through vegetation and signage. Having the different activities in the streets would emphasize the aspect of discovery. The greenway would encourage recreational uses.

## 2 Site Design

The garden serves different age groups of children along with providing a space for the community.









**Background**



# Los Angeles County at a Glance

Good nutrition plays a large role towards leading a healthy life. In urban cities, several factors (having a longer distance to food markets, having less time to prepare food, and loss of agricultural fields by urban development) have arisen preventing the emphasis of the importance of healthy eating habits (Argenti, 2000). This has caused a surge in health problems. A prominent example is the city of Los Angeles which has had an increase in chronic health problems such as obesity and diabetes. In 2011, 23.6% of the adult population in Los Angeles County was obese and 37.1% overweight. 9.5% of the population was diabetic (Los Angeles County, 2011). To add to this, in 2008 25.4% of children were obese (Los Angeles County, 2012). I believe that the community has bad eating habits because of the lack of education on the nutritional issues and the large amount of fast food restaurants (In 2003 Mc Donalds had 13,774 restaurants in the U.S) that could be found "around the corner" from residential areas as compared to community gardens and urban farms (Lang and Millstone, 2003). From the Los Angeles County Health Survey it could be seen that in 2007 only 15.1 % of the population was eating 5+ servings of fruits and vegetables per day. While, 25.8% of the population was eating fast food (Los Angeles County, 2011). It is known that the food that comes from animal origin contains more fat, has higher energy density, has a large amount of antioxidants, and has lower levels of fiber than the food from plant origin (Lang and Millstone, 2003).



# Los Angeles County at a Glance

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The lack of walkable streets has also played a role in increasing health problems. By two thirds into the 20th century fewer streets were designed to be inviting for physical activity. Part of the reason for the lack of walking was that people's destination points were at a greater distance from residential areas; there was a greater feeling of danger with the increase of traffic and attack. Discouragement also rises with the smaller size of sidewalks as compared to traffic lanes. The effect has taken a toll on the lifestyle of urban children. One generation ago about 40% of children walked or rode their bike to school; now in the 21st century, 20% of children walk or ride their bike to school. All in all, the lack of accessibility to safe streets and inviting neighborhoods has made urban communities more automobile oriented. This has also impacted healthy eating since individuals are now lacking the incentive to walk to their local grocery store (Soderstrom 2008). One could see that the correlation between healthy eating and physical activity done by a person has grown to be one of the main factors in maintaining a healthy lifestyle.



# Network for a Healthy California

The problem of obesity and other health issues could be alleviated through an increase in education of the public on intaking better nutrition. This is a concept widely expressed in the Network for a Healthy California (California,2013). The network is a program of local, state, and national partnerships (it includes the United States Department of Agriculture and the Supplemental Nutrition Assistance Program) that aim to improve the chronic health conditions of low-income California residents by encouraging vegetable and fruit consumption along with physical activity(California, 2013). This is often done through “Harvest of the month” (see Figure 1), which is a tool kit that contains newsletters,

information, and sample produce tasting of the fruit or vegetable that is in season. The tool kit is sent to teachers who apply to be part of the Network which they can than use to give a lesson in their class. The information is also translated into several languages, one of the main ones being Spanish, making it convenient for non-native English speakers. The Network also informs the public by using commercials to showcase their goal of healthy eating. It is a great way to contrast the fast food advertisement aimed at children, such as that of McDonalds. (Lang and Millstone 2008).



Figure 1. Harvest of the month



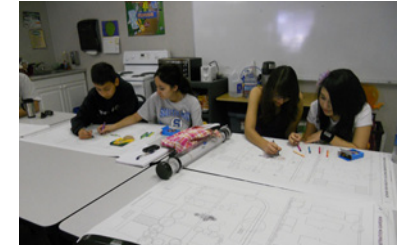
**Research**



# Community Involvement

When the community is integrated into the start of the design process, it is more likely that they will care for the end design. Participatory events are a good way to decrease the feeling of anonymity and allow the user to see the issues being emphasized. It is a great way to give control to the participants which allows for their needs and values to be taken into consideration (Sanoff, 1992). Taking this into consideration, community involvement played a large role in the design of the garden.

Since most of the community was Hispanic, the information in meetings, from the start, was translated in English and Spanish. In the first meeting with the community, I introduced myself as a Landscape Architecture student at UC Davis and informed them about the work of a Landscape Architect. Afterwards, I gave the participants an introduction to the project. I explained the activity for the day, a charrette, and asked them if they could help me. I received nods and replies of "si" (see Figure 2.1 and 2,2). I gave the plan of the site and asked the community to design the garden suitable for children (see appendix 2). Most people did not know what a plan was so I drew a schematic plan. Since the charrette was completed in groups, I wanted to get a more personal view of each individual so I asked them to fill out questionnaires (see appendix 1). That day I saw that the community was greatly excited to be part of the design. I received questions such as "¿Cuándo vamos a empezar hacer el jardín (When are going to start building the garden)?"



2.1 Design charrette teen involvement



2.2. Design charette adult participation



2.3 In the Garden

# Community Involvement

I wanted to get a better feeling for what activities took place in the garden, so I attended one of the gardening classes (see Figure 2.3 and 2.4). Individuals were eager to help, and the sense of the community was greatly seen when participants brought food to share with others. The food was specific to the culture of the person. I was also invited, by Elizabeth Contreras, to a feast (tamales) that would be happening in one of the participants' house.

The goal of my next visit was to allow individuals to keep participating in the design and to get to know more about the community. After helping in the garden (weeding and planting "Las tres hermanas" section in the garden), I began to talk to some individuals (See Figure 2.5 and 2.6). I found that there were people who wanted to become artists, photographers, and architects. They were really passionate about what they were doing and showed me some of their work. Then, I presented the work that I had done and asked individuals for their feedback. They were happy to see the amount of work going into the designing of the garden.



2.4 Class Observation



2.5 Teaching the younger generation



2.6 Working as a community

# Community Involvement

Afterwards, a charette was held for the materials to be chosen for the site (see Figure 2.7). Participants got into groups of 4-5 and as a group had to choose the material they liked the most (see appendix 3). This was followed by a cooking class given by a chef. What intrigued me the most was the encouragement that the community gave each other. They would give thanks to the speakers and clap for them. There were comments such "viva (hooray)!" The integration of the community allowed individuals to be involved in all steps of the design, making them creators of what will become the final design.



2.7 Designing the Garden



# Best Practices: Greenway Design

Greenways contribute much to society and the environment. They are seen as unique areas in the landscape with specified characteristics. There are a variety of greenway types such as trail corridors, greenbelts, bio swales, etc. (Hellmund and Smith, 2006). All emphasize the idea of integrating the landscape into people's daily lives. Specific to this project, greenways will be a form of connection (wayfinding to an area) with the opportunity for recreational use and landscape integration into an urban community.

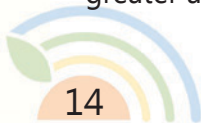
In order to design a suitable greenway, there are principles to follow: the community, especially children, should have contact with nature; greenways should include both natural and cultural elements; natural features should be preserved in order to provide a blend into the landscape; community gardens, urban farms, when possible should be connected to greenways; it is better to design short [streets] than long ones; a broad idealist greenway is significant in decreasing environmental equity and social problems (Hellmund and Smith 8). Following these principles will allow the designer to understand the spectrum to which a greenway obtains its focus.

In terms of recreation, the role of a greenway is to provide a space for leisure time where physical activity such as jogging, walking, biking is encouraged (Hellmund and Smith, 2006). Greenways often achieve this goal by connecting to other nearby greenways providing walkers, runners, and cyclists an opportunity to see new places. Having a greenway near a stream allows for activities such as bird watching and increases its visual appeal (Hellmund and Smith, 2006).



# Best Practices: Greenway Design

Greenways are a form of connection, not only through the connection of landscapes but as a connection of individuals in the community. First greenways are a space for individuals to be outdoors encouraging socialization. Many greenways have scenic places where people could go relax and enjoy the surrounding environment; they are also a great way to learn about the natural history of the site and how the greenway relates to their daily lives (Hellmund and Smith, 2006). Through the connection of different neighborhoods, greenways have the possibility of allowing communities to work together in the planning and management activities. For instance, by organizing community events, individuals share their ideas in creating defined places that could relate to the culture, environment, etc. Defining a place could be done by having a diversity of paths, with environmental art, interactive displays, or places for socialization (Hellmund and Smith, 2006) As well, by connecting neighborhoods, we allow for social equality to take place. It is known that low income groups often lack access to recreational sites and often have to deal with environmental hazards. The linearity of greenways provide access to a diverse group of individuals. This leads us to the idea that by having access to greenways, people will see the environment as being closer to their urban home and as a center for writing, art, etc. By connecting greenways to sites such as community gardens, we will allow individuals to see that the landscape is something more than just a place, it is part of our survival and we will learn to “participate in its different cycles of life” (Hellmund and Smith, 2006). Thereby, we will encourage individuals to have a greater acceptance for the landscape and increase physical activity.



