

Ricardo Lara Linear Park Methods

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This investigation was conducted as part of the Landscape Architecture Foundation's 2021 *Case Study Investigation* (CSI) program. CSI matches faculty-student research teams with design practitioners to document the benefits of exemplary high-performing landscape projects. Teams develop methods to quantify environmental, social, and economic benefits and produce Case Study Briefs for LAF's *Landscape Performance Series*.

To cite:

Claire Latané, José Guadalupe Gutierrez, and José Luis Reynoso. "Ricardo Lara Park Methods" *Landscape Performance Series*, Landscape Architecture Foundation, 2021.
<https://doi.org/10.31353/cs1791>

The full case study can be found at: <https://landscapeperformance.org/case-study-briefs/ricardo-lara-park>

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Acknowledgements

We would like to thank:

George Kutnar, for his thorough research through archived construction documents to find the information critical to our study;

Jonah Susskind, for mentoring us on research strategies and helping hone our approaches to using technical equipment for monitoring the site;

Ying-yu Hung for sharing her experiences and memory of the design and documentation processes for Ricardo Lara Park;

Andrew Gressett for teaching us his sound mapping techniques;

Sarah Fisher, for training us in ecological census techniques and guiding our first observation walk;

Jessie Salazar and Brenda Rivera, our two fantastic Lynwood community leaders who helped us distribute surveys and shared their personal thoughts about the park;

Megan Barnes, for expertly and warmly guiding us through this deep and meaningful process. It was new to all of us, and an experience we will never forget!

And to the Landscape Architecture Foundation for continuing to support research and transformational leadership in landscape architecture.

Research Strategy

This case study was performed from March through August 2021. Several factors unique to our time, place, and research team drove our selection and methods of data collection and analysis. First was the unprecedented and unpredictable context of the COVID-19 pandemic. We didn't know when we started whether the park would remain open during our research, and to what extent the pandemic changed people's behavior in the park. Second was that our Southern California Mediterranean climate would be past its rainy season, leaving little opportunity to collect water samples or observe rainwater capture and stormwater treatment in action. Third, our research team included José Gutierrez, who had acted as a community organizer during the park's design phase, giving him special insight and connection to the community and its

concerns. And fourth, our partner firm SWA Group had its own research team and special equipment that we would not have otherwise had access to.

Environmental Benefits

- ***Provides habitat for at least 9 native birds observed on-site, such as California towhee and bushtits, and at least 5 native and introduced insects and pollinators observed such as the harlequin bug.***

Background:

Prior to the park's opening, the site was made up of one mile of vacant lots offering no habitat value. The introduction of thousands of square feet of Southern California native plants resulted in an increased presence of native birds and pollinators on the site and in the neighborhood. To assess the change in habitat, we consulted Sarah Fisher, a wildlife biologist and member of the 2021 Cal Poly Pomona MLA cohort, who provided a simple training on wildlife observation. On our first wildlife observation walk, we spotted numerous birds and pollinators, including hummingbirds and bees feasting on sages and lavenders and monarch butterflies flying around the butterfly bushes. Sarah indicated that Ricardo Lara Park was functioning as a new habitat space for local birds, pollinators, and insects. She pointed out that the presence of bushtits and California towhees as a clear sign of habitat development, as these native birds rely on the presence of native insects for their diet. Sarah made a similar observation about the bladderpod, a Southern California native plant. Their presence attracted harlequin bugs, a common pest for crops in some contexts, but a local insect in a city park that can spend its whole life on one bladderpod plant (National Park Service).

Method:

To get a sense of what types of wildlife the team might see at Ricardo Lara Park during this time of the year, Sarah recommended we use iNaturalist to identify species seen in nearby parks before our site visit. Once on-site, the research team used the listing method of wildlife observation to assess whether the park had increased habitat for native birds and pollinators (Fisher, Sutherland). Listing involves taking note of the types of birds and insects seen while walking around the park. The great appeal of the listing method is its simplicity. Counts of individuals are not needed, allowing more time to be spent on identification, which is particularly valuable for inexperienced observers in species-rich habitats. It provides a simple measure of relative abundance, allowing indices to be compared between species and sites.

The research team brought a field guide and a pair of binoculars as well as a notebook and pens to document the different wildlife we observed, and a digital camera to capture photos of birds from a far enough distance not to startle them away.

Following Sarah's recommendation for the best time to spot birds, the research team arrived at 6:00 am for two days of wildlife observation. The first visit was on Tuesday June 8th, guided by Sarah. The second visit was done by the research assistants on Tuesday June 22nd. Both

times the research team walked the whole length of the park at a slow pace to take time and observe wildlife. Occasional stops were made to take photos of birds from a long distance. Each time wildlife was spotted the team took note of the species. Since the research assistants were new to birding, using methods like sketching, taking notes, and taking photos when possible helped identify them after the walk.

Calculations:

List - Observed Birds

American Goldfinch - *Spinus tristis* (Native)

Bushtit - *Psaltiriparus minimus* (Native)

Black Phoebe - *Sayornis nigricans* (Native)

Kingbird - *Tyrannus tyrannus* (Native)

California Towhee - *Melospiza crissalis* (Native)

Northern Rough-winged Swallow - *Stelgidopteryx serripennis* (Native)

Anna's Hummingbird - *Calypte anna* (Native)

Rufous or Allen's Hummingbird - *Selasphorus rufus* or *Selasphorus sasin* (Native)

House Finch - *Carpodacus mexicanus* (Native)

House Sparrow - *Passer domesticus* (Introduced)

List - Observed Insects

Monarch Butterfly - *Danaus plexippus* (Native)

Western Fence Lizard - *Sceloporus occidentalis* (Native)

Harlequin Bugs - *Murgantia histrionica* (Native)

Western Honey Bee - *Apis mellifera* (Introduced)

Cabbage White Butterfly - *Pieris rapae* (Introduced)

