FEHR PEERS

# Memorandum

Date: June 28, 2021

To: Barbara Kennedy, Parks Planner, Parks & Recreation Dept., City of Carlsbad

From: Mahdie Hasani and Katy Cole, Fehr & Peers

**Subject: Veterans Memorial Park SB 743 Vehicle Miles Traveled (VMT) Assessment**

*SD21-0400*

This memorandum evaluates VMT for transportation impact purposes of the proposed Veterans Memorial Park project (the "project"). The VMT analysis was conducted consistent with the methodologies described in the City of Carlsbad's *VMT Analysis Guidelines*, September 2020.

The project is located southeast of the Agua Hedionda Lagoon and bordered by Faraday Avenue on the west and south, and by Whitman Way in the north, shown in **Figure 1**. The site is 91.5 acres, of which 48 acres are developable (12 acres is a sensitive habitat that will be preserved). The remainder of the site is within the Macario Canyon/Veterans Park HMP Preserve.

The design intent is a family-oriented park with a variety of multi-generational and inclusive amenities that are incorporated into active and passive recreational elements. Park facilities and trails are interwoven with open space and park elements. The park is physically separated into two distinct areas (north and south) which transition through passive uses and natural open space to a prominent memorial element at the high point of the site (upper terrace).

Features on the north side include:

- Plaza/community gathering area with shaded pavilions (150-person capacity)
- Catering support building/restroom/storage/small office /golf cart parking (1,915 SF)
- Inclusive playground (19,295 SF)
- Family and group picnic areas
- Lawn for unstructured activities
- Parking lot
- Nature-themed playground (21,539 SF)
- Passive use areas (gardens for meditation, relaxation, sensory gardens)

Access to the south side of the park is located near the trail underpass at Faraday Avenue. The primary amenities on the south side are:

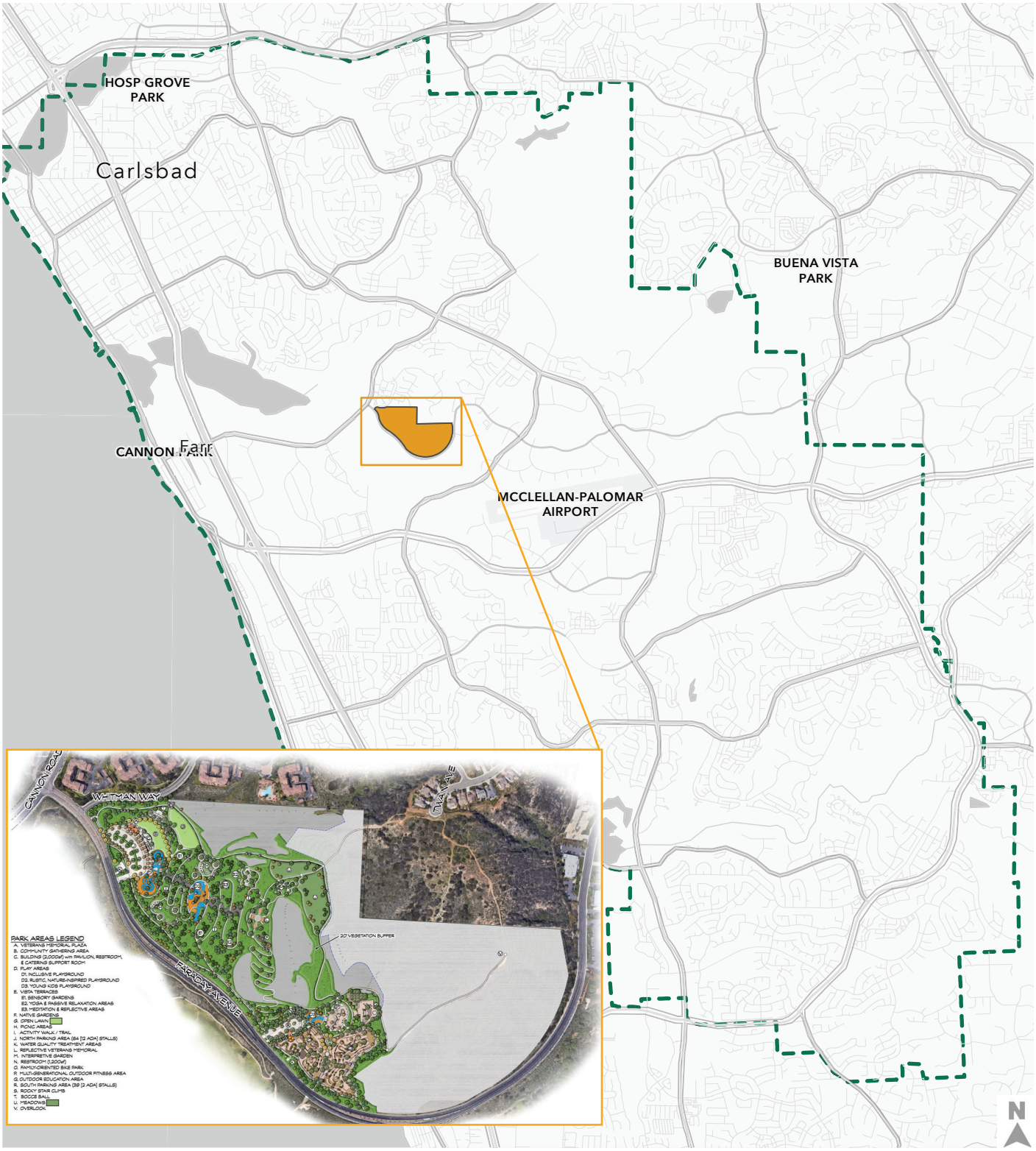
- Four-acre family-oriented bike park
- Restroom (965 SF)
- Tot lot (6,888 SF)
- Outdoor fitness area (14,579 SF)
- Outdoor education area (future development)
- Parking lot

The circulation routing (non-motorized) combines a variety of options for exploring the park:

- Accessible pathways lead from both sides of the park to the upper plateau where a prominent memorial art feature will be located. (passive use with individual seating areas to maximize views)
- Rock climb on the north slope
- Fitness run on south slope from parking lot to terrace
- Multi-use Trail - perimeter loop trail that surrounds the park is part of the citywide trail network and links with other city trails and connects to Twain Avenue.

This memorandum evaluates the effect that the proposed project would have on regional VMT to determine if the project has a significant transportation impact related to VMT. The City of Carlsbad has prepared guidelines for performing VMT analysis. As a regionally serving public facility, Veterans Memorial Park would have a significant VMT impact if the project is expected to cause a net increase in regional VMT compared to the no project condition. Also, it should be noted that most parks are considered locally serving, and would be presumed to have a less than significant impact on VMT; however, since Veteran's Memorial Park is proposed to have some unique park uses, a more detailed VMT evaluation was performed to determine its effect on regional VMT.

In general, park uses tend to redistribute existing park-related trips and do not add many new trips to the roadway network. In addition, for Veterans Memorial Park, we expect that it may reduce some vehicle trips and trip distances since the project is situated in a location that does not currently have many park facilities and some of the similar more unique facilities (such as the bike park) are currently much further away (more than 18 miles) for City residents and other North County residents. People seeking out these unique uses will have a much closer option with the implementation of Veterans Memorial Park.




Veterans Memorial Park

City of Carlsbad Boundary

Figure 1

## Veterans Memorial Park Location

# Step 1: Project Screening

The first step in performing transportation VMT impact analysis is to compare the project characteristics to the City of Carlsbad's screening criteria to determine if the project can be presumed to have a less than significant impact. The screening criteria are detailed in **Table 1**.

**Table 1: Veterans Memorial Park VMT Screening Analysis**

| Screening Criteria | Analysis | Is the Project Screened? |
|---|---|---|
| ***Small Project*** | A small project is defined in the City of Carlsbad guidelines as generating less than 110 daily trips after applying trip-reduction strategies.<br>*The project-generated trips are greater than 110 daily trips; therefore, the project is not considered a small project.* | No |
| ***Projects Located Near Transit*** | The City of Carlsbad guidelines state that projects proposed within ½ mile of the Carlsbad Village Coaster Station, the Carlsbad Poinsettia Coaster Station, or the Plaza Camino Real transit center would be presumed to have a less than significant VMT impact as long as project features do not otherwise indicate high VMT generation.<br>*The project is farther than ½ mile from each of the listed transit stops and therefore is not located near transit.* | No |
| ***Local-Serving Retail*** | Local-serving retail is defined in the City of Carlsbad guidelines as retail development under 50,000 SF in size; or larger than 50,000 SF development with an approved market primarily serving local uses.<br>*The project is not retail and therefore this screening category does not apply to Veterans Memorial Park.* | No |
| ***Local-Serving Public Facility*** | Local-serving public facilities are defined in the City of Carlsbad guidelines as facilities that serve the local public parks and public schools.<br>*According to the criteria of local-serving public facilities in the City of Carlsbad VMT guidelines, the project is not considered to be local-serving per Section 3.2.4 of the City guidelines. Aspects of the project are locally serving; however, since the project will serve the entire City and offers some unique park characteristics, we have determined that it is not fully locally serving and therefore this does not apply.* | No |
| ***Affordable Housing*** | *The project is not a residential development and therefore this screening category does not apply to Veterans Memorial Park.* | No |

| Screening Criteria | Analysis | Is the Project Screened? |
|---|---|---|
| ***Redevelopment Project*** | The City of Carlsbad guidelines state that a redevelopment project can be screened out from preparing a VMT analysis if the proposed project's total VMT is less than the existing land use's total VMT.<br>*The proposed project is not a redevelopment project; accordingly, the project does not meet the screening criterion.* | No |

Source: Fehr & Peers, 2021.

