

Final Report

Trail Visitor User Survey

A Pilot Study of Visitation at Hellman Park and Turnbull Canyon

Whittier, California



April Garbat, Citizens Technical Advisory Committee Member

Andrea Gullo, Executive Director

Lizette Longacre, Ecologist

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Figure 1: Administering survey at Turnbull Canyon Trail, Saturday October 20, 2012, 9:30 am

Front Cover: October 2012, Peppergrass and Mariposa Trails at Hellman Park

Executive Summary

Introduction and Purpose

The Puente Hills Habitat Preservation Authority (Habitat Authority), a local government agency, manages an open space Preserve of over 3,800 acres in Los Angeles County with inherent biological and notable recreational values.

In response to an observed, qualitative increase in public use of the Preserve, this pilot study was designed to quantify the change in visitation compared to the 2006 Park Visitor User Survey conducted in the Preserve by the University of Southern California (Martino, Longcore, Wolch, 2006). During this pilot study, information gathered at Hellman Park and Turnbull Canyon in Whittier may help form the monitoring methods for a future Preserve-wide study of recreational levels. This new information about the number of visitors, use times/days of the week, and mode of transportation to the trailheads, also helps to shed light on recent neighborhood parking issues caused from the influx of Preserve visitors over the past few years, especially at Hellman Park and Turnbull Canyon.

Data Collected and Compared

	Visitation Rate per Day	Percentage Hikers/Runners	Percentage Bikers	Percentage Bringing Dogs	Percentage Male	Percentage Female
2006						
Hellman Park	40.75	71.26	19.38	9.38	75.78	24.22
Turnbull Canyon	73	50	41.07	8.93	78.42	21.58
2012						
Hellman Park	366	97.4	2.0	10.2	45.4*	50.1*
Turnbull Canyon	282	65.1	31.7	6.6	62.6*	32.8*

* The gender of children was not recorded. At Hellman Park, 4.3% of visitors were children and 0.2% were unknown. At Turnbull Canyon, 4.3% of visitors were children and 0.3% were unknown.

Conclusions

Visitation at Hellman Park increased 798% while visitation at Turnbull Canyon Trailhead increased 286%. Given that park use has increased, and the park hours and parking conditions have remained constant during the time between these studies, it is understandable that the adjacent neighborhoods have noticed an increase in parking on their streets. Further study is needed on a Preserve-wide basis to determine the level of recreational opportunity change, impacts to trails, and effects on the flora and fauna throughout the various seasons.

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Introduction and Literature Review

Introduction

The Puente Hills Habitat Preservation Authority (Habitat Authority) is a joint powers authority established pursuant to California Government Code Section 6500 *et seq.* with a Board of Directors consisting of the City of Whittier, County of Los Angeles, Sanitation Districts of Los Angeles County, and the Hacienda Heights Improvement Association. According to its mission, the Habitat Authority is dedicated to the acquisition, restoration, and management of open space in the Puente Hills for preservation of the land in perpetuity, with the primary purpose to protect the biological diversity. Additionally, the agency will endeavor to provide opportunities for outdoor education and low-impact recreation. The Habitat Authority's jurisdiction extends within eastern Los Angeles County approximately from the intersection of the 605 and 60 freeways in the west to Harbor Boulevard in the east, and owns and/or manages over 3,800 acres of wildland open space, the Puente Hills Preserve (Preserve).

The Preserve is located within about a one-hour drive from approximately one-half of the state's population. It is almost entirely surrounded by urbanization, but it connects to existing open space leading to the Chino Hills in the east. It is an integral part of the Puente-Chino Hills Wildlife Corridor, an unbroken chain of natural habitat extending nearly 31 miles from the Cleveland National Forest in Orange County to the west end of the Puente Hills above Whittier Narrows. Covering more than 30,000 acres of land, the Puente-Chino Hills support a wide variety of habitats. In addition, the Preserve has a high species diversity supporting representative species from all trophic levels¹, and is a fully functioning ecosystem with global² and national³ significance. This is a public resource benefitting not only the wildlife that live here, but also the people that live around it. It provides a range of recreation opportunities and activities, including hiking, jogging, mountain biking, horseback riding, nature appreciation, and outdoor education as well as ecosystem services. To this end, the Habitat Authority is charged with balancing natural resource protection and low-impact recreation.