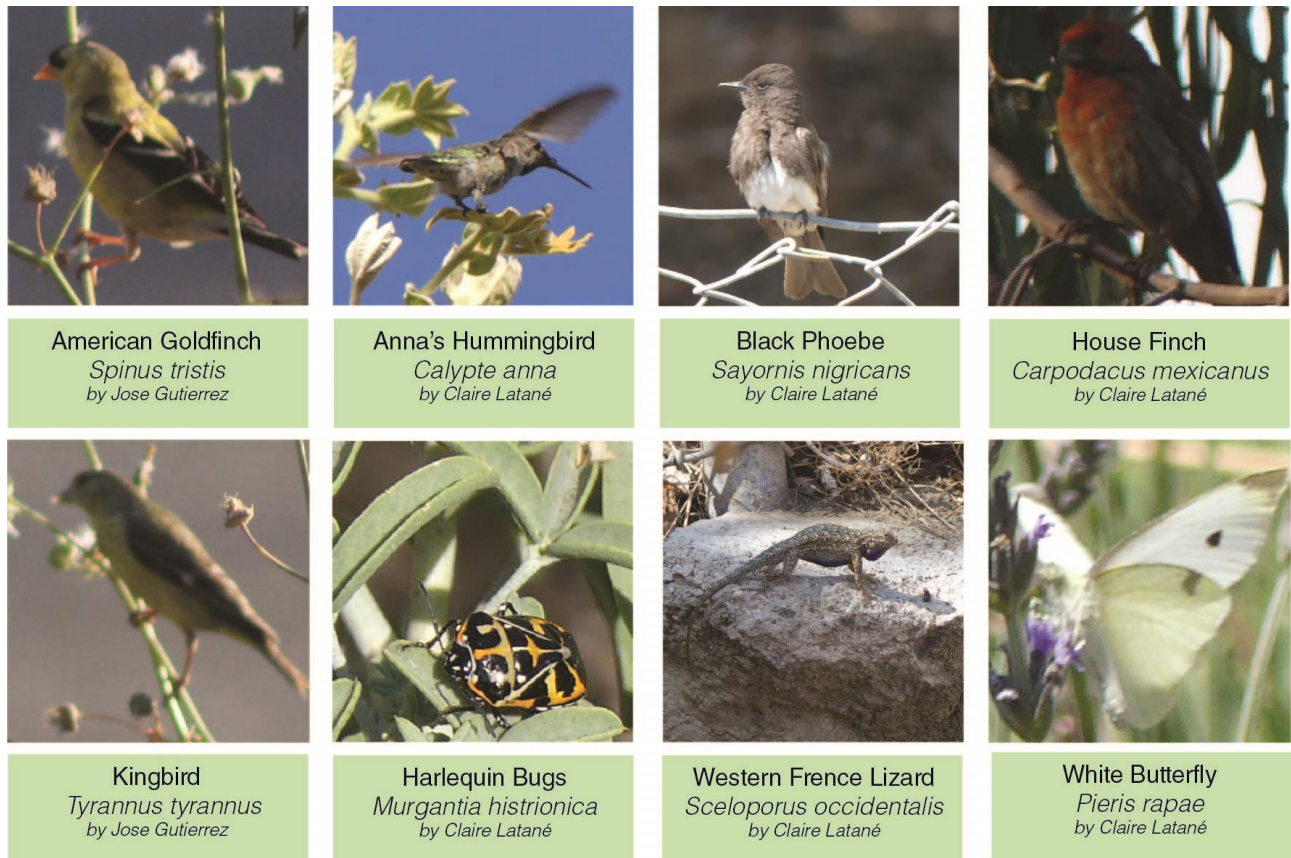


Figure 1: Native wildlife found in Ricardo Lara Park

Sources:

Fisher, Sarah. 2021. Interview with research team. June 8, 2021.

iNaturalist. Accessed July 18, 2021.

National Park Service. "It's Not A Beetle But A True Bug." *Cabrillo Field Notes*. Accessed July 29, 2021. <https://www.nps.gov/cabr/blogs/it-s-not-a-beetle-but-a-true-bug.htm>

Sibley, David Allen. 2003. *The Sibley Field Guide to Birds of Western North America*. Knopf.

Sutherland, William J. Editor. 2006. *Ecological Census Techniques 2ed: A Handbook*. Cambridge University Press.

Limitations:

- Due to the time frame of the field observations (early June through early July) the team missed most of the spring migration season and the entire fall migration season. Other than the Northern Rough-Winged Swallow, findings were limited to resident birds—birds that don't migrate.
- Lack of experience limited our ability to more closely document wildlife.

- ***Reduces surface temperatures by 0-47°F in the sun and 2-34°F in the shade as compared to an asphalt parking lot that resembles the site prior to construction.***

Background: Research from 2020 on urban heat islands in communities of color has found that redlined neighborhoods, historically subjected to racially discriminatory planning practices, record temperatures that are up to 5 degrees warmer than predominantly White non-redlined neighborhoods. These heat disparities result from the absence of trees and other green infrastructure that cool streets and are indispensable in the fight against climate change. Prior to the park's construction, the site was made up of a mile of asphalt road and barren dirt lots. Ricardo Lara Park introduced numerous trees that provide shade both along Fernwood Avenue and the park's concrete walkway, grass and mulched planters, and special surfaces such as an architectural concrete paving system (Lithocrete).

Method: Research assistants used Seek Thermal camera temperature monitors to obtain thermal readings of different surface materials across the park (concrete, lithocrete floor, rubber surfacing, planters with mulch). Research Assistants compared surface temperatures of exposed surfaces to those under tree shade or in proximity to shrubs. Research Assistants visited the park three times a day on Tuesday, June 22 and Saturday June 26 to take temperature readings of surface materials across the park.

The visit times were as follows:

Morning: 10:00 am. The research team captured temperature readings during the transitional period of temperatures between early morning and early afternoon. Early in the morning, surface temperatures are at their coolest.

Afternoon: 3:00 pm. Research team captured temperature readings during the peak heat hours of the afternoon.

Evening: 6:30 pm Research team captured temperature readings during the early evening hours, to better understand which surface materials retain heat the longest.

Seek Thermal cameras were used to capture temperature readings of different surfaces in the park in sunny and shady conditions, including:

- Concrete walkway
- Lithocrete paving
- Rubber surfacing
- Metal benches
- Mulched planters
- Mosaic Seating
- Asphalt parking lot (used as the "before" or comparison condition)

Calculations:

Table 1: Surfaces Temperatures in Full Sun

	Morning - 10:00 am	Afternoon 3:00 pm	Temperature difference (Afternoon, compared to Asphalt "before")	Evening 6:00pm
Asphalt ("before")	113 °F	135 °F	N/A	99 °F
Concrete	97 °F	119 °F	-16 °F	99 °F
Lithocrete Paving	85 °F	88.5 °F	-46.5 °F	80 °F
Rubber Surface	120 °F	135 °F	0 °F	85 °F
Metal Benches	111 °F	118 °F	-17 °F	85 °F
Mosaic Seating	80 °F	100 °F	-35 °F	85 °F
Mulched Planters	106 °F	90 °F	- 45°F	78 °F

Table 2: Surface Temperatures in Shade

	Morning - 10:00 am	Afternoon 3:00 pm	Temperature difference (Afternoon, compared to Asphalt "before")	Evening 6:00 pm
Asphalt ("before")	90 °F	100.5°F	N/A	90 °F
Concrete	75 °F	76.5 °F	-24 °F	82 °F
Lithocrete Paving	69 °F	72 °F	-33.5 °F	78 °F
Rubber Surface	74 °F	82.5 °F	- 18°F	85 °F
Metal Benches	85 °F	89 °F	- 11.5°F	80 °F
Mosaic Seating	70 °F	70 °F	- 30.5°F	78 °F
Mulched Planters	72 °F	99 °F	-1.5 °F	70 °F