As shown in **Table 1**, the project does not meet the City of Carlsbad's VMT screening. Therefore, a VMT analysis is necessary to determine if the project has a VMT transportation significant impact.

# Step 2: VMT Analysis

Since the project does not meet the screening criteria, a VMT analysis is performed consistent with the City of Carlsbad's *VMT Analysis Guidelines*.

For regionally serving public facility land uses, an evaluation of the effect that the project has on regional VMT is required as described in Section 3.2.4 and Appendix A of the VMT Analysis Guidelines. The project was evaluated based on the net increase in total regional VMT. As described in the Guidelines: Public facilities that *do not meet the screening criteria…are considered regional…projects and require a model.* [Note that a sketch model is appropriate for this project as described below.] *Regional…projects that result in a net increase in VMT compared to the no project condition would have a significant transportation impact.*

The VMT analysis for the project was prepared using a sketch model based on detailed information regarding the park users' types, their travel characteristics, and "big data" for other similar parks in the San Diego Region. Use of the sketch model is more accurate than using a regional travel demand model because the model assumptions are project-specific, and in our experience, the SANDAG Regional Travel Demand Model is not sensitive enough to evaluate projects that generate less than 2,400 daily trips or projects that are unique in nature. This project is a community park that has unique recreational opportunities (bike park, trails, and other park uses); and therefore, a regional travel demand model would not accurately capture the nuances of the project. Multiple data sources and approaches were utilized for the analysis described in the following sections.

## Data Sources

### Big Data

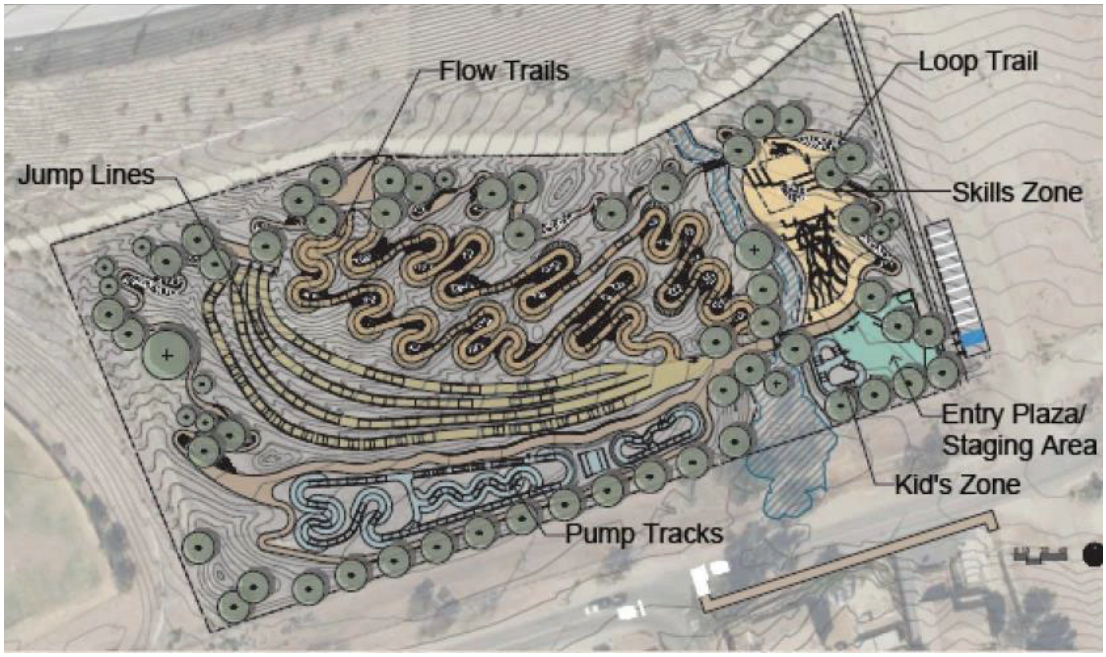
Given the unique characteristic of the park (such as the bike park component), it is expected that some users from farther away may visit this park seeking out this amenity. We collected and analyzed data from a big data source[1] to understand visitor's travel patterns to similar parks in the region. This data helped us to understand the extent that park users travel to seek out park amenities. A summary of four existing parks that offer similar amenities to the project is described below.

[1] Streetlight Data is a transportation data vendor that provides current and past transportation metrics such as trip origins and destinations derived from aggregated smartphone Global Positioning System (GPS) and sensor data.

### *1. Sweetwater Bike Park*

The 4.2-acre park opened on January 4, 2020, and is operated by the County of San Diego. It provides two flow trails, three pump tracks, a wooden feature skills area, rock gardens, and three progressive jump lines. It is the first bike park in the county.

*Figure 2: Sweetwater Bike Park Plan*

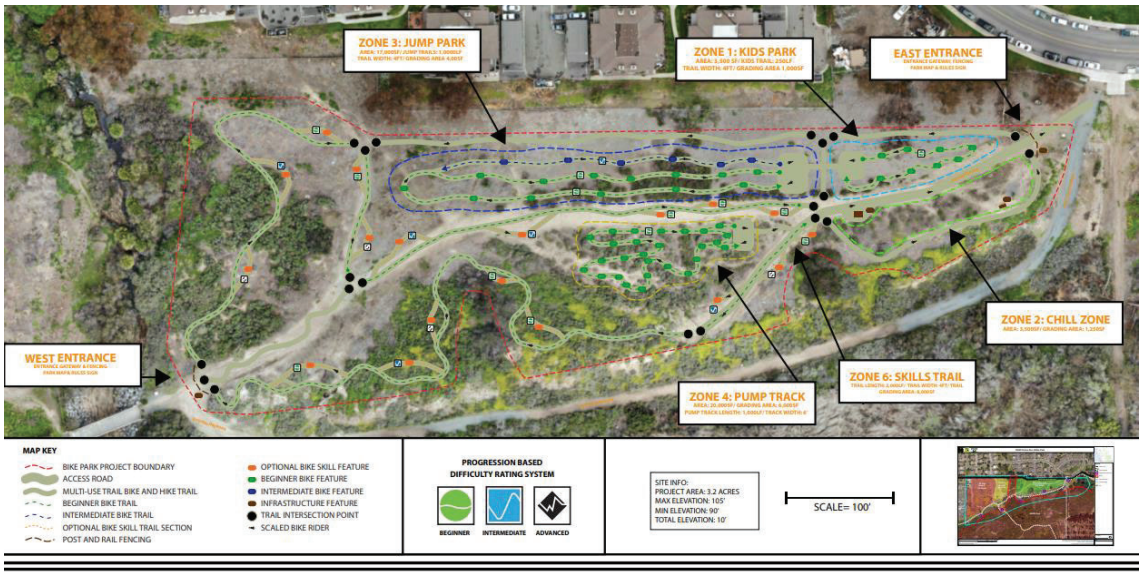



*Source: sandiegouniontribune.com*

### *2. Greg Cox Bike Park*

This 3.2- acre park opened on April 28, 2021 and is managed by the City of Chula Vista. It provides a kid track, a modular pump track, two jump lines with wooden features leading into a wallride and one return trail, and a perimeter trail with small drops and rock gardens. It is the second bike park in the county.

*Figure 3: Greg Cox Bike Park Plan*




*Source: sdparks.org*

### *3. Pacific Highlands Ranch Community Park*

This park opened in April 2019 and is managed by the City of San Diego. The park offers a variety of facilities including a playground, skate plaza, parkour area, fitness stations, picnic areas, a bike park, etc. The bike park is a 0.5-acre concrete surfaced facility with two progressive pump tracks that are open to bikes and skateboards.

This park is the closest bike park to the proposed project, and also offers a similar type of family-oriented facilities to visitors.

*Figure 4:* Pacific Highlands Ranch Community Park Plan


*Source: Parksinsandiego.com*

*4. Encinitas Community Park*

This 44- acre park opened in January 2015 and is managed by the City of Encinitas. It is a family-oriented park that provides a skate park, a dog park, a kid's play area, picnic facilities, softball/baseball fields, and soccer/multi-purpose fields.

It is the closest larger scale family-oriented city park to the project with a similar type of amenities. Also, in terms of developed areas, this park is similar in size to the project. Therefore, this park was included to provide some insights on multi-use parks similar in size/character to the project.

Travel distance of park users to these four parks on weekdays and weekends are summarized in **Tables 2** and **3**, respectively. The analysis year was selected based on the park's opening year and

the availability of big data These tables show the percentage of park users that travel one-way for each travel distance range. As shown in these tables, the majority of park users travel less than 10 miles to a park.