The main purpose of a Preserve-wide user survey would be to determine current trail user recreation levels and habits in an effort to better manage the land. That information could then be compared to the 2006 Park Visitor User Survey conducted in the Preserve by the

¹ 4 amphibians, 9 reptiles, 124 birds, and 30 mammals

² The Puente Hills area preserves a microcosm of the California Floristic Province, an identified biodiversity hot spot in North America and a genetic reserve for the continent. As a result, the Preserve is regionally and globally significant.

³ Because the Puente Hills contains large stands of California walnut woodlands, it has been recognized by the National Park Service as being nationally significant. Also, its coastal sage scrub (roughly 860 acres) is federally designated critical habitat for the coastal California gnatcatcher, a protected species under the Endangered Species Act.

University of Southern California (Martino, Longcore, Wolch, 2006). Given the Habitat Authority's limited resources in conducting the data collection, a Preserve-wide study was not feasible. Therefore, this pilot survey was developed to determine the currently most active recreational times of the day at two survey locations, the Hellman Park Trailhead and Turnbull Canyon Trail access points. Potentially, future surveys could collect data at the peak use times identified by this pilot study, throughout the entire Preserve at six locations (the two previously identified plus four others) concurrently.

In the short-term, results from this survey quantify the change in visitation from the 2006 survey, and help shed light on recent neighborhood parking issues at these two locations reportedly caused from the influx of Preserve visitation over the past few years.

Results Summary of the 2006 Park Visitor User Survey

The 2006 Park Visitor User Survey was a lengthy in-depth survey. It focused largely on visitor attitudes and asked many questions of each visitor surveyed. Conducted in October 2005, four days⁴ worth of surveys from 6 a.m. to 7 p.m. identified the activity level of the trailheads in the order of least to most busy as follows: Sycamore Canyon⁵, Powder Canyon, Hellman Park, Arroyo Pescadero, Hacienda Hills and Turnbull Canyon.

A total of 371 surveys were completed over a total count of 916 users for all four days. The actual visitor count data was 163 at Hellman Park and 292 at Turnbull Canyon. In Hellman Park approximately 71.26% of the people were hikers and runners, 19.38% were bikers, and 9.38% were dog walkers. In Turnbull Canyon, 50% of the visitors were hikers and runners, 41.07% were bikers and 8.93% were dog walkers. Also, it identified 70% of Hellman Park visitors as driving to the trailhead, and 71% to Turnbull Canyon. Bicyclists accounted for 7.8% of the visitors to Hellman Park and 22.6% to Turnbull. Walkers accounted for 17.6% of the visitors to Hellman and 6.5% to Turnbull. Finally, 3.9% took public transportation to Hellman. Additionally, compared to females there were more male visitors with 75.78% at Hellman and 78.42% at Turnbull. Additionally, the mean average at all trailheads surveyed for the total time spent/intended to spend on the trails was 1.8 hours.

Other Visitor Surveys

No other local park visitor surveys were found for comparison purposes. However, the National Park Service (NPS) and National Forest Service (FS) have quite an extensive park visitor survey program, but unfortunately, their parks and forests are quite different in nature given the

⁴Friday October 14, Saturday October 15, Friday October 21, and Sunday October 23, 2005.

⁵ Sycamore Canyon was not surveyed because the visitation was too low. On the first day of the survey and the morning of the second day, not a single person visited the trailhead so they eliminated it from their survey efforts.

differences in sizes, design, operations, and international destination appeal. Comparing their visitor surveys results wouldn't yield significant information for local recreational trends helpful for Habitat Authority management purposes. Yet, the NPS system of surveys is one that deserves study because of their history in capturing relevant data for their parks.