# Best Practices: Greenway Design

Participation is a great way to captivate the interest of children to notice the surrounding environment. An example of children participation can be seen through the environmental art displayed in the “Children’s Forest Nature Walk” in San Bernardino, California. Ruth Wallen, an environmental artist, was the person in charge of the program whose final project was a series of 5 interactive signs made of etched plexiglass (Rosenthal, 2004). During weekends Ruth worked with local children in making drawings and stories of the forest that showed the children’s observations, experiences, feelings, and imagination (Hellmund and Smith, 2006). Drawings were montaged digitally and related text was added to produce the final panel. One panel, titled “Bear Fire”, starts by asking “What started the fire? Maybe it was lightning (See Figure 2.8).” (Rosenthal, 2004). This project used the linearity of the trail as a form of education and allowed children to interact with nature. As well, it obtained community participation and increased the caring for the space (Hellmund and Smith, 2006). Allowing individuals to see what was not noticed in the greenway would lead to greater observation of the surrounding area (See Figure 2.9). Therefore, showcasing what was discrete.



2.8 Bear Fire Panel



2.9 Willow Rock Panel

# Best Practices: Greenway Design

Another form of environmental art used as education is Ichi Ikeda's "80-Liter Water Box" displayed in the 2nd World Water Forum in Kansai, Japan. The 80 liters represent the amount of water needed by a person a day to have a good lifestyle. The water box was put at the end of a pond (See Figure 2.10) and has information on the need for water globally and how the water locally is distributed. Having the water next to the pond brings the contradiction that more than 3/4 of people get by with less than 50 liters per day (Hellmund and Smith, 2006). However, people in the United States use more than 1000 liters per day



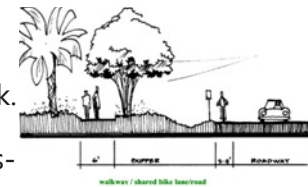
2.10 80 Liter Waterbox

in just watering lawns and washing cars. There are also hands on the box symbolizing that the future is in our hands (Greenmuseum, 2003). The water box, therefore, shows us what is occurring at different scales. It allows a person to see that what is occurring at the local scale may be different from what is happening at the local scale in other sites or at larger scales (Hellmund and Smith, 2006). The water box is a good way to show individuals how one small thing could affect things at a larger scale and allow them to be aware of the water problem that was not noticed. This project was a good form of community involvement through education (allowing individuals to see what is occurring in underprivileged areas) and allowing an individual to choose which solution was the best. This technique could be used in contemplating the idea the lack of healthy nutrition in underprivileged communities.

# Case Study: Lee County Greenway Masterplan

The Greenway Master Plan of Lee County in Florida came about because of the need for the county to create better walking conditions because of the number of pedestrian deaths in the county. In 2003, there were 4,827 pedestrian fatalities. In 2002, in Ft. Myers-Cape Coral, Florida there was 11 pedestrian deaths and 13 deaths in 2003. As a result, pedestrians in the county had minimal physical activity leading to increasing health issues such as heart disease, diabetes, and pancreatic cancer (Lee County Parks and Recreation). This could be seen in children whose lack of walking to school led to the increase in obesity numbers. Adults have shown the same pattern; between 1990 and 2005, the number of adults walking to work decreased while at the same time there was a 70% increase in the number of obese residents. This master plan has greenways as the major spine of the project and smaller arterials for physical activity, connection with nature, shopping, and getting to school and work.

Specifically, the plan is composed of land based trails (greenways and connection trails), equestrian trails, and blue ways (paddling and water trails). Land based trails are a form of manag-



2.11 Lee County greenway section

ing recreational and conservation aspects, as well as securing land for safety and trail development. In terms of Lee County, greenways are a connection to nature and serve as a mode of connection between large and small scale areas, connecting Lee County and Collier County. Connection trails, at the small urban scale, connect to schools, residential areas, cultural sites, and activity centers. These trails provide safety to pedestrians as the pathways and traffic lanes are separated (See Figure 2.11). Equestrian trails provide a scenic experience and cultural experience. The blueways at Lee County are a space for kayaking and canoeing (Lee County, 2006). They allow an individual to take different trails that offer different experiences.

# Case Study: Lee County Greenway Masterplan

A specific site within the Lee County Greenway master plan would be John Yarbrough Linear Park (See Figure 2.12). This 6 mile long park offers paths that individuals can walk, run, skate, bicycle, bird watch, picnic areas and way finding signage, trash receptacles, pavilions, and other seating opportunities. The trail is shaded through vegetation. An important thing about this park is that it can be accessed through sidewalks and paths (Lee County Parks and Recreation). This allows the user to take different trails to a destination offering different ways of discovery.



2.12 Yarbrough Linear Park

The health benefits of the program came with the increase in recreational opportunities closer to peoples' homes, the restoration of natural resources, and the increase in green space (Lee County Parks and Recreation). In order to achieve these benefits, the community had to set some goals for the program. that included separating pathways from vehicles, developing trails that provide a connection to nature, designing urban trails that are functional and enhance neighborhoods, and providing safe crossings for intersections. The project also had community participation (charettes and surveys) to decide what concepts and ideas should be employed in the design and which are suitable for the neighborhood (Lee County, 2006).

# Best Practices: Garden Design

To aid in the design process, I looked at different ideas and techniques of garden design used today. One is Titman's idea that flowers are of aesthetic values to children since they provide positive sensory imagery. She also mentions that children like sites where they have to "search for a place" and are able to wander since they provide a feeling of liberty (Titman, 1994). This shows children that parents have trust, which is important during the middle school age. As explained by the Food and Agricultural Organization of the United Nations, we have to emphasize the idea of "I hear and I forget, I see and I remember, I do and I understand" (Food and Agriculture Organization of the United Nations, 2010).

The implementation of this idea can help satisfy CA CORE State School Standards. For instance, installing a rainwater harvesting tank and making observations and sketches (CA State Standard 7); planting cabbages that attract caterpillars so students identify them and find causes (CA. State Standard 5B); surplus mangoes are sold and participants keep count (CA State standard 6.1) (Food and Agriculture Organization of the United Nations, 2010). Also, herbs can be used to make tea and then explain the culture of Native Americans and their usage of the herbs. The design of the garden could aid in the learning of 2D geometry (Brown and Williams, 2012). To help individuals learn about history, a checkerboard pattern of ancient cultivation patterns could be designed (Duffek, Johnson, and Richards, 2008).



# Case Study: Edible Schoolyard at Berkeley

The Edible School Yard at Martin Luther King Jr. Middle School at Berkeley was started by Alice Waters. The idea of the garden began with an article posted in a local newspaper in which Waters described that the middle school looked like “nobody cared about it” and it was a great example of “how not to use the land” (Waters, 2008). Neil, the middle school principal, contacted Water and asked if she wanted to help. The garden was created with the goal of educating children with a curriculum based on edible education and providing hands on experience while allowing children to eat healthy (The Edible Schoolyard Project, 2013). David Hawkins was later hired as the garden director. This was a great accomplishment since he believed that children should be involved from the beginning of a project because it brings the children a sense of control and a feeling that the garden they are working for belongs to them (Waters, 2008). Children care more for something they themselves have helped build (See Figure 2.13). This idea is complemented by Sanoff, professor of architecture in North Carolina State University, who states that children should see that they have a strong role in society in order to feel “welcomed” and obtain their participation. Participatory events are a great way to decrease the feeling of anonymity and allow the user to see the issue being emphasized. It is a way to give control to the participants which allows for their needs and values to be taken into consideration (Sanoff, 1992).



2.13 Children at work



# Case Study: Edible Schoolyard at Berkeley

The Edible Schoolyard now consists of an organic garden, built in 1995 from an adjacent lot next to the school, and a kitchen classroom where humanities teachers provide an education to students on culture, ecology, and language. The garden also houses the Edible Schoolyard Academy which meets annually to help emerging gardens fulfill their full potential by learning how to run the garden and what gardening techniques have worked on improving fruit and vegetable production. It offers community programming in which parents are able to come three Saturdays of the month to participate in the garden and students share information obtained from the lessons learned in the garden (The Edible Schoolyard Project, 2013). Some infrastructure seen in the garden that could be taken into consideration is the Ramada (See Figure 2.14), a wooden spider web structure that serves as the gathering space, filters and catchment tanks that serve as a form of water harvesting and conservation demonstration, and the pond with aquatic vegetation that serves as a relaxing place in the garden for students. Other infrastructure features include the beehives (See Figure 2.15), the tool shed, the worm bin, the compost row, and the soil bins (The Edible Schoolyard Project, 2013).