Also, **Tables 2** and **3** demonstrate the that travel distance for park users on weekdays and weekends are similar, with the weekends having more park users that are slightly farther away. For example, on the weekdays, 81% of park users are within 10 miles of the park. On weekends, 70% of park users are within 10 miles of the park.

**Table 2: One-Way Trip Length of Park Visitors on Weekdays (Miles)**

| Parks | Year | Less than 1 | 1 to 3 | 3 to 5 | 5 to 10 | 10 to 25 | 25 to 50 | 50 to 100 | more than 100 |
|---|---|---|---|---|---|---|---|---|---|
| Pacific Highlands Ranch | 2019 | 22% | 31% | 17% | 14% | 10% | 1% | 2% | 4% |
| Pacific Highlands Ranch | 2020 | 18% | 25% | 14% | 19% | 17% | 2% | 2% | 3% |
| Encinitas Community Park | 2019 | 22% | 30% | 14% | 14% | 13% | 2% | 2% | 4% |
| Encinitas Community Park | 2020 | 24% | 25% | 15% | 14% | 13% | 3% | 2% | 4% |
| Sweetwater Regional Park and Bike Park[1] | 2020 | 7% | 29% | 30% | 17% | 11% | 2% | 1% | 2% |
| Greg Cox Bike Park[2] | 2019 | 17% | 26% | 17% | 13% | 17% | 4% | 0% | 4% |
| Greg Cox Bike Park[2] | 2020 | 14% | 33% | 14% | 14% | 19% | 5% | 0% | 5% |
| ***Average[2]*** | | ***19%*** | ***28%*** | ***18%*** | ***16%*** | ***13%*** | ***2%*** | ***2%*** | ***3%*** |

Source: StreetLight Data, 2021. Fehr & Peers, 2021.
Note:
[1] Sweetwater Bike Park opened in 2020. So, only 2020 data were summarized. Note that the park opened during the COVID-19 pandemic when open parks were experiencing a higher number of daily visitations than usual[2]. Also, Sweetwater Bike Park data includes trips to Sweetwater Valley Little League.
[2] Greg Cox Bike Park opened in April 2021. Big data after the park opening is not available; however, 2019 and 2020 data were available for trail use in the park area prior to opening of the bike park. Since the data does not represent an official park, the data was not included in the analysis.

[2] Public parks and the pandemic: How park usage has been affected by COVID-19 policies: https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0251799

**Table 3: One-Way Trip Length of Park Visitors on Weekends (Miles)**

| Parks | Year | Less than 1 | 1 to 3 | 3 to 5 | 5 to 10 | 10 to 25 | 25 to 50 | 50 to 100 | more than 100 |
|---|---|---|---|---|---|---|---|---|---|
| Pacific Highlands Ranch | 2019 | 16% | 19% | 16% | 21% | 18% | 3% | 4% | 5% |
| Pacific Highlands Ranch | 2020 | 14% | 23% | 11% | 18% | 21% | 4% | 5% | 5% |
| Encinitas Community Park | 2019 | 16% | 24% | 14% | 16% | 18% | 6% | 3% | 4% |
| Encinitas Community Park | 2020 | 20% | 20% | 14% | 15% | 17% | 5% | 4% | 4% |
| Sweetwater Regional Park and Bike Park[1] | 2020 | 6% | 26% | 24% | 22% | 12% | 4% | 3% | 4% |
| Greg Cox Bike Park[2] | 2019 | 17% | 26% | 17% | 13% | 17% | 4% | 0% | 4% |
| Greg Cox Bike Park[2] | 2020 | 14% | 33% | 14% | 14% | 19% | 5% | 0% | 5% |
| ***Average[2]*** | | ***14%*** | ***22%*** | ***16%*** | ***18%*** | ***17%*** | ***4%*** | ***4%*** | ***4%*** |

Source: StreetLight Data, 2021. Fehr & Peers, 2021.
Note:
[1] Sweetwater Bike Park opened in 2020. So, only 2020 data were summarized. Note that the park opened during the COVID-19 pandemic when open parks were experiencing a higher number of daily visitations than usual. Also, Sweetwater Bike Park data includes trips to Sweetwater Valley Little League.
[2] Greg Cox Bike Park opened in April 2021. Big data after the park opening is not available; however, 2019 and 2020 data were available for trail use in the park area prior to opening of the bike park. Since the data does not represent an official park, the data was not included in the analysis.

The overall travel distance of park visitors to these parks was summarized in **Table 4**. Based on the data, the average 85$^{th}$ percentile weekday one-way travel distance is approximately 16 miles and weekend one-way travel distance is 23 miles. And the average weekday one-way travel distance is approximately 8 miles and weekend one-way travel distance is 12 miles.

**Table 4: Summary of Park User's One-Way Trip Length to Three Parks**

| Day of Week | One-Way Trip Length (Miles) | | | |
|---|---|---|---|---|
| | 85th Percentile | | Weighted Average | |
| | Three Parks[1] | Parks with Bike Park Facility[2] | Three Parks[1] | Parks with Bike Park Facility[2] |
| Weekday | 16 | 15 | 8 | 9 |
| Weekend | 23 | 22 | 12 | 12 |

Source: StreetLight Data, 2021. Fehr & Peers, 2021.
Note:
[1] Three parks are Sweetwater Bike park, Pacific Highlands Ranch Community Park, and Encinitas Community Park. Greg Cox Bike Park data was not included in the analysis.
[2] Parks with bike park facilities are Sweetwater Bike Park and Pacific Highlands Ranch Community Park. Note that Sweetwater Bike Park data also includes trips to Sweetwater Valley Little League.

## Park Users

To explain the effect of the project on the regional VMT, we classified the project's users into three categories including general park users, bike park users, and curious users described as follows and in **Table 5:**

*General Park Users* will mostly be people who live in the City of Carlsbad. These users are usually seeking a nearby or convenient park with typical amenities and would have sought out a park regardless of the project being constructed. Users may walk, bike, or drive to the closest park to use playgrounds, trails, or picnic areas.

*Bike Park Users* are the users who are specifically seeking out bike park with facilities such as pump tracks, jump lines, or flow trails. Such users may choose to drive long distances to reach a bike park.

*Curious Users* are the group of people who are interested in visiting new parks. We expect that these users may travel a bit farther than a general park user seeking out new park amenities.

**Table 5: Veterans Memorial Park Users**

| | General Park Users | Bike Park Users | Curious Park Users |
|---|---|---|---|
| **Visitors** | Primarily City of Carlsbad residents | Both residents and non-residents of the City of Carlsbad | Both residents and non-residents of the City of Carlsbad |
| **Typical Park Selection** | Closest park | Closest bike park | Newly constructed parks with unique amenities |
| **Motivation for Visiting a Park** | Seeking typical park amenities (e.g. picnic area, playground, trails, etc.) | Seeing bike park amenities (Pump tracks, flow trails, etc.) | Seeking something new and different in a park experience. |

Source: Fehr & Peers, 2021.

In the following sections, we reviewed the travel purpose, behavior, and VMT effect of each type of user and use the big data to help understand that VMT characteristics for each type of user.

## General Park Users

The proposed park provides a closer park option for many of the general park users in the City of Carlsbad. Such users will likely drive shorter distances and generate less VMT compared to no project conditions.

The average travel distance of park users is 12 miles (**Table 4**). So, the majority of the park users' home locations are within the 12-mile buffer of the project site. The highlighted buffer area shown in **Figure 5** includes some park uses; however, in the immediate vicinity of the proposed project, there are not any park uses. Also, based on inspection of the map, the project would be the closest large park to many City and some north county residents.

General park users are not expected to generate new trips, but they will redistribute the trips from traveling to existing parks to the new Veterans Memorial Park assuming the proposed park is the closest location to their home. Therefore, for this group of users, the project meets the characteristics of a locally serving park and is expected to result in a reduction in VMT amongst general park users.