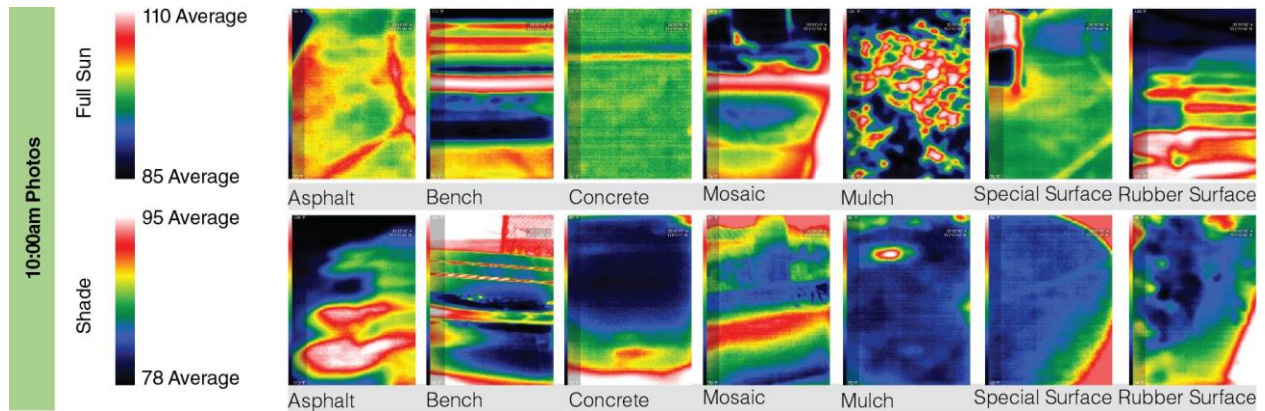


Figure 2: Thermal imaging of surface temperatures taken at 10:00 am

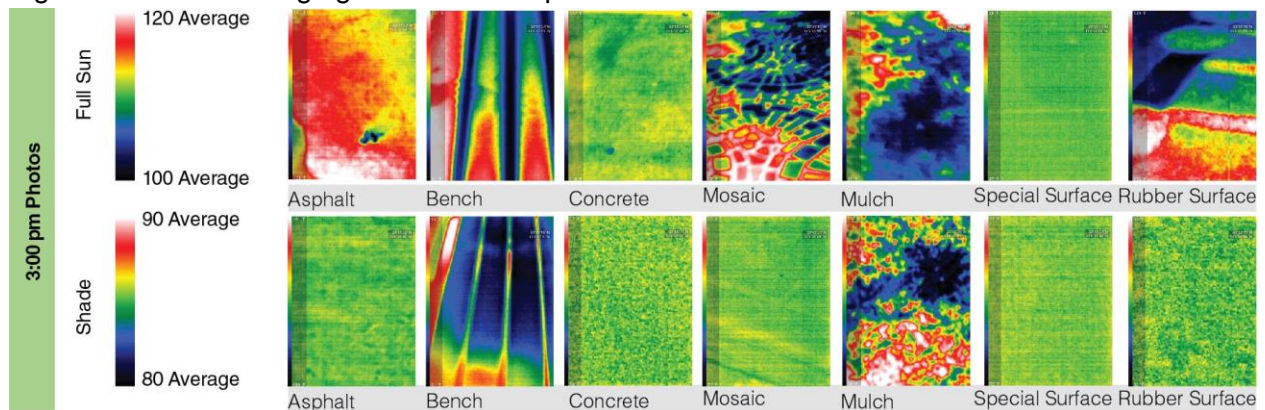


Figure 3: Thermal imaging of surface temperatures taken at 3:00 pm

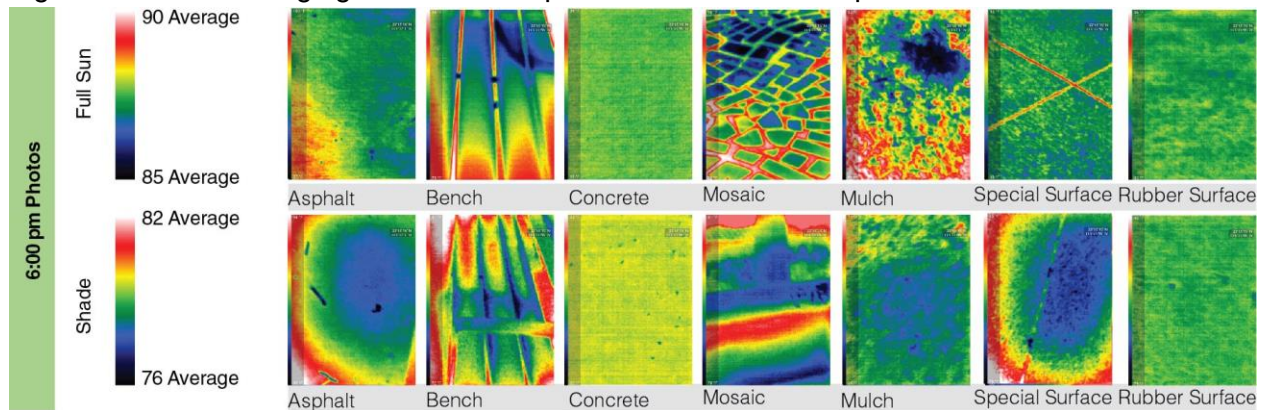


Figure 4: Thermal imaging of surface temperatures taken at 6:00 am

Sources:

Studies Find Redlining Linked To More Heat, Fewer Trees In Cities Nationwide: NPR, 2020.
<https://www.npr.org/2020/01/14/795961381/racist-housing-practices-from-the-1930s-linked-to-hotter-neighborhoods-today>

Limitations:

- Temperatures in the table represent an average of temperatures across the area mapped, making it difficult to pinpoint a consistent temperature for each material in each

condition, especially for materials with color variation such as the rubber surfacing.

- It was difficult to take the readings in exactly the same place each time, which may have the largest effect in readings taken over the rubber surfacing due to the varied colors.
- Since the research assistants alternated taking temperature readings, the data might reflect differences in technique using the equipment.

Social Benefits

Overall Survey Methods: The research team developed a digital and printed survey to distribute to Lynwood residents and users of Ricardo Lara Park. The survey included 14 questions: 10 questions regarding the overall park and 4 optional questions related to the community garden. The research team strived to create a survey that was as simple and quick to fill out as possible for best results. The digital survey was created using Google Forms, which also provides an option to create a QR code so people can scan wherever they are and fill out the surveys. We also printed 300 surveys – 150 in English and 150 in Spanish to account for the large Spanish speaking Latino community in Lynwood. The research team dropped off surveys with two community leaders, who agreed to distribute and collect for the team. The rest we distributed using two methods.

First, we installed survey boxes at three sections of the park—the dog park, the playground, and the community garden. We included two boxes in each area, one for printed copies in English and one for Spanish, along with twenty small pencils per box. A third, locked box was left to collect completed surveys. Taped to each survey box station were the QR codes to the digital survey, in case residents were in a hurry.



Figure 4: Survey boxes installed in the playground at Ricardo Lara Park

Second, we engaged residents directly by setting up a table with the surveys on three separate occasions: Saturday, June 26th at 10:00am; Tuesday, June 29th at 6:00pm; and Thursday, July 1st at 5:30pm. On the second engagement we realized that afternoons bring out more people than the morning engagements. In our case this was likely because of the early morning heat. On the last engagement visit, the research team went door to door to homes across from the park to speak to neighbors. The research team found that direct, “active” engagement, such as setting up tables and door to door outreach, was the most effective in getting surveys filled out. “Passive” engagement using the survey boxes was less effective in getting surveys filled out.