Since 1988, the NPS has conducted over 250 in-depth visitor studies. Their surveys gather information such as: demographics, such as age, zip code or country of residence, education, length of stay, number of visits to the park unit, languages spoken and ethnicity; trip planning; travel expenditures; service and facility use; service and facility importance and quality ratings; preferences for future services and facilities; opinions about resource management issues; and trail use conditions. The information gathered is used in various valuable ways such as: park superintendents can use the information in preparing required planning documents (e.g. General Management Plans, interpretive plans, and hiring justifications); planners and designers can use the data to improve the design of visitor facilities such as campgrounds or trails; interpretive managers can tailor programs to match visitor interests and needs; resource managers can combine visitor data with biological data to better protect park resources; concession managers can determine whether the services they offer are meeting visitor needs; and local business can determine how visitors are contributing economically to the area.

Importance of Preservation

The Habitat Authority is mainly centered on preservation of the Preserve, and protecting the biological diversity is its primary mission. The Preserve is one of the few remaining open spaces in the Los Angeles Metropolitan Area, and is biologically significant as described earlier. Its preservation of large blocks of open space increases the probability that species populations will remain relatively stable, ensuring long-term sustainability. Where recreation is permitted, trails are an important natural resource protection tactic of land management preservation efforts. Understanding activities and demands on the trails assists with trail management, and reduction of habitat fragmentation or isolation. Fragmentation contributes to the overall degradation of the environment threatening habitat used by breeding, foraging, or migrating wildlife. In combination with biological surveys, understanding the trail user and their patterns is necessary in applying other natural resource management tactics such as education, law enforcement, or closures.

Importance of Recreation

According to California State Parks' Outdoor Recreation Plan of 2008, the California Department of Finance shows that the state's population increased at a rate near 11% from the 1990's to 2008, and projects for 2020 increasing nearly 16% to over 44 million Californians. While U.S.

Census Data shows that from 2000 to 2010, Los Angeles County's population increased 3% from 9,519,338 to 9,818,605 people. Increases in the population pressures and reduces open spaces for parks and biological resources. In 2000, the County had an average of 2,344 persons per square-mile, while the state had an average of 217, and the nation an average of 79. In 2010 the population per square-mile in Los Angeles County was 2,418 with state and national averages much lower. As the stress of jobs, traffic, and urban noise increases so does the need to escape and parks are the perfect avenue for that especially during these recent economic challenges. Population is an important trend impacting trails as more and more people need recreational outlets as an urban respite.

Recreation is important for our health and children's wellbeing. The prevalence of obesity is a health concern for children as well as adults. In 2006, 26% of the state's youth were overweight and approximately 34% of adults were obese (CA State Parks, 2008). Compounding this poor physical health, between 1999 and 2005 children between the ages of 8 and 18 years spent an average of nearly 6.5 hours a day with electronic media (CA State Parks, 2008). It is widely recognized that spending time in nature benefits people, especially children. It promotes health not only physically but intellectually, emotionally, socially, and spiritually, where as a lack of exposure to nature has been directly linked to depression, obesity and attention disorder in children, a phenomenon called nature deficit disorder (Louv, 2005).

Methodology

The survey instrument was developed by April Garbat in consultation with Andrea Gullo and modeled in part after the previously used trail user survey conducted in 2005 (Martino *et al.*, 2006).

Survey Forms

The main objective of the survey was to obtain information on the following:

Trail Use

- Number of visitors including peak hours
- Activities (bike, hike/run, dogs, photography, horseback-riding)
- Group verses individual use
- Duration of Visit

Parking Area Occupation

- Numbers of cars in the lot/turnout per hour
- Number of cars used to access the trails

Demographics

- Gender
- Origination of trip

There were four data forms in all: 1) entrance individual user form, 2) entrance group user form, 3) exit user form, and 4) parking lot count form (see Appendix A). Each form was put on four separate clipboards and changed out with each shift.

The survey forms were developed to be quick, simple, and easy to fill out during peak visitation, as well as to not impact the quality of the trail users' experiences on the trail. The forms were mostly in a format that allowed observers to count Preserve visitors and activities however, each visitor entering and exiting was asked two or three questions.

Survey Administration

Training for the volunteers and staff was provided by attending one of the three webinars offered and was also offered in-person for some. Additionally, survey instructions (see Appendix A) were provided in writing to all volunteers.