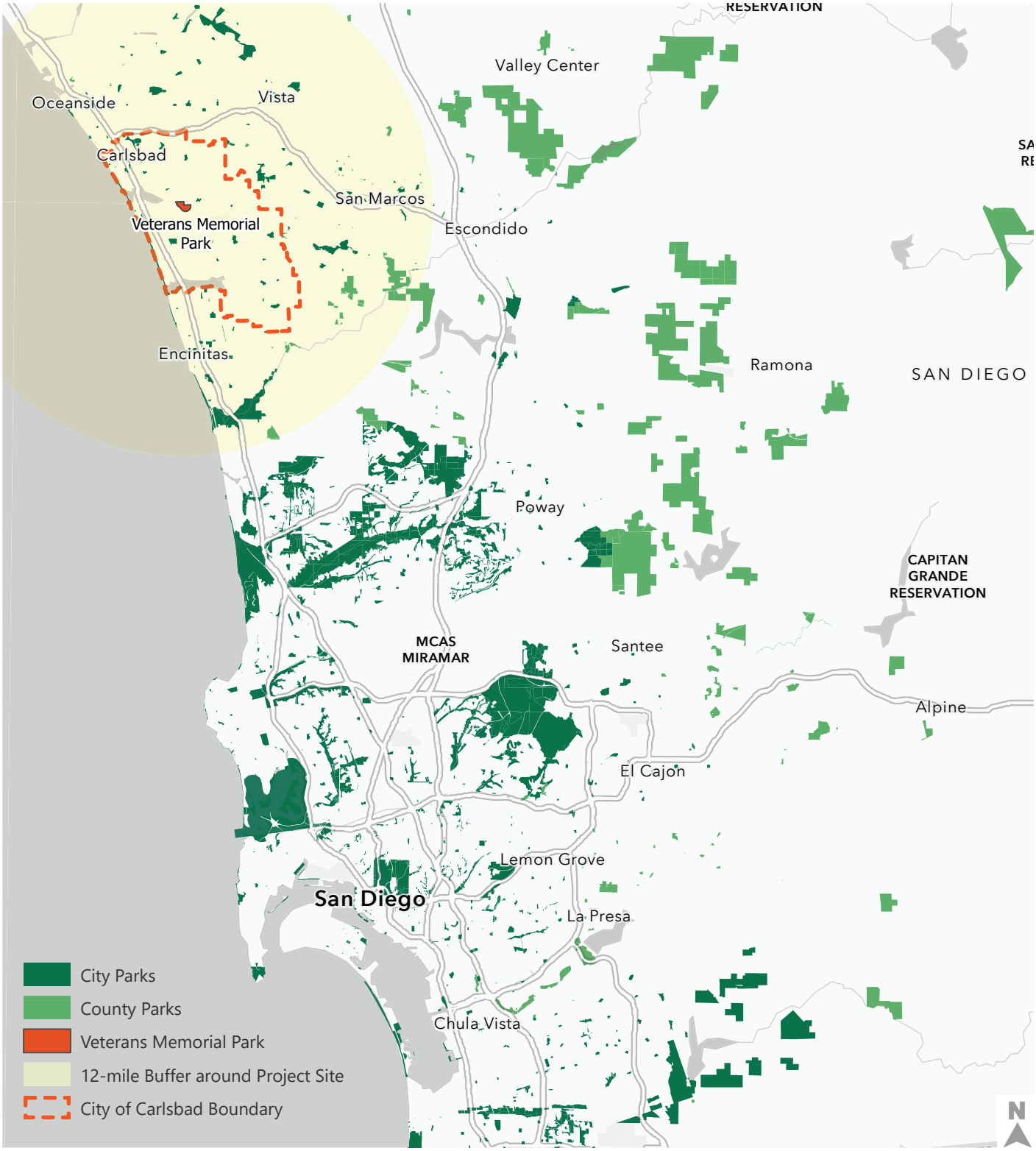



Figure 5

Location of the Existing Parks in the Vicinity of the Project

## Bike Park Users

Bike park users include City of Carlsbad residents and non-residents. Since there are limited existing bike park amenities in the region, Carlsbad residents that are specifically seeking bike park amenities would need to travel long distances.

### *City of Carlsbad Resident Bike Park Users*

Geospatial analysis was performed to determine the driving distance from the centroid of each census tract within the City of Carlsbad to the three similar bike parks described in the previous section and the comparative distance to the proposed project location (see **Appendix**). These distances were used to estimate the difference in VMT generated by Carlsbad residents making a round-trip to the bike park.

**Table 6** shows the average distance of Carlsbad residents traveling to the existing sample bike parks as compared to their distance to the project. As shown, the distance to the project is substantially less than to other available bike parks in the region.

**Table 6: Average Travel Distance of the City of Carlsbad Residents to Bike Parks**

| Parks | Weighted Average Distance per Residents Round-trip[1] |
|---|---|
| Sweetwater Bike Park | 82.62 miles |
| Greg Cox Bike Park | 86.70 miles |
| Pacific Highlands Ranch Park | 35.85 miles |
| Veterans Memorial Bike Park | 11.67 miles |

Source: Fehr & Peers, 2021.
Notes:
[1] Weighted average was calculated based on the population of the City of Carlsbad census tracts.

### *Non-Resident Bike Park Users*

Bike park users of the project are expected to also include non-residents from nearby cities. According to big data, there is no significant difference between the average travel distance of bike park users and other park users. Generally, the average travel distance of park users is approximately 12 miles (or 24 miles round-trip). Based on Tables 2 and 3 that summarize the big data, Non-residents within the 12-mile buffer of the project are shown in **Figure 6**.

A geospatial analysis was performed to calculate the average travel distance of the non-residents within 12-miles of Veterans Memorial Park to the existing three bike parks as well as the Veterans Memorial park (see **Appendix**). **Table 7** shows the average round-trip travel distance for non-residents.

Similar to residents, the round-trip travel distance of the non-residents to the project will be substantially less than no project condition.

**Table 7: Average Travel Distance of the Non-Residents to Bike Parks**

| Parks | Weighted Average Distance per Non-Residents Round-trip[1] |
|---|---|
| Sweetwater Bike Park | 92.68 miles |
| Greg Cox Bike Park | 93.58 miles |
| Pacific Highlands Ranch Park | 45.36 miles |
| Veterans Memorial Bike Park | 19.25 miles |

Source: Fehr & Peers, 2021.
Notes:
[1] Weighted average was calculated based on the population of the census tracts.

Based on this analysis of travel distance, the bike park users would not increase regional VMT, and to the extent that people are seeking out bike park uses, are expected reduce regional VMT.

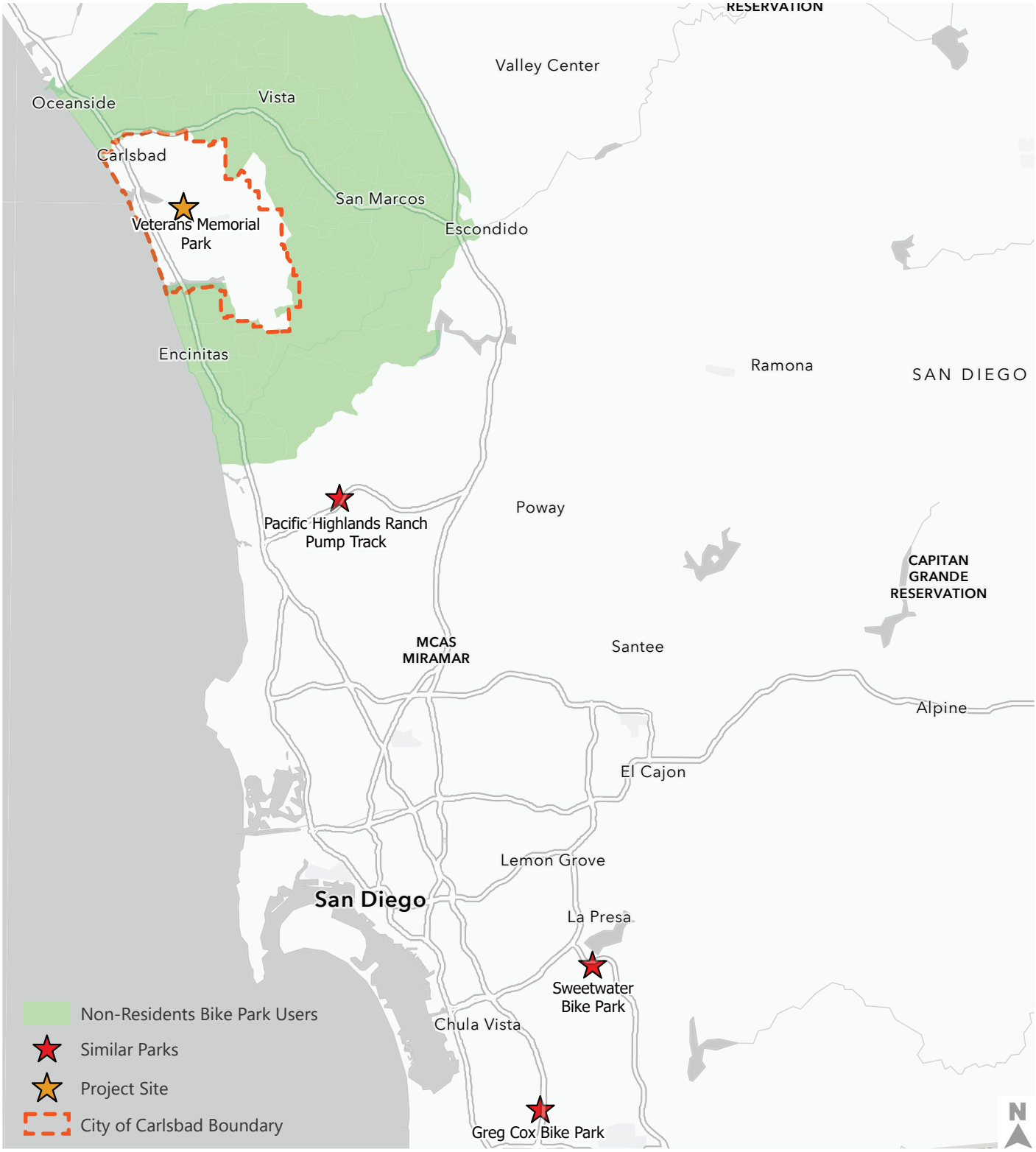



Figure 6

## Non-Resident Bike Park Users

## Curious Park Users

We expect curious users to make up the smallest proportion of overall park uses. Even though curious users will represent a small portion of park use, their trips may slightly increase regional VMT, since they are willing to drive a bit further to seek out a new, cool park, especially during the first couple years of the park opening and they may represent new trips/VMT within the region. However, based on the big data, this phenomenon does not seem to be extensive given that the brand-new Sweetwater bike park use had similar user travel distance to more established parks such as the Encinitas Community Park. However, to represent a worst-case scenario, we are considering the curious park users in our user profile.