2.14 Ramada



2.15 Bee Hives

# Case Study: GEO Academy Garden

The Garden of Ethnic American Treasures (GO EAT), part of the GEO Environmental Science and Design Academy at Grant High School, also has several unique features. The GEO Academy has the main goal of allowing students to get the experience needed to help them go to college. It was started by students in 1999 as a form of environmental learning, health education, and community involvement (GEO Environmental Science and Design Academy, 2011). In the garden, science classes learn about ecology, health classes about nutrition, etc. One will find bird feeders, a bench made



2.16 GEO Academy mural

out of hay and concrete, a large cultural mural designed by students overlooking the main street (allows for community integration in the mural process and prevents vandalism) (See Figure 2.16), black and white plant signs (consists of horticultural and common name of plant), etc (Tavares, 2013). This is a great example of the idea that color and exploring are positive features in garden design for children as it provides a more engaging feeling (Titman, 1994).

# Case Study: GEO Academy Garden

One strong feature of the garden is the Garden Café, which is a kitchen used by biology and health classes for gardening and cooking lessons satisfying California Health Standards. The garden also has a profit aspect. One of the main funds for the garden comes from the Grants Advisory Board for Youth grant. However, the garden is also part of a salsa business that integrates local farmers (to grow tomatoes). The salsa is sold on the Grant High School Campus, in the Sacramento Natural Foods Co-op, in the Davis Farmers' Market, and the Del Paso Heights Farmers' market (GEO Environmental Science and Design Academy, 2013).

Furthermore, the garden is a strong integration of community. There is a space in the garden for the community, one of which is the Hmong community. Most interesting of all is the garden mentors program ( See Figure 2.17), where 4-6th graders come in twice a month and participate in activities designed by the high school students consisting of lessons in healthy living. This could be a feature of the demonstration garden since different age groups would be visiting the site.



2.17 Mentoring at GEO

# Case Study: Garden Mosaics Program

The Garden Mosaics Program was developed by the Department of Natural Resources at Cornell University. This program can be implemented in any community garden, neighborhood, school garden, and so on. The goal of the program is to “connect youth and elders to investigate the mosaic of plants, people, and cultures in gardens to learn about science, and to act together to enhance their community” (Department of Natural Resources Cornell University, 2013). In this program, children are learning from the older generation and the Mosaic’s educational resources, such as i. m. science databases (international online databases), contain successful gardening techniques implemented worldwide. The four core values of the program are science (children observe record and use the internet to learn about science), people (cross generational learning), cultures (see the diversity of gardening techniques), and action (improving the environment). Some ways to achieve the goal is through “Gardener stor[ies]”. In this case participants listen to the gardener’s oral presentation, take photographs of the practices, and see the connection to the gardener’s culture. A second idea implemented is “Community Garden Inventory” in which participants take a tour of the garden with a gardener and ask questions which are then put into the databases. A third technique is “Neighborhood Exploration”. In this activity, individuals walk around their neighborhood using aerial photographs and learn where individuals can find fresh fruit, learn about cultures, socialize, and relax. At the end of the activity, they make a collage of their findings and share their project online using the Neighborhood Exploration Form (Department of Natural Resources Cornell University, 2013).



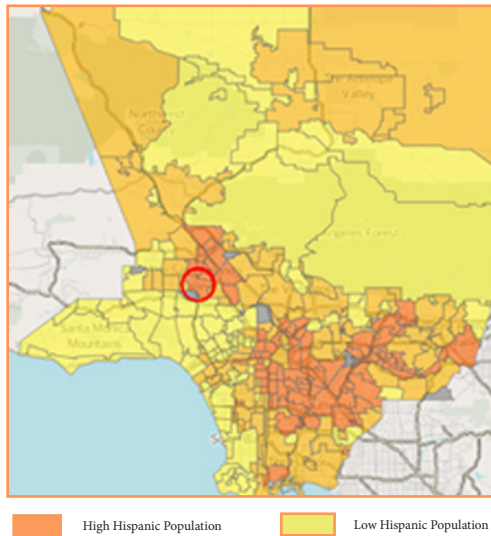


# Site Analysis

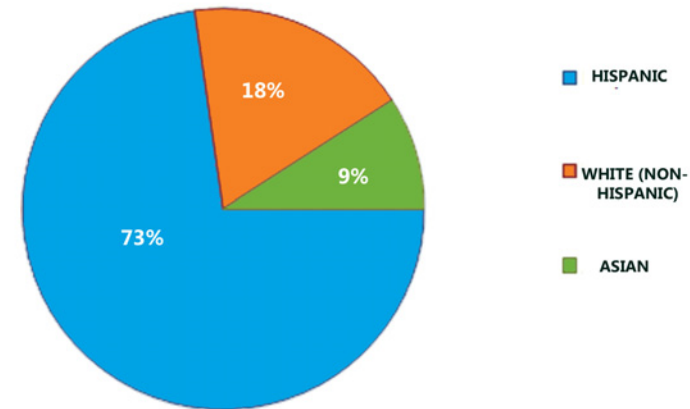


# Neighborhood Context

L.A County Hispanic Demographics



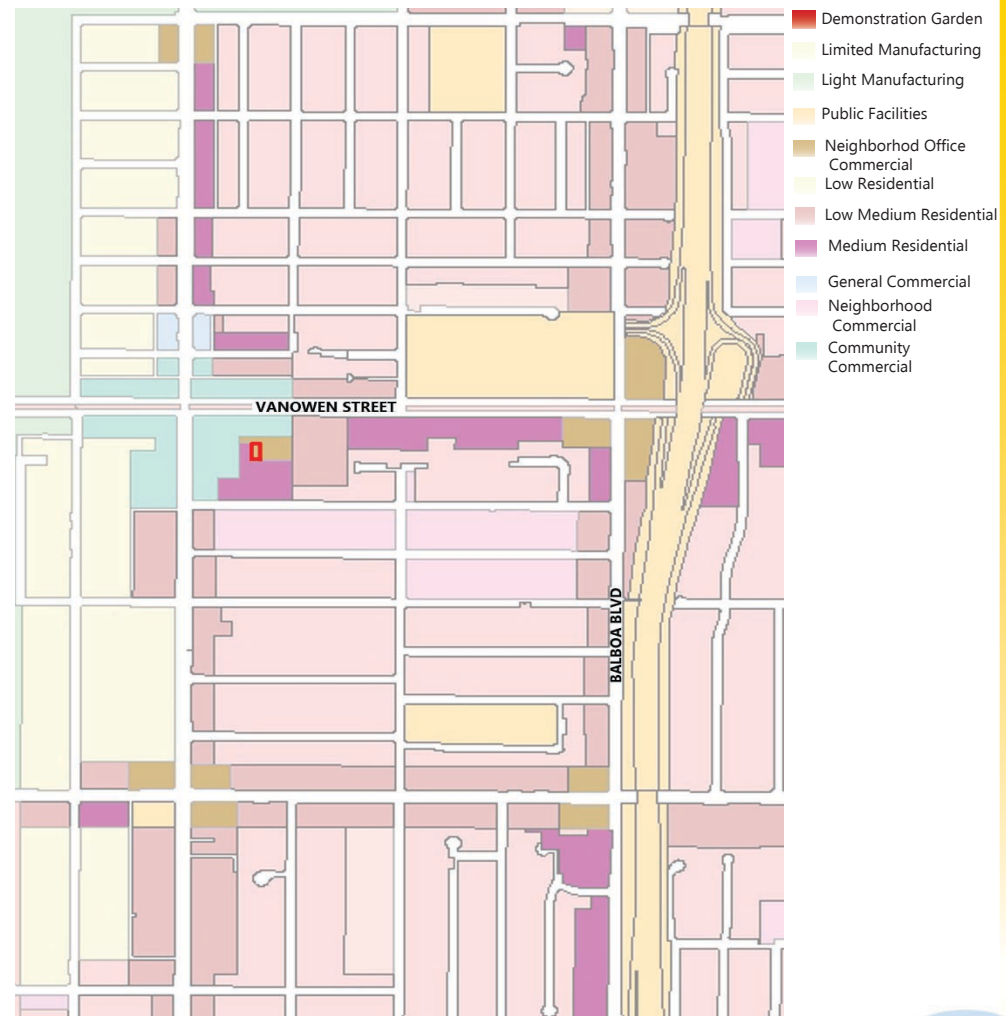
Garden Participant Demographics



The demonstration garden serves the Hispanic underprivileged community of Van Nuys. The population of Van Nuys is 60.5 % Hispanic with the highest income in the range of \$20,000 to \$40,000 (Los Angeles Department of City Planning, 2013). In terms of the garden, most of the participants are Hispanic and from Mexican origin.