Figure 5: Local youth cyclists stopping to fill out surveys

Of the 39 surveys collected, eight were dropped off in the survey boxes. Seven of those were dropped off after explaining to passersby the purpose of the research. Seven more were filled out using the QR codes, while the remaining 24 came from direct engagement. Two community leaders with close ties to Ricardo Lara Park supported the research by sharing the survey link and printed copies. Since the questions were focused on long-term use, the research team left out responses by first time visitors to the park. To do this we asked respondents to state whether it was their first time visiting the park or if they have not visited the park.

Some questions were optional, so the number of surveyed users responding to each individual question may vary.

- **Improves social cohesion among residents, with 86% of 36 surveyed users reporting the park has made a noticeable positive change in the neighborhood and 68% of 37 users reporting that they have met new people and/or made new friends thanks to the park.**

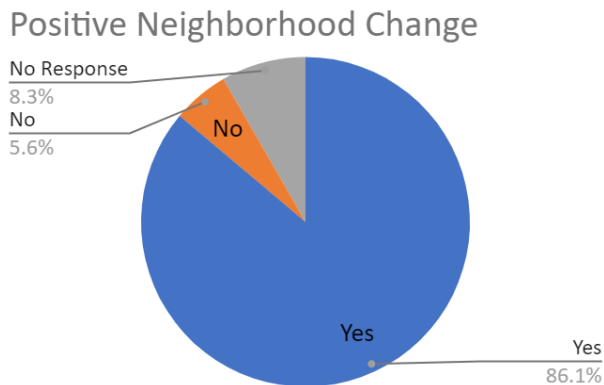
Method: The CSI research team distributed printed and online surveys to park users and community leaders (see Overall Survey Methods for complete methods).

- In the survey, the research team used two yes/no survey questions to gather information specifically on the park’s success in building a sense of community:
 - The park has made a noticeable, positive change in the neighborhood
 - I have met new people/made new friends thanks to the park.

Calculations:

- The research team used the following formula to get the percentage of respondents who agreed with the questions “The park has made a noticeable, positive change in the neighborhood,” and “I have met new people/made new friends thanks to the park”.
 - Yes/All responses to question x 100
 - Noticeable, Positive Change: $31/36 \times 100 = 86.11\%$
 - Met New People/Made New Friends: $25/37 \times 100 = 67.57\%$

Seen a Noticeable, Positive Change in the Neighborhood



Met New People/Made New Friends

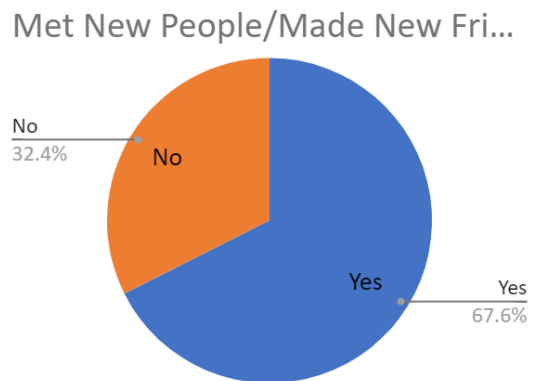


Figure 6: 68% of survey respondents said they met new people or made new friends since the park opened and 86% of survey respondents said the park has made a noticeable, positive change in the neighborhood

Sources:

LeBleu, Charlene, Ryan Bowen, and Britton Garrett. “Railroad Park.” *Landscape Performance Series*. Landscape Architecture Foundation, 2016. <https://doi.org/10.31353/cs1080>

Limitations:

- The sample size was limited due to the number of hours the research team could spend

in the field. There also may have been fewer people using the park due to COVID-19. For instance, the community garden and dog park areas were locked during each site visit, and there were no community events. With the aim of obtaining a large sample size, researchers used several methods for obtaining surveys, as described above, over a course of three weeks. The researchers were aware of bias that can occur with convenience sampling. Additional respondents would improve the reliability of the results.

- ***Improves physical and mental health, with 87% of 38 surveyed users reporting that their physical activity level is higher, 89% of 37 reporting their physical health has improved, and 89% of 37 reporting that their overall mental health has improved since the park's opening.***

Background: Improving health outcomes across Lynwood was one of the priority goals for Ricardo Lara Park. At the time Lynwood had one of the highest obesity rates in Los Angeles County, while having one of the lowest park acreages per 1000 residents. Although Lynwood continues to be a park-poor community according to the recent Los Angeles Countywide Comprehensive Parks and Recreation Needs Assessment, Ricardo Lara Linear Park provides 12 acres of new park space .

Method: Research assistants distributed a survey to the community. The survey asked three yes/no questions to the general public on the topic of improved health outcomes:

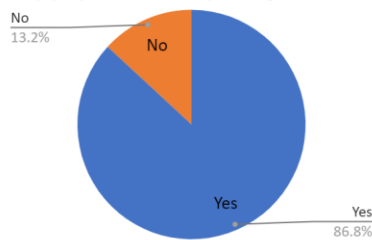
- My physical activity level has been higher since the park opened
- My overall physical health has improved since the park opened.
- My overall mental health has improved since the park opened.

Calculations:

- The research team used the following formula to get the percentage of respondents who agreed with the questions above.
 - Yes/All responses to question x 100
 - Higher activity level $33/38 \times 100 = 86.84\%$
 - Improved physical health $33/37 \times 100 = 89.19\%$
 - Improved mental health $33/37 \times 100 = 89.19\%$

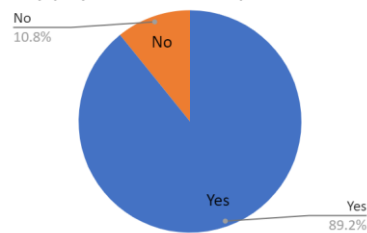
Higher Physical Activity

My physical activity is higher ...



Improved Physical Health

My physical health improved ...



Improved Mental Health

My mental health improved ...

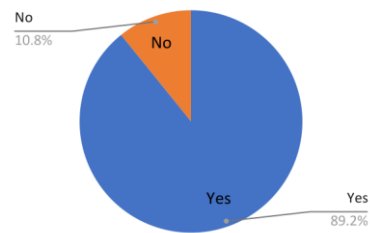


Figure 7: The graphs above represent the positive correlation between the park opening and physical activity, physical health, and mental health

The survey included an open-ended question about the park: “what features/areas do you enjoy the most?” The responses strongly pointed to those elements that support physical activity, with 11 of the 14 respondents mentioning the walking path and 2 of the 14 mentioning the workout area.

- ***Improves health through the community garden, with 50% of 26 surveyed users reporting that their family’s health has improved and 45% of 31 users reporting that they eat healthier due to their participation in the community garden’s programs and activities.***

The survey asked two yes/no questions to community garden users on improved health outcomes since participating in the garden. In the community garden section of the survey we requested that only people who have participated in the garden and its programming fill out the questions.