In some cases, curious residents and non-residents visiting Veterans Memorial park may have longer trip lengths depending on their home locations, while in some other cases the trip length may be shorter. In addition, curious park users may be a combination of people who are redirecting to a different park or people who are a brand-new trip. Using the 12-miles buffer, as a proxy for where people live in relation to the project site, we performed a GIS analysis to calculate the population within this buffer around the project site as well as three existing bike parks in the county.

Based on the analysis, it is observed that it is relatively densely populated around the project within the 12-mile buffer, as summarized in **Table 8**, therefore, our expectation is that most curious users, like other park users, would primarily originate within that buffer. Therefore, the curious users that are redirecting from a different park would not increase regional VMT. Curious users that are brand new park trips may slightly increase regional VMT; however, given that this sub-group is expected to be small, the increase in VMT would be more than offset by the reduction in VMT due to general park users and bike park users.

**Table 8: Population within 12-mile Buffer Around Bike Parks**

| Parks | Population within 12-mile buffer (in thousands) |
|---|---|
| Greg Cox Bike Park | 330 |
| Pacific Highlands Ranch Community Park | 550 |
| ***Veterans Memorial Park*** | ***610*** |
| Sweetwater Bike Park | 1,050 |

Source: Fehr & Peers, 2021.

## Overall Change in Regional VMT

This section provides calculations of change in VMT associated with each park user group. Since it is unknown how many users will be in each user category, we have provided the calculations based on a range of different assumptions for user breakdown. This is intended to provide a range of the change in VMT and show the expected VMT trend (reduction or increase in regional VMT). **Table 9** displays the relative change for each user group based on the data presented in the previous sections.

**Table 9: Relative Change in VMT for Each User Group**

| Park Users | | Effect on VMT |
|---|---|---|
| General Park Users | Residents | Reduction |
| Bike Park Users | Residents | Reduction |
| | Non-residents | Reduction |
| Curious Park Users | Residents/redistributed trip | Reduction |
| | Residents/new trip | Increase |
| | Non-residents/redistributed trip | Reduction |
| | Non-resident/new trip | Increase |

Source: Fehr & Peers, 2021.

Based on the approved scoping agreement, the project is estimated to generate 893 (447 inbound and 446 outbound) daily weekday vehicle trips and 1,099 (550 inbound/449 outbound) weekend daily vehicle trips. To provide a range in expected VMT, we estimate the total vehicle trips of each user type and their trip length before and after the project condition to calculate the overall change in VMT. We used engineering judgment and information from the big data sources to arrive at the following assumptions for two scenarios. Scenario 1 includes more conservative assumptions than scenario 2, as explained in **Table 10**. Therefore, we expect the VMT change to be somewhere in between these two scenarios.

**Table 10: Scenario Assumptions – Trip Percentages and Round-Trip Travel Distance**

| Park Users | | Trip Percentage (Scenario 1)[1] | Trip Percentage (Scenario 2)[1] | Average Trip Length (miles) - w/o Project | Average Trip Length (miles) - with Project |
|---|---|---|---|---|---|
| General Park Users[2] | Residents/Non-residents | 80% (70%) | 50% (45%) | 16.0 | 11.67 |
| Bike Park Users[3] | Residents | 10% (10%) | 15% (15%) | 35.85 | 11.67 |
| | Non-residents | 4% (10%) | 25% (30%) | 45.36 | 19.25 |
| Curious Park User[4] | New trips | 3% (5%) | 5% (5%) | 0 | 24.0 |
| | Redistributed trips | 3% (5%) | 5% (5%) | 24.0 | 24.0 |

Source: Fehr & Peers, 2021.
Notes:
[1] Based on our engineering judgement.
[2] Without Veterans Memorial Park, the round-trip travel distance of general park users was assumed 16 miles (the average trip length of park users on weekdays based on big data). After the project is implemented, general park users travel distances were assumed to be similar to residents bike park travel distances.
[3] Bike park users are 50% residents and 50% non-residents. Without Veterans Memorial Park, all bike park users were assumed to go to the closest bike park (Pacific Highlands Ranch).
[4] Curious users are 50% new trips and 50% redistributed trips. Their round-trip travel distances before and after the project were assumed 24 miles (average trip length based on big data).

The regional change in total VMT attributed to the Veterans Memorial Park project is expected to be somewhere between scenario 1 and scenario 2, as summarized in **Tables 11 through 14**. The project is expected to generate about 3,108 to 5,514 fewer vehicle miles on weekdays and about 4,433 to 7,389 fewer vehicle miles on weekends as compared to before the project was built.

### Table 11: Change in VMT on Weekdays – Scenario 1

| Park Users | | Without Project | | | With Project | | | Difference |
|---|---|---|---|---|---|---|---|---|
| | | #Trips | Trip Length (Round-trip) | VMT | #Trips | Trip Length (Round-trip) | VMT | |
| General Park Users | Residents | 358 | 16.00 | 5,728 | 358 | 11.67 | 4,178 | -1,550 |
| Bike Park Users | Residents | 45 | 35.85 | 1,613 | 45 | 11.67 | 525 | -1,088 |
| | Non-residents | 18 | 45.36 | 816 | 18 | 19.25 | 347 | -470 |
| Curious Park Users | New Trips | - | - | - | 13 | 24.00 | 312 | 312 |
| | Redistributed | 26 | 24.00 | 624 | 13 | 24.00 | 312 | -312 |
| ***Total*** | | ***447*** | ***-*** | ***8,782*** | ***447*** | ***-*** | ***5,674*** | ***-3,108*** |

Source: Fehr & Peers, 2021.

### Table 12: Change in VMT on Weekends – Scenario 1

| Park Users | | Without Project | | | With Project | | | Difference #Trips |
|---|---|---|---|---|---|---|---|---|
| | | #Trips | Trip Length (Round-trip) | VMT | #Trips | Trip Length (Round-trip) | VMT | |
| General Park Users | Residents | 385 | 16.00 | 6,160 | 385 | 11.67 | 4,493 | -1,667 |
| Bike Park Users | Residents | 55 | 35.85 | 1,972 | 55 | 11.67 | 642 | -1,330 |
| | Non-residents | 55 | 45.36 | 2,495 | 55 | 19.25 | 1,059 | -1,436 |
| Curious Park Users | New Trips | - | - | - | 28 | 24.00 | 672 | 672 |
| | Redistributed | 55 | 24.00 | 1,320 | 27 | 24.00 | 648 | -672 |
| ***Total*** | | ***550*** | | ***11,947*** | ***550*** | | ***7,514*** | ***-4,433*** |

Source: Fehr & Peers, 2021.

### Table 13: Change in VMT on Weekdays – Scenario 2

| Park Users | | Without Project | | | With Project | | | Difference #Trips |
|---|---|---|---|---|---|---|---|---|
| | | #Trips | Trip Length (Round-trip) | VMT | #Trips | Trip Length (Round-trip) | VMT | |
| General Park Users | Residents | 224 | 16.00 | 3,584 | 224 | 11.67 | 2,614 | -970 |
| Bike Park Users | Residents | 67 | 35.85 | 2,402 | 67 | 11.67 | 782 | -1,620 |
| | Non-residents | 112 | 45.36 | 5,080 | 112 | 19.25 | 2,156 | -2,924 |
| Curious Park Users | New Trips | - | - | - | 22 | 24.00 | 528 | 528 |
| | Redistributed | 44 | 24.00 | 1,056 | 22 | 24.00 | 528 | -528 |
| ***Total*** | | ***447*** | | ***12,122*** | ***447*** | | ***6,608*** | ***-5,514*** |

Source: Fehr & Peers, 2021.

### Table 14: Change in VMT on Weekends – Scenario 2

| Park Users | | Without Project | | | With Project | | | Difference #Trips |
|---|---|---|---|---|---|---|---|---|
| | | #Trips | Trip Length (Round-trip) | VMT | #Trips | Trip Length (Round-trip) | VMT | |
| General Park Users | Residents | 248 | 16.00 | 3,968 | 248 | 11.67 | 2,894 | -1,074 |
| Bike Park Users | Residents | 83 | 35.85 | 2,976 | 83 | 11.67 | 969 | -2,007 |
| | Non-residents | 165 | 45.36 | 7,484 | 165 | 19.25 | 3,176 | -4,308 |
| Curious Park Users | New Trips | - | - | - | 27 | 24.00 | 648 | 648 |
| | Redistributed | 54 | 24.00 | 1,296 | 27 | 24.00 | 648 | -648 |
| ***Total*** | | ***550*** | | ***15,724*** | ***550*** | | ***8,335*** | ***-7,389*** |

Source: Fehr & Peers, 2021.