# Land Use

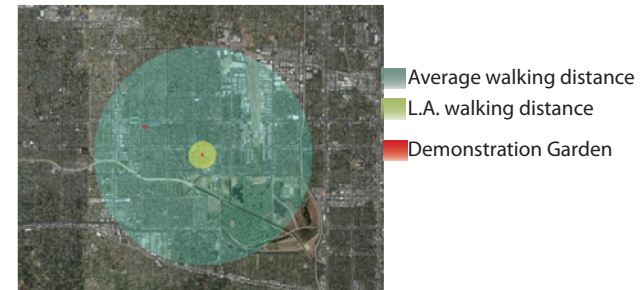
When looking at the surrounding land use of the area (See Figure 3.3), it is easy to see the deprivation that the Hispanic community has of urban agriculture areas. Several commercial areas take their place along with fast food restaurants (Del Taco, Mc Donald's, and Jack at the Box.) which are located in the intersections of Vanowen Street and Balboa Blvd.



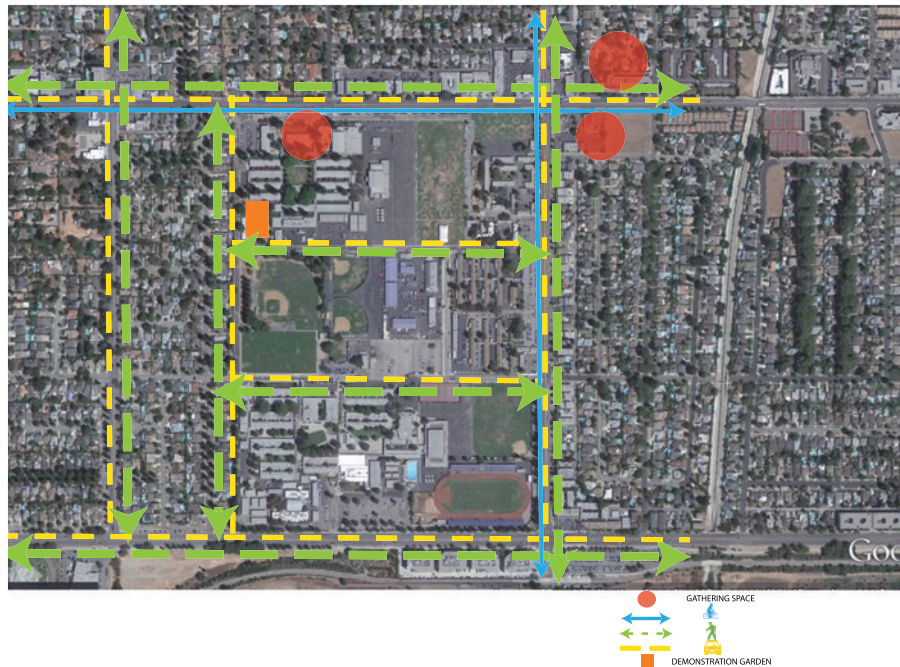
3.3 Land Use

# Circulation

The lack of green space decreases the amount of physical activity in participants. It is known that the average walking distance that people are willing to walk to a park or urban farm is 2 miles; however in Los Angeles(See Figure 3.4) the walking distance has decreased to  $\frac{1}{4}$  a mile (Wolch and Wilson 2002).



3.4 Willing To Walk



3.5 Circulation Diagram

The circulation diagram (See Figure 3.5) shows that the main mode of transportation are automobiles. There are only a few people walking, but this occurs during peak hours which, are in the morning and afternoon when children enter and get out of school.



# Street Context

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The uninviting feeling that the streets provide also adds to the decrease in physical activity (See Figure 3.6-3.11). Pedestrians lack crosswalks in the main school crossing zones. According to Mulholland Middle School Parent Coordinator Elizabeth Contreras, there has been an increase in reckless behavior in the area (Contreras, 2013). From January 1, 2013 to March 17 2013, in a 2 mile radius of the demonstration garden, there have been 245 crimes reported to the LAPD with 84 being vehicle break in and 46 being burglary (Los Angeles Police Department, 2013). There is also a lack of trees and shade in these streets. Based on the site analysis, we are able to see the difficulty that residents might have in modifying their habits towards a better lifestyle.



# Street Existing Conditions



3.6 Street 1



3.7 Street 2



3.8 Street 3



3.9 Street 4



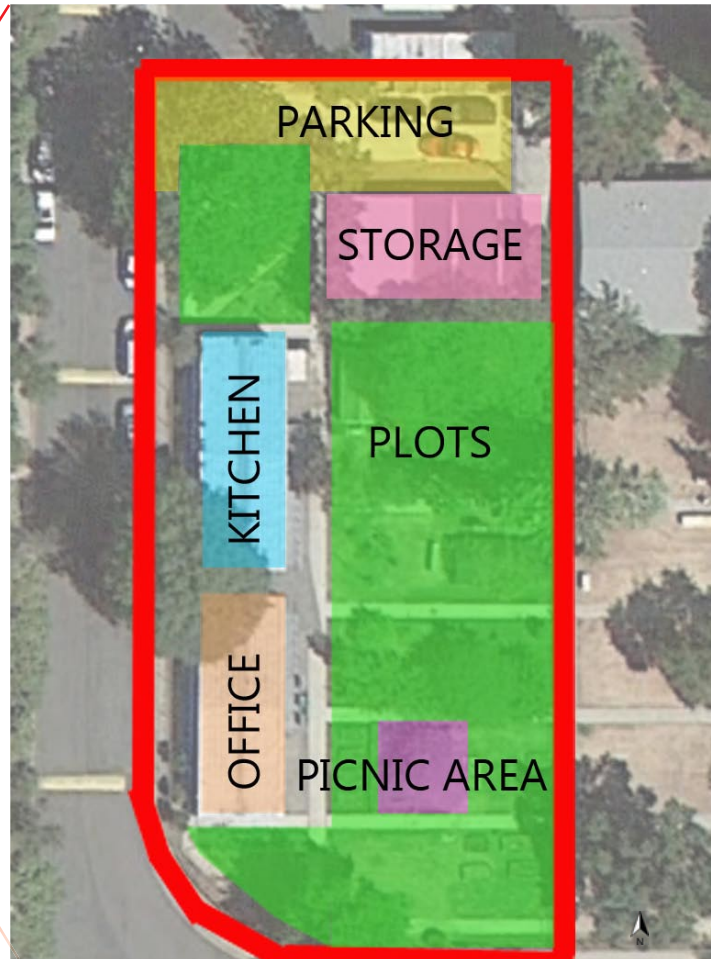
3.10 Street 4.2



3.11 Street 5

# Existing Conditions

3.12 Key Plan



3.13 Existing Conditions Diagram



3.14 Compost Area



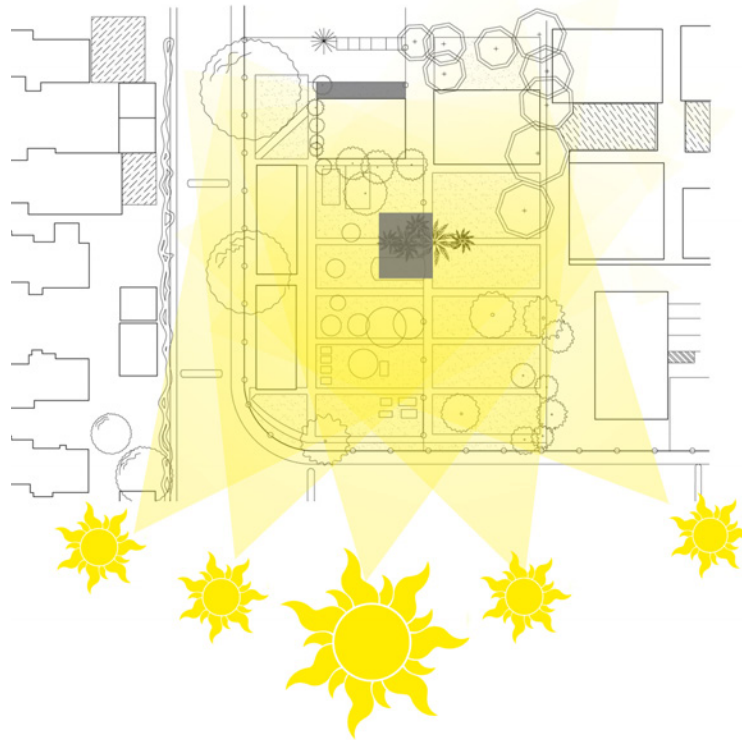
3.15 Existing Picnic Area



3.16 Mural

# Garden Observation

Currently, the garden itself is minimally designed to involve children and poorly designed for the older generation. The garden has minimal shading (See Figure 3.17), a lack of picnic benches(See Figure 3.15), no aesthetic appeal (See Figure 3.16), and there are areas in the garden not being used (See Figure 3.14). It is hidden from view and lacks parking spaces. According to Titman, children look at [a site] and perceive the site in terms of how much adults care for them. For instance, if schools grounds are not managed properly, then children will see themselves as not being cared for and not having a large role in society (Titman, 1994). By not providing proper amenities, they are decreasing the enthusiasm of a child to participate in the garden.