- I eat healthier food options thanks to my participation in the community garden.
- Participating in the community garden’s programs and activities has improved my family’s health.

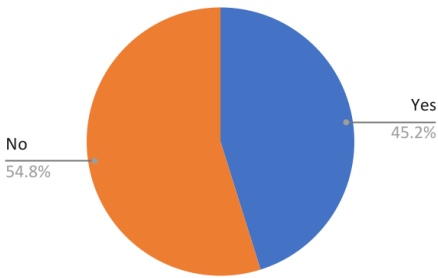
The survey also asked participants about the type of food they grow in the garden. Research team believed it would be interesting to see if residents, which are largely of Mexican and Central American descent, are growing rare fruits and vegetables from their respective countries. The four responses to this question included lemon trees, vegetables, collard greens and mustard greens, sunflowers, cabbage, broccoli, and sage.

Calculations:

- The research team used the following formula to get the percentage of respondents who agreed with the questions above.
 - Yes/All responses to questionx100
 - $14/31 \times 100 = 45.16\%$
 - $13/26 \times 100 = 50.00\%$

Eat Healthier Foods

Eat Healthier Foods



Improved Family's Health

Improved Family's Health

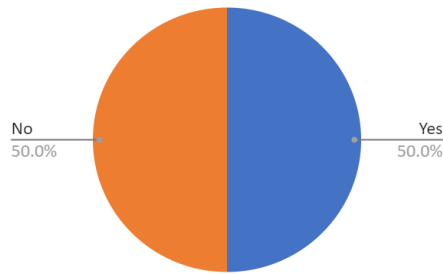


Figure 8: The graphs above illustrate the positive correlation between the park design and survey respondents' eating healthier foods and improved family health.

Sources:

- LeBleu, Charlene, Ryan Bowen, and Britton Garrett. "Railroad Park." *Landscape Performance Series*. Landscape Architecture Foundation, 2016. <https://doi.org/10.31353/cs1080>
- Los Angeles County Department of Parks And Recreation. 2016. *Los Angeles Countywide Comprehensive Parks and Recreation Needs Assessment*. [StudyArea_109.pdf \(lacountyparkneeds.org\)](http://lacountyparkneeds.org/StudyArea_109.pdf)

Limitations:

- The research team noticed an immediate issue with the community garden, as the space is currently largely unused by Lynwood residents. Survey respondents answered questions about the community garden's role in meeting health and social benefits. Many surveyed visitors very critical of the garden during our on-site engagements and the survey. Residents expressed difficulty in accessing the garden, the lack of maintenance and coherent leadership at the site. Most surveyed users mentioned they've had minimal involvements in the programs offered by the garden, due to the bureaucratic challenges that come with applying for garden membership. There was a general belief from respondents, however, that the garden contributed to an improved sense of community and improved health outcomes.
- ***Reduces noise pollution coming from Fernwood Avenue by up to 7 decibels, which represents a clearly noticeable change, in areas of the park where physical features serve as a sound barrier..***

Background:

A decibel (dB) is a unit of measurement for sound. A-weighted decibels, abbreviated dBA, are an expression of the relative loudness of sounds in air as perceived by our ears.

Table 3: Perceptions of Increases in Decibel Levels (<https://www.gcaudio.com/tips-tricks/decibel-loudness-comparison-chart/>)

Perceptions of Increases in Decibel Level	
Imperceptible Change	1dB
Barely Perceptible Change	3dB
Clearly Noticeable Change	5dB
About Twice as Loud	10dB
About Four Times as Loud	20dB

Ricardo Lara Linear Park occupies land between Interstate 105 and Fernwood Avenue, a traffic-heavy street. The Interstate is elevated and has a concrete block sound wall stretching along most of the length of the park. It is well known that noise pollution can cause health disparities in neighborhoods with major streets and highways. This is why it was imperative for the research team to assess whether Ricardo Lara Park succeeded in reducing noise pollution coming from the Interstate and/or Fernwood Avenue.

Method:

Research assistants used two digital sound level meters to record sound levels across the park. During our initial site visits, we observed less noise coming from the Interstate due to the sound wall, and more noise coming from Fernwood Avenue, where speeding is a common noise nuisance. The research team recorded sound levels at several locations including along a section of Fernwood Avenue to find out whether berms, walls, trees, and/or shrubs work to lower sound levels.

The team chose four designated spots based on different physical features of the park, which included: An area with berms, low concrete walls, shrubs, trees and low gabion walls. The sound readers were placed strategically in areas where people engage with the park and tested in three different positions: Average Adult Height, Average Adult Height when seated, and average child Height—more detail below. The sound reader was left in each position for five minutes to get a good understanding of sound levels.

The information gathered was provided through the use of a Digital Sound Level Meter - BAFX3608- with a Measurement range of 30- 130 Average Decibels (dBA) and a Resolution of 0.1 decibels (dB0). To quantify the sound levels, the team gathered sound readings by using two Digital Sound Level Meters—one placed as close as possible to the street while the other placed a few feet away and behind different physical park features in common gathering spaces of the park. This arrangement helped identify changes in sound levels by having two frames of data: one set at the source and the other is set behind a barrier.



Figure 9: Sound readings were taken next to the Dog Park, the Concrete Wall, the Playground, and the Berms



Figure 10: Sound level readers in the Dog Park



Figure 11: Sound level readers placed near the concrete wall



Figure 12: Sound level reader on Fernwood Avenue near the playground. The second sound reader, within the playground, is located just out of the left edge of the image frame.



Figure 13: Sound level reader placed inside the park in the berm area.

Table 4: Sound level reader heights

The sound level meters were positioned at various heights to capture noise impacts:

- 67 inches | 5 feet 7 Inches - average adult height
- 48 inches | 4 feet - average adult sitting height
- 36 inches | 3 feet - average 8 year old kids

Table 5: Common Noises and Their Sound Levels

10dB: Natural Breathing

30dB: Leaves rustling, soft music, whisper

40dB: Quiet conversation volume, average home noise

50dB: Average conversation volume

60dB: Quiet traffic noise

70dB: Office noise, inside car at 60mph

80dB: Loud traffic noise at close range

- ***Sounds above 85 dB are harmful*** -

90 dB: Subway, shouted conversation

100dB: Noise from a jackhammer at close range

110dB: Chainsaw, leaf blower

120 dB: Rock Concert, Loud symphony, Sport crowd

130 dB: Stock Car Races

140 dB: Gunshot, Siren at 100 feet

Calculations:

Research assistants collected sound levels and recorded them on a chart.

The calculations were made by referencing the charts and averaging the oscillation points to find out how much reduction happened in the specific areas. Excel formulas were used to convert decibels into logarithmic values and back.

It is important to note that the distance between the Digital Sound Meter at the street and inside the park varied in each location based on the gathering area's design. The intention was to measure the sound levels where people spend their time and compare those levels to the noise coming directly from Fernwood Avenue.