# Step 3: Compare to the Significance Threshold

As a regional public facility project, the City of Carlsbad's *VMT Analysis Guidelines* (September 2020) state that the proposed project would be considered to have a significant transportation impact if it results in a net increase in VMT compared to the no project condition. Analysis proved that the project is not expected to increase regional VMT, because it provides park amenities to the local community, that forms the majority of park users; and reduces the travel distances of general park users and bike park users. Therefore, evidence suggests the project has a less-than-significant transportation VMT impact.

# Appendix: Bike Park Users Travel Distances to Bike Parks with and without the Project

**Table 1: Resident Bike Park User Round-Trip Travel Distance – Without Project**

| Before Study | | | |
|---|---|---|---|
| **Zip Code** | **Parks** | **Population** | **Round Trip Length** |
| 17109 | Sweetwater Bike Park | 6790 | 37.27 |
| 17801 | Sweetwater Bike Park | 6776 | 87.14 |
| 17808 | Sweetwater Bike Park | 6135 | 78.97 |
| 17809 | Sweetwater Bike Park | 2483 | 85.39 |
| 17810 | Sweetwater Bike Park | 5069 | 86.55 |
| 17811 | Sweetwater Bike Park | 6815 | 79.51 |
| 17813 | Sweetwater Bike Park | 4601 | 78.72 |
| 17900 | Sweetwater Bike Park | 7411 | 85.53 |
| 18000 | Sweetwater Bike Park | 3976 | 85.21 |
| 19803 | Sweetwater Bike Park | 4782 | 91.84 |
| 19804 | Sweetwater Bike Park | 4579 | 88.05 |
| 19806 | Sweetwater Bike Park | 12080 | 91.78 |
| 20013 | Sweetwater Bike Park | 13713 | 80.35 |
| 20014 | Sweetwater Bike Park | 7636 | 80.62 |
| 20015 | Sweetwater Bike Park | 4792 | 77.04 |
| 20016 | Sweetwater Bike Park | 9460 | 74.12 |
| 22100 | Sweetwater Bike Park | 9670 | 82.71 |
| 17109 | Greg Cox Bike Park | 6790 | 78.62 |
| 17801 | Greg Cox Bike Park | 6776 | 91.23 |
| 17808 | Greg Cox Bike Park | 6135 | 83.05 |
| 17809 | Greg Cox Bike Park | 2483 | 89.47 |
| 17810 | Greg Cox Bike Park | 5069 | 90.63 |
| 17811 | Greg Cox Bike Park | 6815 | 83.59 |
| 17813 | Greg Cox Bike Park | 4601 | 82.81 |
| 17900 | Greg Cox Bike Park | 7411 | 89.62 |
| 18000 | Greg Cox Bike Park | 3976 | 89.30 |
| 19803 | Greg Cox Bike Park | 4782 | 95.93 |
| 19804 | Greg Cox Bike Park | 4579 | 92.13 |
| 19806 | Greg Cox Bike Park | 12080 | 95.86 |
| 20013 | Greg Cox Bike Park | 13713 | 84.43 |
| 20014 | Greg Cox Bike Park | 7636 | 84.70 |
| 20015 | Greg Cox Bike Park | 4792 | 81.13 |
| 20016 | Greg Cox Bike Park | 9460 | 78.21 |
| 22100 | Greg Cox Bike Park | 9670 | 86.79 |
| 17109 | Pacific Highlands Ranch | 6790 | 25.21 |
| 17801 | Pacific Highlands Ranch | 6776 | 41.58 |
| 17808 | Pacific Highlands Ranch | 6135 | 32.33 |
| 17809 | Pacific Highlands Ranch | 2483 | 39.83 |
| 17810 | Pacific Highlands Ranch | 5069 | 40.99 |
| 17811 | Pacific Highlands Ranch | 6815 | 33.95 |
| 17813 | Pacific Highlands Ranch | 4601 | 33.17 |
| 17900 | Pacific Highlands Ranch | 7411 | 39.97 |
| 18000 | Pacific Highlands Ranch | 3976 | 39.65 |
| 19803 | Pacific Highlands Ranch | 4782 | 45.55 |
| 19804 | Pacific Highlands Ranch | 4579 | 42.40 |
| 19806 | Pacific Highlands Ranch | 12080 | 43.69 |

| Before Study | | | |
|---|---|---|---|
| **Zip Code** | **Parks** | **Population** | **Round Trip Length** |
| 20013 | Pacific Highlands Ranch | 13713 | 33.71 |
| 20014 | Pacific Highlands Ranch | 7636 | 33.98 |
| 20015 | Pacific Highlands Ranch | 4792 | 27.72 |
| 20016 | Pacific Highlands Ranch | 9460 | 26.15 |
| 22100 | Pacific Highlands Ranch | 9670 | 36.07 |
| **Overall Weighted Average** | | | |
| | | ***Sweetwater Bike Park*** | ***80.45*** |
| | | ***Greg Cox Bike Park*** | ***86.70*** |
| | | ***Pacific Highlands Ranch*** | ***35.85*** |

**Table 2: Resident Bike Park User Round-Trip Travel Distance – With Project**

| Before Study | | | |
|---|---|---|---|
| **Zip Code** | **Parks** | **Population** | **Round Trip Length** |
| 17109 | Veterans Memorial Park | 6790 | 18.41 |
| 17801 | Veterans Memorial Park | 6776 | 10.03 |
| 17808 | Veterans Memorial Park | 6135 | 11.56 |
| 17809 | Veterans Memorial Park | 2483 | 8.22 |
| 17810 | Veterans Memorial Park | 5069 | 7.30 |
| 17811 | Veterans Memorial Park | 6815 | 7.52 |
| 17813 | Veterans Memorial Park | 4601 | 9.17 |
| 17900 | Veterans Memorial Park | 7411 | 10.42 |
| 18000 | Veterans Memorial Park | 3976 | 10.47 |
| 19803 | Veterans Memorial Park | 4782 | 11.12 |
| 19804 | Veterans Memorial Park | 4579 | 7.97 |
| 19806 | Veterans Memorial Park | 12080 | 17.04 |
| 20013 | Veterans Memorial Park | 13713 | 9.21 |
| 20014 | Veterans Memorial Park | 7636 | 13.80 |
| 20015 | Veterans Memorial Park | 4792 | 16.76 |
| 20016 | Veterans Memorial Park | 9460 | 15.50 |
| 22100 | Veterans Memorial Park | 9670 | 7.74 |
| | | ***Weighted Average*** | ***11.67*** |

## Table 3: Non-Resident Bike Park User Round-Trip Travel Distance – Without Project

| Before Study | | | |
|---|---|---|---|
| Zip | Parks | Population | Round Trip Length |
| 17104 | Pacific Highlands Ranch | 3937 | 24.08 |
| 17106 | Pacific Highlands Ranch | 5227 | 18.71 |
| 17107 | Pacific Highlands Ranch | 2860 | 26.08 |
| 17108 | Pacific Highlands Ranch | 4646 | 24.95 |
| 17110 | Pacific Highlands Ranch | 11866 | 27.64 |
| 17303 | Pacific Highlands Ranch | 3073 | 16.76 |
| 17304 | Pacific Highlands Ranch | 5884 | 14.35 |
| 17305 | Pacific Highlands Ranch | 3104 | 16.83 |
| 17401 | Pacific Highlands Ranch | 5888 | 19.82 |
| 17403 | Pacific Highlands Ranch | 4997 | 21.72 |
| 17404 | Pacific Highlands Ranch | 6586 | 20.61 |
| 17501 | Pacific Highlands Ranch | 2970 | 22.76 |
| 17502 | Pacific Highlands Ranch | 3447 | 21.84 |
| 17601 | Pacific Highlands Ranch | 5131 | 27.83 |
| 17603 | Pacific Highlands Ranch | 2597 | 24.99 |
| 17604 | Pacific Highlands Ranch | 7450 | 25.22 |
| 17701 | Pacific Highlands Ranch | 5740 | 27.77 |
| 17702 | Pacific Highlands Ranch | 3032 | 24.76 |
| 18100 | Pacific Highlands Ranch | 6432 | 43.08 |
| 18200 | Pacific Highlands Ranch | 7374 | 45.24 |
| 18300 | Pacific Highlands Ranch | 2989 | 47.28 |
| 18400 | Pacific Highlands Ranch | 4089 | 46.79 |
| 18504 | Pacific Highlands Ranch | 7020 | 45.48 |
| 18507 | Pacific Highlands Ranch | 9076 | 54.93 |
| 18509 | Pacific Highlands Ranch | 5001 | 47.45 |
| 18510 | Pacific Highlands Ranch | 2801 | 49.61 |
| 18511 | Pacific Highlands Ranch | 5225 | 48.25 |
| 18512 | Pacific Highlands Ranch | 4446 | 51.33 |
| 18513 | Pacific Highlands Ranch | 9817 | 52.34 |
| 18514 | Pacific Highlands Ranch | 8254 | 56.22 |
| 18515 | Pacific Highlands Ranch | 5105 | 47.71 |
| 18516 | Pacific Highlands Ranch | 3978 | 52.11 |
| 18517 | Pacific Highlands Ranch | 4855 | 48.66 |
| 18518 | Pacific Highlands Ranch | 2941 | 50.45 |
| 18519 | Pacific Highlands Ranch | 5263 | 51.76 |
| 18601 | Pacific Highlands Ranch | 4668 | 51.44 |
| 18603 | Pacific Highlands Ranch | 6865 | 50.64 |
| 18608 | Pacific Highlands Ranch | 3224 | 55.83 |
| 18609 | Pacific Highlands Ranch | 5918 | 56.16 |
| 18610 | Pacific Highlands Ranch | 6851 | 58.57 |
| 18612 | Pacific Highlands Ranch | 3537 | 61.06 |
| 18613 | Pacific Highlands Ranch | 3773 | 53.93 |
| 18614 | Pacific Highlands Ranch | 6988 | 52.23 |
| 19203 | Pacific Highlands Ranch | 2836 | 60.62 |
| 19205 | Pacific Highlands Ranch | 6281 | 57.78 |
| 19206 | Pacific Highlands Ranch | 5236 | 56.79 |
| 19207 | Pacific Highlands Ranch | 8858 | 59.54 |
| 19208 | Pacific Highlands Ranch | 3291 | 57.32 |
| 19301 | Pacific Highlands Ranch | 6805 | 57.13 |
| 19302 | Pacific Highlands Ranch | 7965 | 55.35 |
| 19303 | Pacific Highlands Ranch | 7669 | 60.43 |
| 19403 | Pacific Highlands Ranch | 6280 | 54.90 |
| 19404 | Pacific Highlands Ranch | 3411 | 57.09 |
| 19405 | Pacific Highlands Ranch | 3969 | 52.57 |
| 19406 | Pacific Highlands Ranch | 4847 | 54.18 |
| 19501 | Pacific Highlands Ranch | 3843 | 55.83 |