3.17 Sun and Shade Diagram

# Opportunities & Constraints

The demonstration garden has several opportunities and constraints. Seeing how it is difficult to find the garden, this offers the opportunity to provide better wayfinding techniques. The streets could offer a greenway implementation as a form of connection and recreation. The garden has existing materials (See Figure 3.18) that could be reused to form a new element in the redesigned plan. A constraint is that the size of the street south of Birmingham High School is not large enough to implement a 2 way bike lane. Cars as well pass through the main street leading to the garden making it impossible to design a pedestrian only street. Another constraint for the garden is that there are existing mature trees that would not be able to be removed to follow the theme. The garden is also gated (See Figure 3.19), allowing an individual to visit the garden only during certain times of the day.



3.18 Existing material



3.19 Surrounding Fence





**Design**



# The Network Greenway Masterplan

The goal for The Network Greenway

Master Plan is to create a greenway that would integrate physical activity and serve as a wayfinding mode to the Network for a Healthy California Demonstration Garden. These objectives are due to the lack of people exercising and the garden hidden from view. In the survey taken of the partici-

## Masterplan Goals

EASY TO FIND THE GARDEN?



4.1 Feasibility in walking

pants in the garden, when asked if it was easy to find the garden and if so how did they find it, many responded that it was not easy to find the garden and that a person (parent coordinator) helped them (See Figure 4.1). However, let us say that a user did not know this person, how else would they find the garden? Others responded that they found the garden through vegetation and directions. Taking this into consideration brought the idea that the greenway, through vegetation and signage, could lead to the garden. As well, the master plan implements the goal of the network to encourage physical activity. This would be completed through achieving a more inviting feeling by the shading of the trees and the implementation of bicycle lanes of the color of the network and safer crosswalks.



# The Network Greenway Masterplan

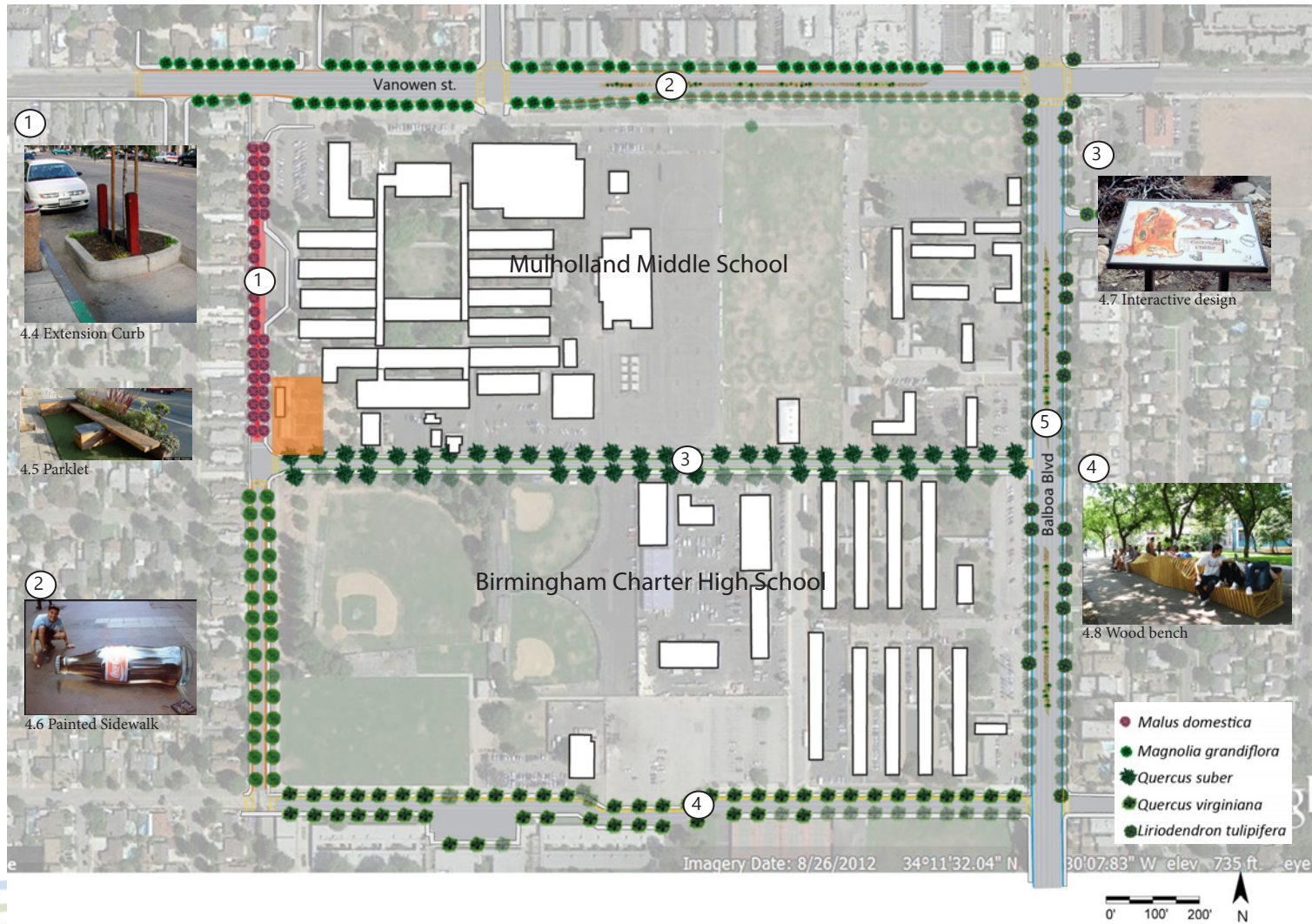
## Overall Design

The Master plan consists of schematically redesigning 5 streets. All streets will emphasize the idea of learning by discovering, which is also being implemented into the demonstration garden design. Seeing how the garden will integrate different age groups of children, to connect the greenway to the garden, the greenway will also take into consideration the different age groups. In terms of the vegetation as a wayfinding technique, evergreen trees would be planted along the paths leading to the main garden street. Along the main garden street the trees would switch to apple trees (*Malus domestica*) orchards emphasizing the garden.