**Sound Data Locations
Dog Park**



Figure 14: Dog Park section diagram of sound level reader locations.

Average Adult Height (5'7") Sound Reduction:

Close to Street Location: 65.51

Park Location: 63.45

65.51 - 63.45 = **2.16 dB Reduction**

Average Sitting Adult Height (4') Sound Reduction:

Close to Street Location: 63.69

Park Location: 59.46

63.69 - 59.46 = **.83 dB Reduction**

Average Child Height (3') Sound Reduction

Close to Street Location: 66.23

Park Location: 63.25

66.23 - 63.25 = **2.98 dB Reduction**

Concrete Wall



Figure 15: Concrete Wall section diagram of sound level reader locations.

Average Adult Height Sound Reduction:

Close to Street Location: 60.47

Park Location: 63.35

60.47 - 63.35 = **0.2 dB Reduction**

Average Sitting Adult Height Sound Reduction:

Close to Street Location:58.97

Park Location: 58.97

58.97 - 58.97 = **0 dB Reduction**

Average Children Sound Reduction

Close to Street: 58.03

Park Location: 58.03

58.03 - 58.03= **0 dB Reduction**

Playground

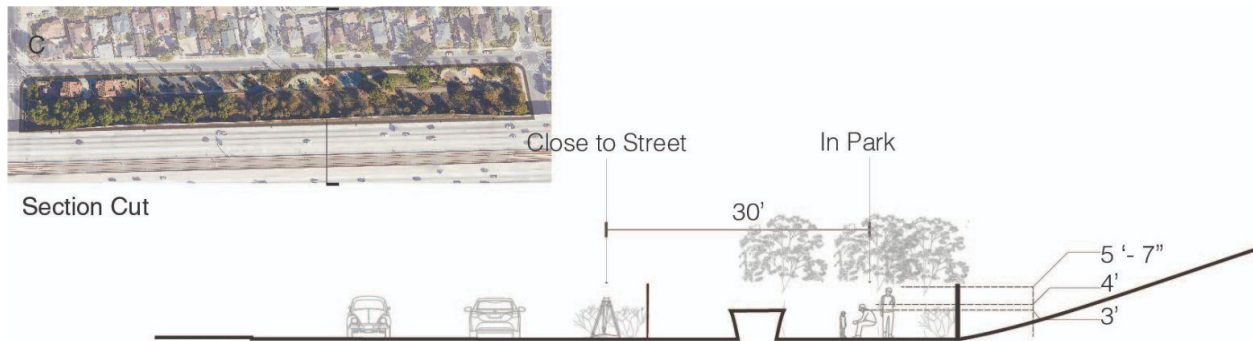


Figure 16: Playground section diagram of sound level reader locations.

Average Adult Height (5'7") Sound Reduction:

Close to Street Location: 67.2

Park Location: 65.33

67.2 - 65.33 = **1.87 dB Reduction**

Average Sitting Adult Height (4') Sound Reduction:

Close to Street Location: 65.25

Park Location: 61.37

65.25 - 61.37 = **3.88 dB Reduction**

Average Child Height (3') Sound Reduction

Close to Street: 66.0

Park Location: 60.91

66.05 - 65.33 = **5.14 dB Reduction**

Berm



Figure 17: Berm section diagram of sound level reader locations.

Average Adult Height (5'7\") Sound Reduction:

Close to Street Location: 65.73

Park Location: 59

65.73 - 59 = **6.73 dB Reduction**

Average Sitting Adult Height (4') Sound Reduction:

Close to Street Location: 65.69

Park Location: 59.46

65.69 - 59.46 = **4.23 dB Reduction**

Average Child Height (3') Sound Reduction

Close to Street: 65.98

Park Location: 58.31

65.98 - 58.31 = **7.14 dB Reduction**

Table 6: Sound levels by location and height

Dog Park			
	<i>Close to Street Average</i>	<i>In Park Average</i>	<i>Benefit Average</i>
Adult Height	65.51	63.35	2.16
Sitting Adult Height	65.5	64.67	0.83
Children's Height	66.23	63.25	2.98
Concrete Wall			
	<i>Close to Street Average</i>	<i>In Park Average</i>	<i>Benefit Average</i>
Adult Height	60.47	60.27	0.2
Sitting Adult Height	58.97	58.97	0
Children's Height	58.03	58.03	0
Playground			
	<i>Close to Street Average</i>	<i>In Park Average</i>	<i>Benefit Average</i>
Adult Height	67.2	65.33	1.87
Sitting Adult Height	65.25	61.37	3.88
Children's Height	66.05	60.91	5.14
Berm			
	<i>Close to Street Average</i>	<i>In Park Average</i>	<i>Benefit Average</i>
Adult Height	65.73	59	6.73
Sitting Adult Height	63.69	59.46	4.23
Children's Height	65.98	58.31	7.67

Sources: Text

The Engineering Toolbox. "Outdoor Ambient Sound Levels." Accessed July 20, 2021.

https://www.engineeringtoolbox.com/outdoor-noise-d_62.html#:~:text=It%20is%20common%20that%20Day-Night%20sound%20levels%20of%20L%20dn%20more%20than%2048%20dBA%20.

Gressette, Andrew. Demonstration to research assistants on modeling sound. July 20, 2021.

<https://www.gcaudio.com/tips-tricks/decibel-loudness-comparison-chart/>

Limitations:

- Drastic Change in Data—Taking the sound readings across the whole park took a long time to complete. For example, under the assumption that the loudest sounds on Fernwood Avenue come from automobiles, the research team took readings during the rush hour period. By the time the research team reached the last station, rush hour had passed and the street noise relaxed.

- Inactive vs Active—Due to the time frame the park was being used during the final portions of the noise pollution examination, there is a discrepancy between average noise levels at certain time frames of the project.

Economic Benefits

- ***Saved an estimated \$47,800 in hauling fees by using the soil excavated for detention basins and swales to create hills on the site.***

Background:

Grading and hauling soil requires heavy equipment, costs money, creates air and noise pollution, and often produces large areas of landfill. Because the design of Ricardo Lara Park included stormwater detention basins and swales, initial cost estimates included extensive hauling away of soil. The landscape architect instead designed hills into the park to keep all the soil on site.

Method:

The team gathered the information by looking at the Lynwood Linear Park 100% Design Phase Statement of Probable Cost (Cumming).

The calculations were made by adding the cubic yards (cu yd) for: Backfilling and Compacting soil and hauling off excess soil to find the respective cost savings for each one of the five blocks in the project. (See Appendix 2 for calculation tables)

Calculations: Cost for backfilling and compacting soil = \$12/cu yd

Cost for hauling off excess soil = \$25/cu yd

Cost savings for keeping soil on site = (\$25 x cu yd)-(\$12 x cu yd)

Backfill and compact soil:

[Block 1 (100 cu yd) + Block 2 (164 cu yd) + Block 3 (60 cu yd) + Block 4 (9 cu yd) + Block 5 (890 cu yd)] \$12/cu yd = \$14,676

Haul-off excess soil:

[Block 1 (62 cu yd) + Block 2 (0 cu yd) + Block 3 (1,194 cu yd) + Block 4 (1,017 cu yd) + Block 5 (226 cu yd)] \$25/cu yd = \$62,475

Cost Savings for keeping soil on site:

$\$62,475 - \$14,676 = \$47,799$

Sources:

Cumming. 2014. *Lynwood Linear Park 100% Design Phase Statement of Probable Cost*. July 16, 2014.