| Before Study | | | |
|---|---|---|---|
| Zip | Parks | Population | Round Trip Length |
| 19502 | Pacific Highlands Ranch | 5702 | 55.64 |
| 19503 | Pacific Highlands Ranch | 5087 | 52.63 |
| 19601 | Pacific Highlands Ranch | 6514 | 56.08 |
| 19602 | Pacific Highlands Ranch | 5452 | 53.04 |
| 19701 | Pacific Highlands Ranch | 6945 | 52.52 |
| 19702 | Pacific Highlands Ranch | 5128 | 51.21 |
| 19805 | Pacific Highlands Ranch | 4523 | 47.31 |
| 19808 | Pacific Highlands Ranch | 5759 | 49.03 |
| 19809 | Pacific Highlands Ranch | 4328 | 50.43 |
| 19902 | Pacific Highlands Ranch | 4160 | 48.76 |
| 19903 | Pacific Highlands Ranch | 4292 | 51.32 |
| 19904 | Pacific Highlands Ranch | 7763 | 48.24 |
| 19905 | Pacific Highlands Ranch | 5123 | 47.50 |
| 20017 | Pacific Highlands Ranch | 3635 | 46.54 |
| 20018 | Pacific Highlands Ranch | 7664 | 45.05 |
| 20019 | Pacific Highlands Ranch | 7071 | 42.46 |
| 20020 | Pacific Highlands Ranch | 7480 | 49.48 |
| 20021 | Pacific Highlands Ranch | 6284 | 49.45 |
| 20022 | Pacific Highlands Ranch | 7587 | 48.44 |
| 20023 | Pacific Highlands Ranch | 3840 | 45.68 |
| 20024 | Pacific Highlands Ranch | 4095 | 44.44 |
| 20025 | Pacific Highlands Ranch | 5208 | 43.35 |
| 20026 | Pacific Highlands Ranch | 4482 | 44.63 |
| 20027 | Pacific Highlands Ranch | 17006 | 43.41 |
| 20028 | Pacific Highlands Ranch | 4022 | 47.47 |
| 20029 | Pacific Highlands Ranch | 7440 | 45.24 |
| 20304 | Pacific Highlands Ranch | 6451 | 50.75 |
| 20305 | Pacific Highlands Ranch | 6246 | 43.33 |
| 20306 | Pacific Highlands Ranch | 10952 | 48.60 |
| 20307 | Pacific Highlands Ranch | 7558 | 40.88 |
| 20309 | Pacific Highlands Ranch | 4178 | 41.78 |
| 17306 | Pacific Highlands Ranch | 3078 | 15.74 |
| 17104 | Greg Cox Bike Park | 3937 | 74.71 |
| 17106 | Greg Cox Bike Park | 5227 | 72.45 |
| 17107 | Greg Cox Bike Park | 2860 | 75.74 |
| 17108 | Greg Cox Bike Park | 4646 | 74.60 |
| 17110 | Greg Cox Bike Park | 11866 | 81.39 |
| 17303 | Greg Cox Bike Park | 3073 | 66.42 |
| 17304 | Greg Cox Bike Park | 5884 | 64.00 |
| 17305 | Greg Cox Bike Park | 3104 | 66.60 |
| 17401 | Greg Cox Bike Park | 5888 | 69.48 |
| 17403 | Greg Cox Bike Park | 4997 | 71.37 |
| 17404 | Greg Cox Bike Park | 6586 | 70.27 |
| 17501 | Greg Cox Bike Park | 2970 | 72.41 |
| 17502 | Greg Cox Bike Park | 3447 | 71.49 |
| 17601 | Greg Cox Bike Park | 5131 | 77.48 |
| 17603 | Greg Cox Bike Park | 2597 | 74.64 |
| 17604 | Greg Cox Bike Park | 7450 | 74.88 |
| 17701 | Greg Cox Bike Park | 5740 | 77.42 |
| 17702 | Greg Cox Bike Park | 3032 | 74.41 |
| 18100 | Greg Cox Bike Park | 6432 | 92.74 |
| 18200 | Greg Cox Bike Park | 7374 | 94.90 |
| 18300 | Greg Cox Bike Park | 2989 | 96.94 |
| 18400 | Greg Cox Bike Park | 4089 | 96.45 |
| 18504 | Greg Cox Bike Park | 7020 | 95.13 |
| 18507 | Greg Cox Bike Park | 9076 | 104.58 |
| 18509 | Greg Cox Bike Park | 5001 | 97.11 |
| 18510 | Greg Cox Bike Park | 2801 | 99.26 |

| Before Study | | | |
|---|---|---|---|
| Zip | Parks | Population | Round Trip Length |
| 18511 | Greg Cox Bike Park | 5225 | 97.90 |
| 18512 | Greg Cox Bike Park | 4446 | 100.99 |
| 18513 | Greg Cox Bike Park | 9817 | 101.99 |
| 18514 | Greg Cox Bike Park | 8254 | 105.87 |
| 18515 | Greg Cox Bike Park | 5105 | 97.36 |
| 18516 | Greg Cox Bike Park | 3978 | 101.76 |
| 18517 | Greg Cox Bike Park | 4855 | 98.31 |
| 18518 | Greg Cox Bike Park | 2941 | 100.10 |
| 18519 | Greg Cox Bike Park | 5263 | 101.41 |
| 18601 | Greg Cox Bike Park | 4668 | 101.09 |
| 18603 | Greg Cox Bike Park | 6865 | 100.29 |
| 18608 | Greg Cox Bike Park | 3224 | 105.48 |
| 18609 | Greg Cox Bike Park | 5918 | 105.81 |
| 18610 | Greg Cox Bike Park | 6851 | 108.22 |
| 18612 | Greg Cox Bike Park | 3537 | 110.71 |
| 18613 | Greg Cox Bike Park | 3773 | 103.58 |
| 18614 | Greg Cox Bike Park | 6988 | 101.89 |
| 19203 | Greg Cox Bike Park | 2836 | 108.52 |
| 19205 | Greg Cox Bike Park | 6281 | 105.68 |
| 19206 | Greg Cox Bike Park | 5236 | 104.69 |
| 19207 | Greg Cox Bike Park | 8858 | 107.44 |
| 19208 | Greg Cox Bike Park | 3291 | 98.67 |
| 19301 | Greg Cox Bike Park | 6805 | 106.78 |
| 19302 | Greg Cox Bike Park | 7965 | 105.00 |
| 19303 | Greg Cox Bike Park | 7669 | 108.33 |
| 19403 | Greg Cox Bike Park | 6280 | 104.56 |
| 19404 | Greg Cox Bike Park | 3411 | 104.99 |
| 19405 | Greg Cox Bike Park | 3969 | 102.22 |
| 19406 | Greg Cox Bike Park | 4847 | 103.84 |
| 19501 | Greg Cox Bike Park | 3843 | 103.74 |
| 19502 | Greg Cox Bike Park | 5702 | 103.55 |
| 19503 | Greg Cox Bike Park | 5087 | 102.28 |
| 19601 | Greg Cox Bike Park | 6514 | 103.99 |
| 19602 | Greg Cox Bike Park | 5452 | 100.95 |
| 19701 | Greg Cox Bike Park | 6945 | 102.17 |
| 19702 | Greg Cox Bike Park | 5128 | 100.28 |
| 19805 | Greg Cox Bike Park | 4523 | 96.96 |
| 19808 | Greg Cox Bike Park | 5759 | 98.68 |
| 19809 | Greg Cox Bike Park | 4328 | 100.08 |
| 19902 | Greg Cox Bike Park | 4160 | 96.66 |
| 19903 | Greg Cox Bike Park | 4292 | 99.23 |
| 19904 | Greg Cox Bike Park | 7763 | 97.90 |
| 19905 | Greg Cox Bike Park | 5123 | 97.16 |
| 20017 | Greg Cox Bike Park | 3635 | 96.19 |
| 20018 | Greg Cox Bike Park | 7664 | 93.35 |
| 20019 | Greg Cox Bike Park | 7071 | 92.12 |
| 20020 | Greg Cox Bike Park | 7480 | 92.80 |
| 20021 | Greg Cox Bike Park | 6284 | 90.80 |
| 20022 | Greg Cox Bike Park | 7587 | 89.79 |
| 20023 | Greg Cox Bike Park | 3840 | 87.03 |
| 20024 | Greg Cox Bike Park | 4095 | 85.80 |
| 20025 | Greg Cox Bike Park | 5208 | 84.70 |
| 20026 | Greg Cox Bike Park | 4482 | 91.59 |
| 20027 | Greg Cox Bike Park | 17006 | 93.06 |
| 20028 | Greg Cox Bike Park | 4022 | 89.49 |
| 20029 | Greg Cox Bike Park | 7440 | 91.57 |
| 20304 | Greg Cox Bike Park | 6451 | 92.10 |
| 20305 | Greg Cox Bike Park | 6246 | 84.69 |