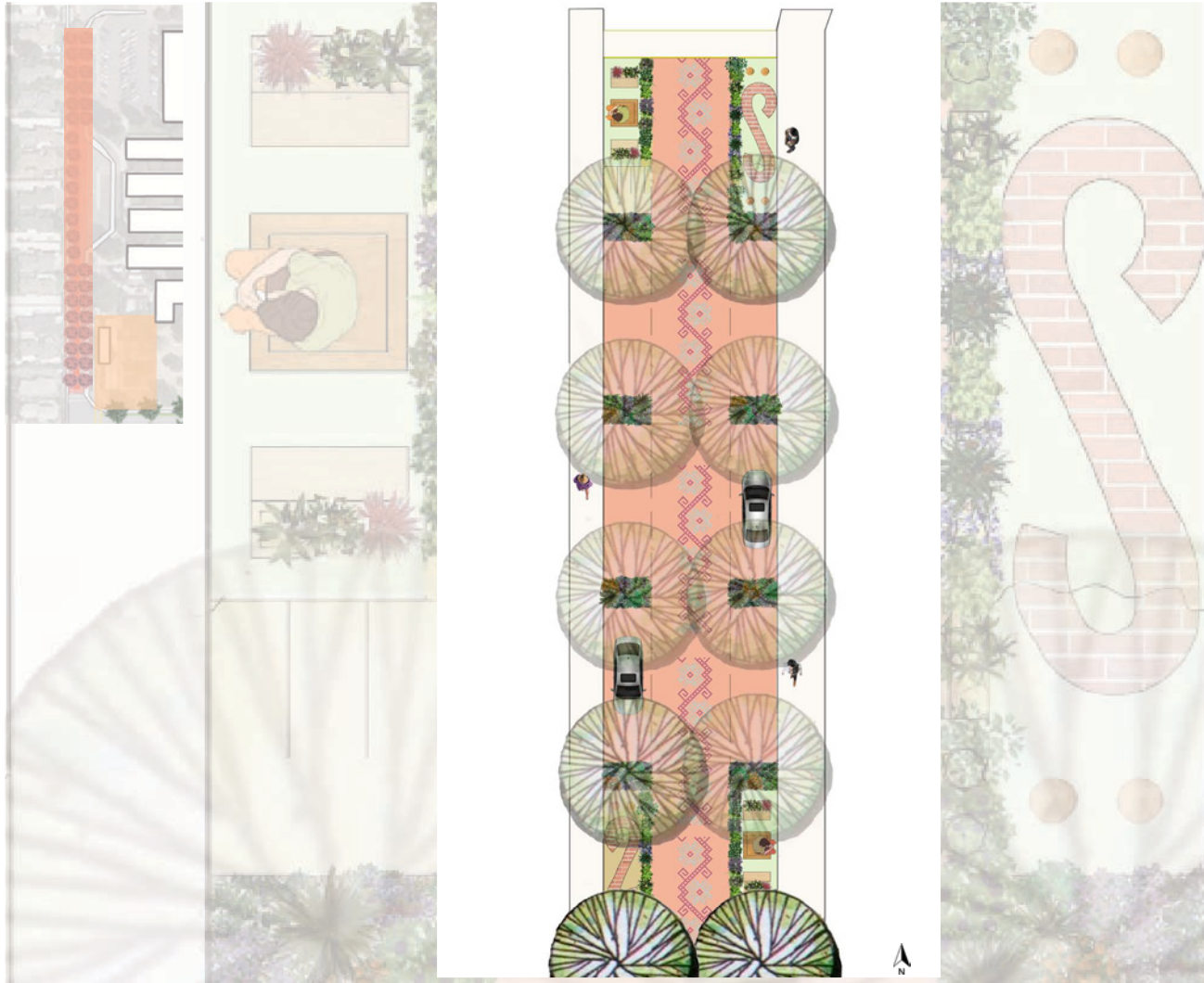
4.2 Greenway Goals

# The Network Greenway Masterplan



# The Network Greenway Masterplan

## ① Street 1

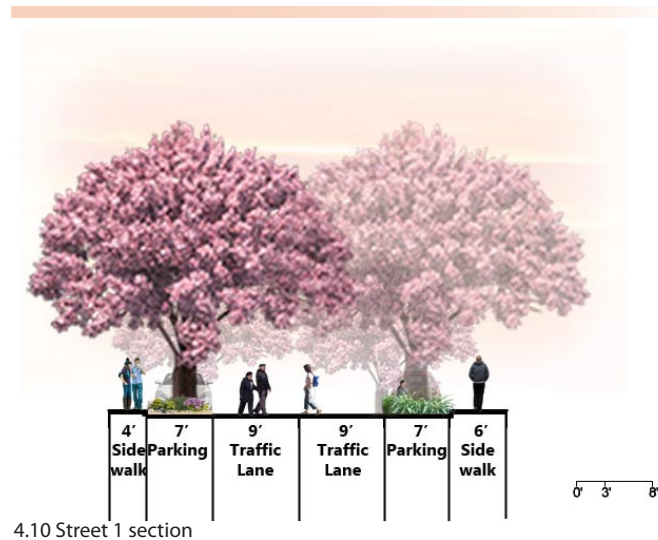
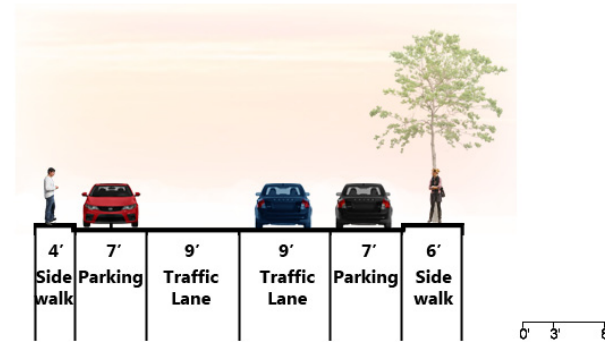


4.9 Street 1 Detail

# The Network Greenway Masterplan

## ① Street 1

Street 1 is the main street “gateway” to the garden and would emphasize the Network for a Healthy California using orchard trees as a symbol of the garden and as a way of discovery distinct from the regular trees planted in the other streets (See Figure 4.9). The size of the sidewalk is minimal, and only open to pedestrian walking, trees would not be planted in the sidewalk but, extension curbs would be implemented. To emphasize the idea of community parklets will be used allowing for increased socialization. This part of the trail would also emphasize physical activity by providing safe zones and having bike racks in the parklet. To make passing cars slow down red asphalt would be installed, showing that the street is a pedestrian zone. To implement the cultural element seen in the garden, an embroidery design would be engraved in the pavement.



4.10 Street 1 section

# The Network Greenway Masterplan

## ② Street 2

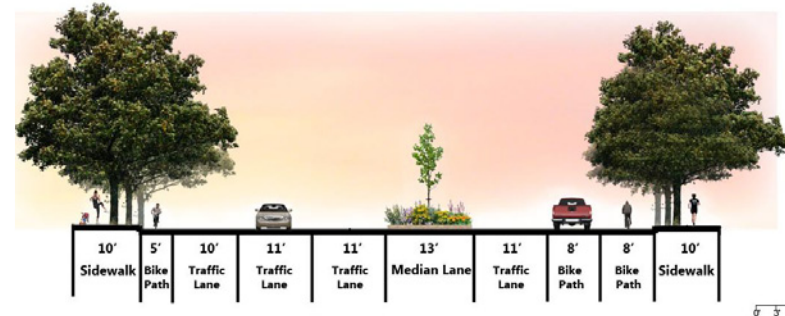
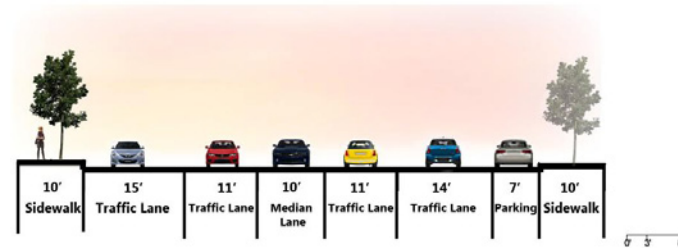


4.11 Street 2 detail

# The Network Greenway Masterplan

## ② Street 2

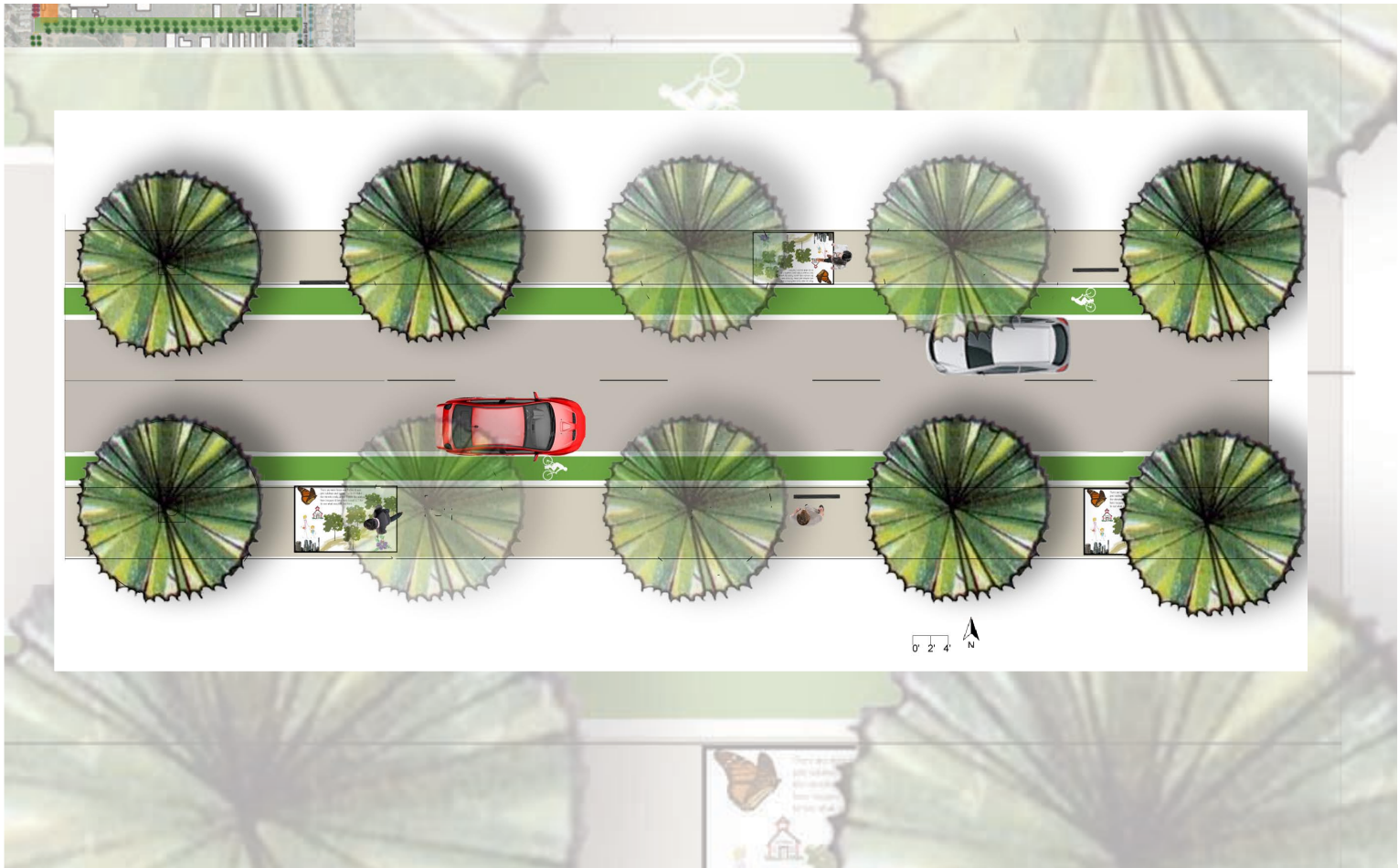
Street 2 is Vanowen St. This street is close to the community section so, it will emphasize children from preschool to elementary (See Figure 4.11). From research seeing how young children like to see color, an orange, a soft drink, and a candy will be painted in the pavement. The only one with vivid colors will be the orange. Going towards street 1, the soft drink and candy will start fading leaving the orange only. Thereby, an individual would discover that it would be more beneficial to eat something healthy. To implement safety, there would be pedestrian crossings and the traffic lanes would be decreased to implement an orange bike path. A center island would be designed to add to the amenity of the street.