Hung, Ying-yu. Conversation with the research team. July 9, 2021.

Limitations:

- The research team was working with a cost estimate and not the final construction costs for the park. There is a possibility that the actual volumes of backfill and compacting differed. Since we didn't have access to the construction costs or contractor records, we couldn't verify that no soil was hauled off site.
-

Appendix 1

Survey | English

Ricardo Lara Park Community Survey

Hello! Thank you for taking the time to fill out this survey! A team from the Department of Landscape Architecture at Cal Poly Pomona is conducting research that looks at measuring the social and environmental benefits that Ricardo Lara Park brings to the community. We would love to hear your thoughts about how Ricardo Lara Park has improved the community and your health and wellbeing.

Name (optional):

Age:

Date:

1. How often do you visit Ricardo Lara Park?
 - a. Every day
 - b. A few times a week
 - c. Once a week
 - d. Once a month
 - e. This is my first visit to the park
 - f. I have not visited the park
2. Have you lived here since before the park was built?
 - a. Yes
 - b. No
3. Based on the map below, how far do you live from the park?



- a. Less than $\frac{1}{4}$ of a mile away
 - b. Less than $\frac{1}{2}$ a mile away
 - c. Less than 1 a mile away
 - d. More than 1 a mile
4. What features/areas do you enjoy the most?
 5. My physical activity level is higher since the park opened.
 - a. Yes
 - b. No
 6. My overall physical health has improved since the park opened.
 - a. Yes
 - b. No
 7. My overall mental health has improved since the park opened.
 - a. Yes
 - b. No
 8. I have met new people/ made new friends thanks to the park.
 - a. Yes
 - b. No

9. The park has made a noticeable, positive change in the neighborhood.
- a. Yes b. No
10. Do you have any additional comments?

Please fill out questions 11 -14 if you have used the community garden at Ricardo Lara Park

11. I eat healthier food options thanks to my participation in the community garden.
- a. Yes b. No
12. Participating in the community garden's programs and activities has improved my family's health.
- a. Yes b. No
13. What do you grow in the garden?
14. Do you have any additional comments about the community garden?

Thank You!

This research project on Ricardo Lara Park forms part of the Landscape Architecture Foundation's "Landscape Performance Series" case study investigations. These case studies form part of a database of landscape architecture projects from around the world and serve as a tool for understanding the impact that projects like Ricardo Lara Park have in creating healthier environments and communities along with improving a neighborhood's economic outcomes. For more information on the Landscape Architecture Foundation's "Landscape Performance Series" projects, visit their website at <https://www.landscapeperformance.org/> .

Survey | Spanish

Encuesta Comunitaria Sobre el Parque Ricardo Lara

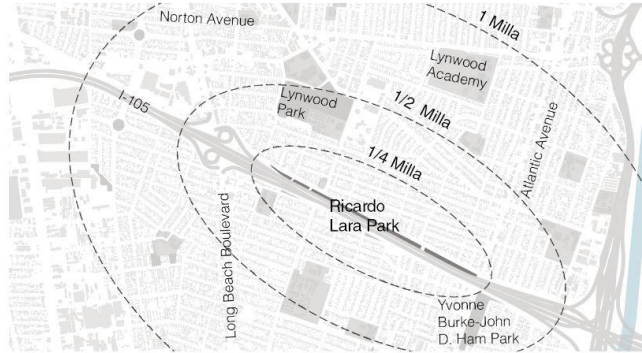
¡Hola! Gracias por tomar el tiempo para completar esta encuesta. Un equipo del Departamento de Arquitectura de Paisajes de la Universidad Politécnica de Pomona esta distribuyendo esta encuesta para analizar los beneficios ambientales y sociales que el Parque Ricardo Lara ha traído a la comunidad. Nos encantaría escuchar sus pensamientos sobre como el Parque Ricardo Lara a mejorado la comunidad y su salud y bienestar.

Nombre (Opcional):

Edad:

Fecha:

1. ¿Con que frecuencia visita el Parque Ricardo Lara?
 - a. Todos los días
 - b. Varias veces en la semana
 - c. Una vez a la semana
 - d. Una vez al mes
 - e. Es mi primera visita al parque
 - f. Yo no e visitado el parque
2. ¿Ha vivido en esta comunidad desde antes que el parque se abriera?
 - a. Si
 - b. No
3. Basándose en este mapa, ¿qué tan lejos del parque vive usted?



- a. Menos de 1/4 de milla de distancia
 - b. Menos de 1/2 milla de distancia
 - c. Menos de 1 una milla de distancia
 - d. Mas lejos de (1) una milla de Distancia
4. Que areas/ características te gustan mas?
5. Hago más actividad física desde que el parque se abrió.
 - a. Si
 - b. No
6. En general mi salud física a mejorado desde que abrió el parque.
 - a. Si
 - b. No
7. En general mi salud mental a mejorado desde que abrió el parque.
 - a. Si
 - b. No
8. E conocido a nuevas personas desde que abrió el parque.
 - a. Si
 - b. No

9. Se nota que el parque ha traído un cambio positivo a la comunidad.
a. Si b. No

10. ¿Tiene algunos comentarios adicionales?

Por favor complete las preguntas del 11-14 si a usado el jardín comunitario del parque Ricardo Lara.

11. Como opciones mas saludables gracias a mi participación en el jardín.
a. Si b. No
12. Participando en las actividades y programas del jardín a mejorado la salud de mi familia.
a. Si b. No
13. ¿Que crecen en el jardín?

14. ¿Tiene algunos comentarios adicionales sobre el jardín?

¡Gracias!

Este proyecto de investigación sobre el parque Ricardo Lara forma la "Serie de Como Esta Funcionando el Paisaje" de parte de la Fundación de Arquitectura de Paisajes. Estas investigaciones forman parte de un largo banco de proyectos de arquitectura de paisajes de todas partes del mundo, y sirven como un recurso para aprender sobre el impacto que proyectos como el Parque Ricardo Lara tienen para mejorar el ambiente y comunidades junto como la economía de una comunidad. Para más información sobre las investigaciones que forman parte de la "serie de Como esta funcionando el paisaje" elaboradas por la Fundación de Arquitectura de Paisajes, visiten su página <https://www.landscapeperformance.org/>.

Free Responses to Survey Question #4: What features/areas do you enjoy the most?

“The trees and Plants”

“Walking”

“The trees and Plants”

“The walking trail”

“Straight, well groomed, few intersections running path with some shade”

“I used to enjoy the California native plant palette before the city of Lynwood maintenance workers trimmed them into lollipops”

“Walking trails”

Free responses to Survey Question #10: Do you have any additional Comments?