| Before Study | | | |
|---|---|---|---|
| Zip | Parks | Population | Round Trip Length |
| 20306 | Greg Cox Bike Park | 10952 | 89.95 |
| 20307 | Greg Cox Bike Park | 7558 | 83.16 |
| 20309 | Greg Cox Bike Park | 4178 | 83.14 |
| 17306 | Greg Cox Bike Park | 3078 | 65.39 |
| 17104 | Sweetwater Bike Park | 3937 | 73.81 |
| 17106 | Sweetwater Bike Park | 5227 | 71.56 |
| 17107 | Sweetwater Bike Park | 2860 | 74.84 |
| 17108 | Sweetwater Bike Park | 4646 | 73.71 |
| 17110 | Sweetwater Bike Park | 11866 | 80.49 |
| 17303 | Sweetwater Bike Park | 3073 | 65.52 |
| 17304 | Sweetwater Bike Park | 5884 | 63.11 |
| 17305 | Sweetwater Bike Park | 3104 | 65.70 |
| 17401 | Sweetwater Bike Park | 5888 | 68.58 |
| 17403 | Sweetwater Bike Park | 4997 | 70.47 |
| 17404 | Sweetwater Bike Park | 6586 | 69.37 |
| 17501 | Sweetwater Bike Park | 2970 | 71.52 |
| 17502 | Sweetwater Bike Park | 3447 | 70.59 |
| 17601 | Sweetwater Bike Park | 5131 | 76.58 |
| 17603 | Sweetwater Bike Park | 2597 | 73.74 |
| 17604 | Sweetwater Bike Park | 7450 | 73.98 |
| 17701 | Sweetwater Bike Park | 5740 | 76.53 |
| 17702 | Sweetwater Bike Park | 3032 | 73.51 |
| 18100 | Sweetwater Bike Park | 6432 | 91.84 |
| 18200 | Sweetwater Bike Park | 7374 | 94.00 |
| 18300 | Sweetwater Bike Park | 2989 | 96.04 |
| 18400 | Sweetwater Bike Park | 4089 | 95.55 |
| 18504 | Sweetwater Bike Park | 7020 | 94.24 |
| 18507 | Sweetwater Bike Park | 9076 | 103.68 |
| 18509 | Sweetwater Bike Park | 5001 | 96.21 |
| 18510 | Sweetwater Bike Park | 2801 | 98.36 |
| 18511 | Sweetwater Bike Park | 5225 | 97.00 |
| 18512 | Sweetwater Bike Park | 4446 | 100.09 |
| 18513 | Sweetwater Bike Park | 9817 | 101.09 |
| 18514 | Sweetwater Bike Park | 8254 | 104.97 |
| 18515 | Sweetwater Bike Park | 5105 | 96.46 |
| 18516 | Sweetwater Bike Park | 3978 | 100.86 |
| 18517 | Sweetwater Bike Park | 4855 | 97.41 |
| 18518 | Sweetwater Bike Park | 2941 | 99.20 |
| 18519 | Sweetwater Bike Park | 5263 | 100.51 |
| 18601 | Sweetwater Bike Park | 4668 | 100.20 |
| 18603 | Sweetwater Bike Park | 6865 | 99.39 |
| 18608 | Sweetwater Bike Park | 3224 | 104.59 |
| 18609 | Sweetwater Bike Park | 5918 | 104.92 |
| 18610 | Sweetwater Bike Park | 6851 | 107.32 |
| 18612 | Sweetwater Bike Park | 3537 | 109.81 |
| 18613 | Sweetwater Bike Park | 3773 | 102.68 |
| 18614 | Sweetwater Bike Park | 6988 | 100.99 |
| 19203 | Sweetwater Bike Park | 2836 | 107.62 |
| 19205 | Sweetwater Bike Park | 6281 | 104.79 |
| 19206 | Sweetwater Bike Park | 5236 | 103.79 |
| 19207 | Sweetwater Bike Park | 8858 | 106.54 |
| 19208 | Sweetwater Bike Park | 3291 | 97.78 |
| 19301 | Sweetwater Bike Park | 6805 | 105.88 |
| 19302 | Sweetwater Bike Park | 7965 | 104.10 |
| 19303 | Sweetwater Bike Park | 7669 | 107.43 |
| 19403 | Sweetwater Bike Park | 6280 | 103.66 |
| 19404 | Sweetwater Bike Park | 3411 | 104.09 |
| 19405 | Sweetwater Bike Park | 3969 | 101.32 |

| Before Study | | | |
|---|---|---|---|
| **Zip** | **Parks** | **Population** | **Round Trip Length** |
| 19406 | Sweetwater Bike Park | 4847 | 102.94 |
| 19501 | Sweetwater Bike Park | 3843 | 102.84 |
| 19502 | Sweetwater Bike Park | 5702 | 102.65 |
| 19503 | Sweetwater Bike Park | 5087 | 101.38 |
| 19601 | Sweetwater Bike Park | 6514 | 103.09 |
| 19602 | Sweetwater Bike Park | 5452 | 100.05 |
| 19701 | Sweetwater Bike Park | 6945 | 101.27 |
| 19702 | Sweetwater Bike Park | 5128 | 99.39 |
| 19805 | Sweetwater Bike Park | 4523 | 96.06 |
| 19808 | Sweetwater Bike Park | 5759 | 97.79 |
| 19809 | Sweetwater Bike Park | 4328 | 99.19 |
| 19902 | Sweetwater Bike Park | 4160 | 95.76 |
| 19903 | Sweetwater Bike Park | 4292 | 98.33 |
| 19904 | Sweetwater Bike Park | 7763 | 97.00 |
| 19905 | Sweetwater Bike Park | 5123 | 96.26 |
| 20017 | Sweetwater Bike Park | 3635 | 95.30 |
| 20018 | Sweetwater Bike Park | 7664 | 92.45 |
| 20019 | Sweetwater Bike Park | 7071 | 91.22 |
| 20020 | Sweetwater Bike Park | 7480 | 91.91 |
| 20021 | Sweetwater Bike Park | 6284 | 89.90 |
| 20022 | Sweetwater Bike Park | 7587 | 88.90 |
| 20023 | Sweetwater Bike Park | 3840 | 86.13 |
| 20024 | Sweetwater Bike Park | 4095 | 84.90 |
| 20025 | Sweetwater Bike Park | 5208 | 83.80 |
| 20026 | Sweetwater Bike Park | 4482 | 90.69 |
| 20027 | Sweetwater Bike Park | 17006 | 92.17 |
| 20028 | Sweetwater Bike Park | 4022 | 88.60 |
| 20029 | Sweetwater Bike Park | 7440 | 90.67 |
| 20304 | Sweetwater Bike Park | 6451 | 91.20 |
| 20305 | Sweetwater Bike Park | 6246 | 83.79 |
| 20306 | Sweetwater Bike Park | 10952 | 89.05 |
| 20307 | Sweetwater Bike Park | 7558 | 82.26 |
| 20309 | Sweetwater Bike Park | 4178 | 82.24 |
| 17306 | Sweetwater Bike Park | 3078 | 64.50 |
| **Overall Weighted Average** | | | |
| | ***Sweetwater Bike Park*** | | ***45.36*** |
| | ***Greg Cox Bike Park*** | | ***93.58*** |
| | ***Pacific Highlands Ranch*** | | ***92.68*** |

## Table 4: Non-Resident Bike Park User Round-Trip Travel Distance – With Project

| After Study | | |
|---|---|---|
| **Parks** | **Population** | **Round Trip Length** |
| Veterans Memorial Park | 491269 | ***19.25*** |