4.12 Street 2 section

# The Network Greenway Masterplan

## ③ Street 3

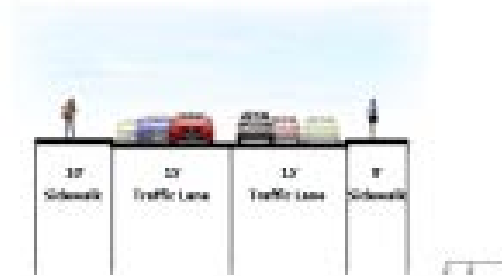


4.13 Street 2 detail

# The Network Greenway Masterplan

## ③ Street 3

Street 3 is a cross road close to Mulholland Middle School. Thereby, would emphasize middle school ages (See Figure 4.13). This age group of children have the capacity to learn. Similar to the Children’s Forest Nature Walk, signs would be implemented. For the signs students will make observations of their surroundings with the possibility of discovering something that they did not know about their environment. Since the master plan will occur in phases, these signs will have a sequence of a changing story. The story will tell the start of a greenway, up to when it is implemented. This road will also contain a green bike path along with crosswalks



4.14 Street 3 section



# The Network Greenway Masterplan

## ④ Street 4

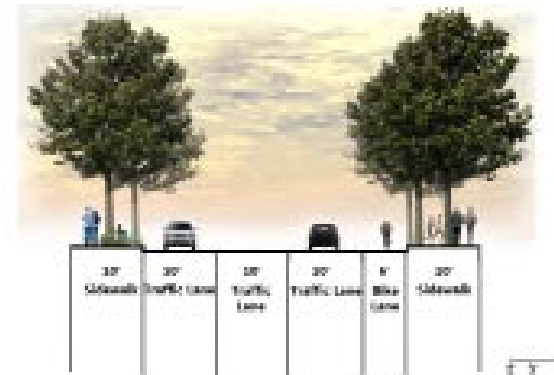


4.15 Street 4 detail

# The Network Greenway Masterplan

## ④ Street 4

Street 4 is a cross street close to the existing high school. Therefore, older children along with adults will be emphasized (See Figure 4.15). High school children, as seen from the survey, like to “hang out”. Both adults and children saw culture as being important. Existing on this pathway are some medal blue benches, adding no shade or appeal. Thereby, in this street, older children will be provided with seating to offer socialization but this seating will emphasize culture and discovery. The seats are going to mimic baskets (baskets are often times use as a form of carrying fruit) and be hidden. A person would not be able to see the seats unless they walk the trail. A yellow bike path will also be implemented.



4.16 Street 4 section

# The Network Greenway Masterplan

## ⑤ Street 5



4.17 Street 5 detail

# The Network Greenway Masterplan

## ⑤ Street 5

Street 5 is Balboa Blvd. Balboa Blvd. is a large intersection street that will emphasize the community (See Figure 4.17). This street intersects street 2-4 so will be left with just trees. The reason for this is because a person will use this street as a way to discover the other streets. In a sense, the street mimics the idea that a community can help a child find the right path. However, to encourage exercising, a blue bike path will be added. A center island will offer a greater opportunity for safety and reduce heavy traffic seen during school hours.



4.18 Street 5 section

# Demonstration Garden Site Design

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## Goals

The goal of the garden site design was to create a garden that would be suitable for children (of varying ages) and allow a child to learn through discovery. In this sense they would be discovering the benefits of having community gardens and eating healthy. The concept of discovery came with the idea that children like to wonder and thereby feel a sense of trust bestowed on them. They feel significant in society. The way that the discovery theme is going to be displayed is by having paths that curve and allow for wandering. These paths are going to lead a participant to the main elements in the garden which, are going to be situated in "outdoor rooms". The garden design will also integrate the community as they play a major role in the change of a healthy lifestyle.



# Demonstration Garden Site Design

## Findings

REASONS FOR COMING TO THE GARDEN



4.19 Reasos for coming to the garden

Feelings



4.20 Feelings in the garden

In order to form a design, I took into consideration the community meetings. From the survey results, I learned that individuals mainly come to the garden to help and learn. Thereby by implementing various ages in the design we allow, similar to the GEO Academy Garden and Garden Mosaics, older generations to help the younger ones learn. The garden provides them with a sense of peace and empowerment.

# Demonstration Garden Site Design

## Findings

GREENHOUSE



STAGE/AMPHITHEATER



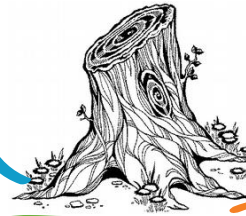
COMPOST BINS



FARMSTAND



"BECAUSE ITS MORE NATURAL"



HAND WASHING STATION



OUTDOOR KITCHEN



"WE LIKE THE COLORS"

STORAGE



PICNIC TABLES



### 4.21 Materials Chosen

Through the pathways and elements, I took into consideration the idea that participants preferred natural materials that blend into the landscape while others liked bright colors that will attract children.

# Demonstration Garden Site Design

From my meetings with the participants, I took into consideration various ideas such an outdoor kitchen, a workshop area, a tepee etc.



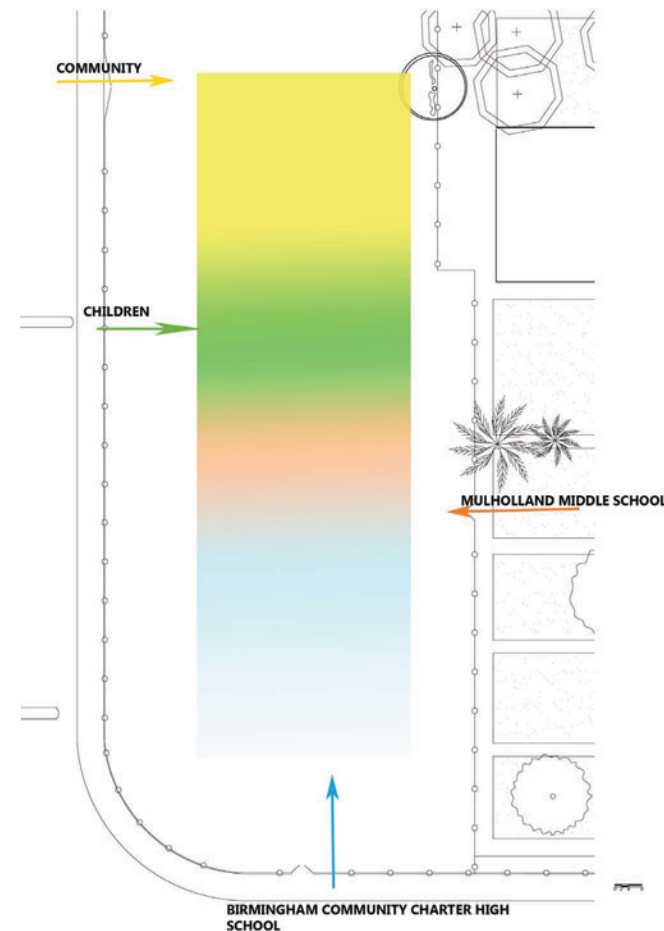
4.22 Word Diagram



# Demonstration Garden Site Design

## Concept

For the site design, based on the surrounding area, I was able to create a “gradient” of age groups. Towards the north of the site you have the existing main entrance where the community usually enters. This community (yellow) usually brings their children, forming the second color of the gradient (green). Towards the right of the site you have Mulholland Middle School. Middle school students usually will enter through this entrance forming the third color, orange, and second entrance to the garden. Towards the south of the site you have Birmingham Charter High School. This allows us to form a third entrance emphasizing high school students and adults making the final color, blue, of the gradient. By having the gradient we allow each section to transition to the next.