“I feel the park should be maintained with more regularity. In the winter when weeds come up it takes a long time for them to be cleaned up. This affects the native plants, animals, and insects. Also the mulch wood chips need to be replenished more often to preserve water. The planting of more trees to create more shade would be nice.”

“Maintain as clean as possible”

“You really need to clean up the broken glass it is a serious problem”

“I don't understand why the gates are purposely left open so the transients can set up camp. The lock is there but it's never locked, the gate is always open.”

“Please remove the homeless encampments along the park past Bullis going west. More lighting at night and security until 9pm would be great.”

“Negligence from the city has turned this great investment into every other park the city has. Neglected with little maintenance and lots of mismanagement.”

“We need to get rid of the homeless encampment around the kids area”

“Que pusieran mas cuidado en personas que están alojados en el parque”
English Translation: *“Pay more attention to the people that are living along the park”*

“Agan comité para ayudar en el mantenimiento”

English Translation: *“Create a committee to help with maintenance”*

“We have to have the homeless moved!”

“Un poco descuidado, respecto a lo homeless”

English Translation: *“A little neglected with respect to the homeless”*

“Más Juegos, área para ejercicios”

English Translation: *“More games, Exercise Area”*

- Claudia, 47 years old

“Somewhat, Yes there are too many dogs running loose and too much poop all around the place. There is too much trash and a lot of homeless people in certain areas.”

- Frances Anne Hutchinson, 70 years old

“I would like more space”

“Wish the city would clean the park more often”

- Anonymous, 47 years old

“Yes our park needs ALOT of maintenance, plants and trees and weeds are overgrown and out of control, just like the homeless living here.”

“The city doesn't do anything about the homeless people in the park or the people selling drugs and that wasn't a problem before the park was built.”

-Anonymous, 23 years old

“Mantener el parque más Iluminado”

English Translation: *“Maintain the park illuminated”*

“Poner más atención a los indigentes que están siempre están en el parque y tenemos miedo caminar por allí”

English Translation: *“ Pay close attention to the homeless that are always on the park and we are scared to walk through there”*

“Can something be done to stop the people at the encampments from leaving their bikes on the trail and burning their trash also?”

“Too many homeless! Indecent exposure to trash in the walkways and they do drugs in public”

Appendix 2

Block 1: Dog Park Construction Component Detail

Element	Quantity	Unit	Unit Cost	Total
<i>16 Site Preparation and Demolition</i>				
Selective demolition				
Sawcut, breakup, and remove existing sidewalk & curb ramps	432	SF	\$2.00	\$864
Erosion control				
Including sandbags, stabilized construction entrance, filter fabric fences, etc.	28,535	SF	\$0.08	\$2,283
Earthwork				
Grub and clear	28,535	SF	\$0.08	\$2,283
Rough and fine grading	28,535	SF	\$0.30	\$8,561
Excavate / cut soil	162	CY	\$8.00	\$1,296
Backfill and compact soil	100	CY	\$12.00	\$1,200
Haul-off excess soil	62	CY	\$25.00	\$1,550
Overexcavate and recompact soils to a depth of 2'-0" below grade	2,114	CY	\$5.00	\$10,569
Total - 16 Site Preparation and Demolition				<u>\$28,605</u>

Block 2: Fitness Park Construction Component Detail

Element	Quantity	Unit	Unit Cost	Total
<i>16 Site Preparation and Demolition</i>				
Selective demolition				
Sawcut, breakup, and remove existing sidewalk & curb ramps	911	SF	\$2.00	\$1,822
Erosion control				
Including sandbags, stabilized construction entrance, filter fabric fences, etc.	34,180	SF	\$0.08	\$2,734
Earthwork				
Grub and clear	34,180	SF	\$0.08	\$2,734
Rough and fine grading	34,180	SF	\$0.30	\$10,254
Excavate / cut soil	145	CY	\$8.00	\$1,160
Backfill and compact soil	164	CY	\$12.00	\$1,968
Import soil from block 1	19	CY	\$25.00	\$475
Overexcavate and recompact soils to a depth of 2'-0" below grade	2,532	CY	\$5.00	\$12,659
Total - 16 Site Preparation and Demolition				<u>\$33,807</u>

Block 3: Play Park Construction Component Detail

Element	Quantity	Unit	Unit Cost	Total
<u>16 Site Preparation and Demolition</u>				
Selective demolition				
Sawcut, breakup, and remove existing sidewalk & curb ramps	1,070	SF	\$2.00	\$2,140
Erosion control				
Including sandbags, stabilized construction entrance, filter fabric fences, etc.	49,400	SF	\$0.08	\$3,952
Earthwork				
Grub and clear	49,400	SF	\$0.08	\$3,952
Rough and fine grading	49,400	SF	\$0.30	\$14,820
Excavate / cut soil	1,254	CY	\$8.00	\$10,032
Backfill and compact soil	60	CY	\$12.00	\$720
Haul-off excess soil	1,194	CY	\$25.00	\$29,850
Overexcavate and recompact soils to a depth of 2'-0" below grade	3,659	CY	\$5.00	\$18,296
Total - 16 Site Preparation and Demolition				<u>\$83,762</u>

Block 4: Community Park Construction Component Detail

Element	Quantity	Unit	Unit Cost	Total
<u>16 Site Preparation and Demolition</u>				
Selective demolition				
Sawcut, breakup, and remove existing sidewalk & curb ramps	1,111	SF	\$2.00	\$2,222
Erosion control				
Including sandbags, stabilized construction entrance, filter fabric fences, etc.	59,275	SF	\$0.08	\$4,742
Earthwork				
Grub and clear	59,275	SF	\$0.08	\$4,742
Rough and fine grading	59,275	SF	\$0.30	\$17,783
Excavate / cut soil	1,026	CY	\$8.00	\$8,208
Backfill and compact soil	9	CY	\$12.00	\$108
Haul-off excess soil	1,017	CY	\$25.00	\$25,425
Overexcavate and recompact soils to a depth of 2'-0" below grade	4,391	CY	\$5.00	\$21,954
Total - 16 Site Preparation and Demolition				<u>\$85,183</u>

Block 5: ECO Park Work Construction Component Detail

Element	Quantity	Unit	Unit Cost	Total
<i>16 Site Preparation and Demolition</i>				
Selective demolition				
Sawcut, breakup, and remove existing sidewalk & curb ramps	1,084	SF	\$2.00	\$2,168
Erosion control				
Including sandbags, stabilized construction entrance, filter fabric fences, etc.	71,025	SF	\$0.08	\$5,682
Earthwork				
Grub and clear	71,025	SF	\$0.08	\$5,682
Rough and fine grading	71,025	SF	\$0.30	\$21,308
Excavate / cut soil	1,116	CY	\$8.00	\$8,928
Backfill and compact soil	890	CY	\$12.00	\$10,680
Haul-off excess soil	226	CY	\$25.00	\$5,650
Overexcavate and recompact soils to a depth of 2'-0" below grade	5,261	CY	\$5.00	\$26,306
<i>Total - 16 Site Preparation and Demolition</i>				<u>\$86,403</u>