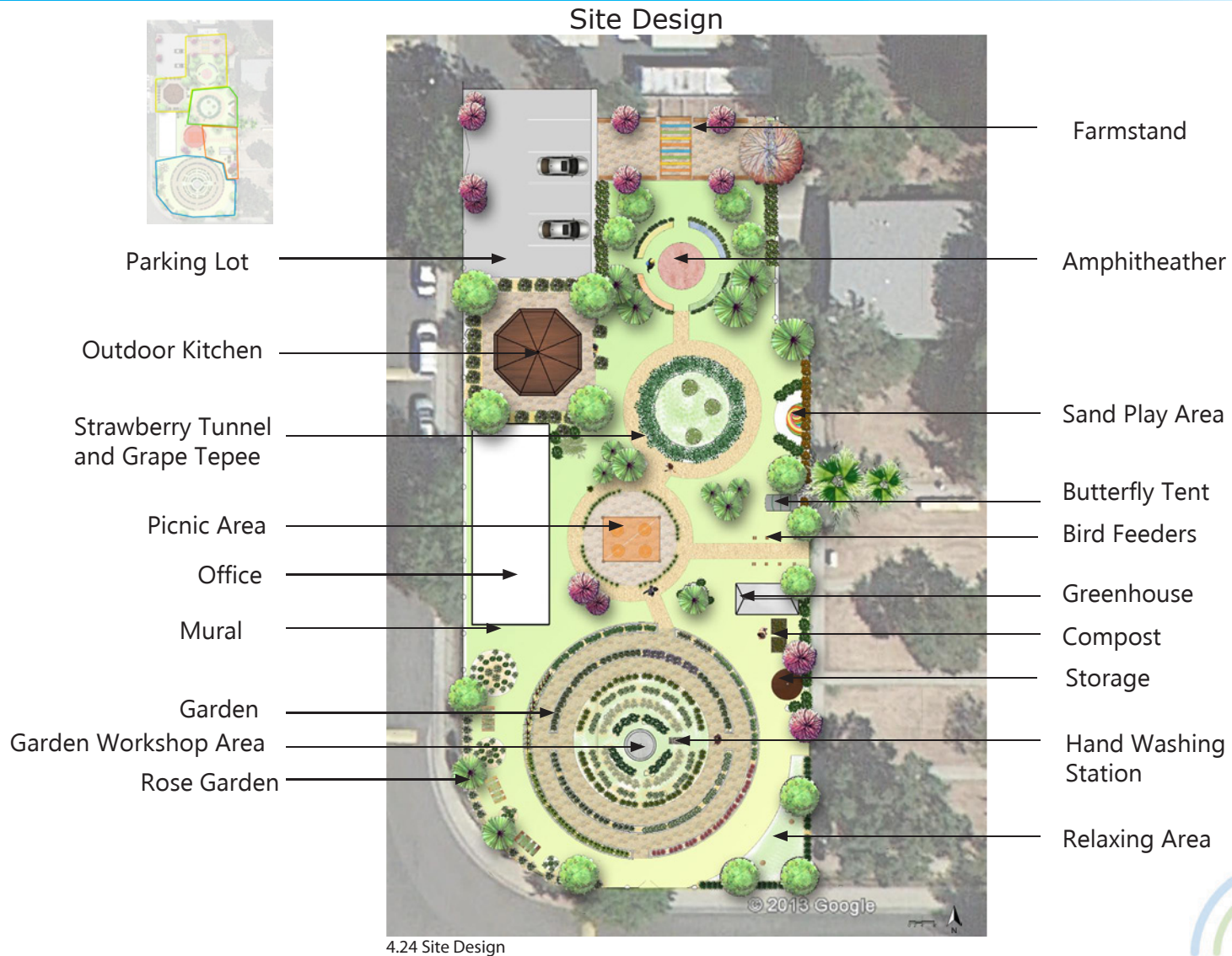
4.23 Garden Gradient

# Demonstration Garden Site Design

## Site Design

As you enter the site from the north you find the community section being displayed through a farm stand, an amphitheater, and an outdoor kitchen (See Figure 4.23). You keep walking down and get to the children section. Young children enjoy playing, so placed here is a kid play area with grape teepees and strawberry tunnels. Towards the right is a sand play area mimicking different soils through color (participants mentioned that children like playing with dirt). Moving south on the site you get to the 2nd entrance which brings us to the middle school section. During this time children are more willing and able to learn. Thereby, you have bird houses, a butterfly tent, a greenhouse, a compost area, and a shelter. Moving south you get to the high school and older generation section. Children during this time want to be with their friends but are also able to work. Therefore, you have the garden with a workshop area in the south center and a relaxation area in the south east. Towards the south west, there is an emphasis on culture. A rose garden with trellises was designed as older participants wanted roses. From my interaction, with some of the participants, I learned that several of them wanted to go to college and study a major related to art. Therefore, you also have a mural painted. As well, the culture of the site could be seen with engraved embroidery in some structures, "papel picado" banners (in the culture, as a form of art, "papel picado" could be used in the pathways), and vegetation such as guava and chiles. As could be seen, several of these elements can transition to other age groups giving way to closer interaction between these groups. The picnic area in the center ties all sections together. This allows the different sections too keep their space but still congregate as a community.

# Demonstration Garden Site Design



# Demonstration Garden Site Design

## Main Entrance



4.25 Perspective 1: Main Entrance

# Demonstration Garden Site Design

## Amphitheater



4.26 Perspective: Amphitheater

# Demonstration Garden Site Design

## Outdoor Kitchen



4.27 Perspective 3: Outdoor Kitchen

# Demonstration Garden Site Design

## Kid Play Area



4.28 Perspective 4: Kid Play Area

# Demonstration Garden Site Design

## Entrance 2



4.29 Perspective 5: Entrance 2



# Demonstration Garden Site Design

## Mural and Garden



4.30 Perspective 6: Mural and Garden





# Conclusion



# Conclusion

In designing the greenway and demonstration garden, I came to the conclusion that there are possibilities for change in the health of the urban community with emphasis in children. Individuals enjoy being part of a large collaboration effort to aid in finding a solution to a problem. In designing a greenway that offers amenities for physical activity and way finding, it is right to say that people will use the site if it is safe and adds to the beautification effort of their community. In terms of the demonstration garden, children and the community will participate in the garden if they feel the project has captured their interest. Many times this means that the community, as in this project, would be part of the design process. This could include taking part in charettes, activities related to the garden, etc. Children, being the central role of this project, will have fun tying the greenway and garden to the discovery idea

Seeing how the community was able to gather, at a small scale project, to change the future for younger generations, it is possible to work with communities at a larger scale to finally reduce the amount of cardiac problems. The reason for the motivation of the community is to achieve the well-being of children. Thereby, children become the core role in obtaining a new pattern of change to a better lifestyle.

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# Appendix

## Questionnaire Example

University of California, Davis  
Landscape Architecture  
Questionnaire/ Encuesta

- 1) **Description:** As a landscape architecture student, I feel the garden needs more child involvement. Therefore, for my sr. project I have chosen to redesign the garden as a more inviting place for children. However, before completing a design it is always important to listen to the community's ideas. Thus, the purpose of the survey is to hear your opinion, and integrate your ideas into the design as it will make the design a more successful project.  
**Descripción:** Como una estudiante de arquitectura de los paisajes pienso que el jardín necesita más participación de los niños. Por esta razón, para mi proyecto final he decidido rediseñar el jardín para hacerlo un espacio más atractivo para los niños. Antes de hacer un diseño es importante escuchar las opiniones de la comunidad. Entonces, el motivo de la encuesta es escuchar sus opiniones e integrarlas en el diseño. Solo así el proyecto se hará más exitoso.
- 2) **Ethnicity/ Etnicidad** \_\_\_\_\_ **Gender/Sexo** \_\_\_\_\_ **Age/ Edad** \_\_\_\_\_
- 3) **What is your favorite space in the garden and why?**  
¿Cuál es su favorito lugar en el jardín y porque?
- 4) **What do you feel when being in the garden?**  
¿Qué siente cuando está en el jardín?
- 5) **Why did you come to the garden?**  
¿Porque vino al jardín?
- 6) **Was it easy to find the garden the first time you came? What helped you find it?**  
¿Era fácil encontrar el jardín, la primera vez que vino? ¿Qué le ayudo a encontrarlo?
- 7) **What is your favorite fruit and vegetable?**  
¿Qué es su favorita fruta y su favorito vegetal?
- 8) **If you have children, do you bring them often and what are their ages?**  
¿Si tiene hijos los trae de vez en cuando al jardín? ¿Cuáles son sus edades?
- 9) **What do you see children like about the garden?**  
¿Que ve que le guste a un niño del jardín?
- 10) **Do you like teaching children?**  
¿Le gusta enseñarle a los niños?
- 11) **If you were to design the garden for kids, what would you place in the garden?**  
¿Si fuera a diseñar el jardín para niños, que cosa pondría en el jardín?
- 12) **Any other comments?** ¿Otros comentarios?





# Appendix

## Material Charette Work