Surveys were performed on the following five days:

- Friday October 12, 2012
- Sunday October 14, 2012
- Tuesday October 16, 2012
- Friday October 19, 2012 and
- Saturday October 20, 2012

The forms were filled out by surveyors consisting of volunteers, Authority staff, Rangers, and members of the Habitat Authority's Citizens Technical Advisory Committee over the five days. At least one surveyor was located at the Hellman Park Trailhead⁶ (Hellman) and Turnbull Canyon Trail⁷ (Turnbull) access point, beginning at 6:30 a.m. (approximately thirty minutes before sunrise and ½ hour later than the 2006 Survey began) and continuing until 7 p.m. (approximately forty minutes after sunset). Oftentimes more than one person and up to five were conducting the survey. With six shifts in a day, and sixty shifts overall, a total of 222.5 (81.5%) volunteer hours were contributed along with 50.5 (18.5%) staff and Ranger hours totaling 273 hours. Each surveyor had a name tag or badge affiliating them with the Habitat Authority, and a sign labeled Trail User Survey was displayed nearby. Neither money, treats nor giveaways were offered to volunteers or user participants.

⁶Located approximately at 5700 Greenleaf, Whittier, CA 90601.

⁷Located on Turnbull Canyon Road in Whittier approximately ¼ mile east of the most eastern terminus of Beverly Blvd.

Entering visitors were greeted and asked two questions geared to determine if they drove and where they came from (Figure 2). Surveyors noted the visitors' gender, if children accompanied them, and what activity the users were engaging in, i.e. horse-back riding, biking, hiking/running, and photography. It was also noted if the users brought a dog. Exiting users were asked what trail they started at, how long they were on the trails, and if they drove or not. Most participants answered the questions except a few such as bicyclists travelling at high speed that did not stop. Each exchange lasted less than a minute unless the visitor cared to talk more or ask questions. Participants were thanked for their responses.



Figure 2: Turnbull Canyon, Saturday October 20, 9:35 am

The parking lot form was filled out at the top of each hour. Cars were counted in the lot of Hellman Park, and in a dirt area near the Turnbull Canyon trail entrance north of Turnbull Canyon Road as delineated on a map that was provided to surveyors. Surveyors were asked to not park in the lots so as to not skew the data. Conditions that may have affected the results of the Friday, October 12, 2012 survey were due to the weather. It rained the day before, and the Preserve closes trail access for forty-eight hours after it rains, if rain totals exceed one-quarter inch, if rainy conditions leave the Preserve in an unsafe condition, or if the trails are extremely muddy and use of which would damage the tread. However, none of these conditions were met so the Preserve remained open the day after it rained. Visitors' uncertainty if the Preserve would be open, plus the cloudy and cool weather on Friday may have detracted visitors resulting in a slightly lower attendance.

Another condition that may have affected the results of the survey was that Turnbull Canyon Trail was closed intermittently for habitat restoration the week before the survey began. On the first day of the survey, the trail closure signs for the habitat restoration were still in place at the entrance for the first half of the day. However, since trail survey volunteers were standing at the entrance and the entry was not being blocked, as was the case for the week prior, many people most likely didn't notice the signs. Also, there was an article in the Whittier Daily Newspaper on September 25, 2012 about the Turnbull closures. Additionally, on dates between September 24 and October 8 the outgoing phone message on the Habitat Authority's trail hot-line advised the public that while all trails were open to the public, parts of Turnbull would be closed periodically due to habitat restoration. On October 8 the message was changed to advise that the area was open but that there would be intermittent truck traffic from the restoration project. The message was not changed until after the survey was completed. Visitors' uncertainty if the trails at Turnbull Canyon would be open may have detracted visitors resulting in a slightly lower attendance at Turnbull, and a remote chance that attendance at Hellman would be elevated as a result.

Furthermore, one last condition that may have affected visitation levels was that approximately one week prior to the survey Southern California Edison (SCE) posted signs at the Turnbull Trail entrance (Figure 3), and elsewhere in the Preserve closer to Hacienda Heights, indicating a construction zone and that trails may be closed. After coordination with SCE, signs with language referring to "trail closures" were removed on October 8 since the intent of the sign was to advise trail users that there would be intermittent truck traffic on the trails for the next year. Signs that remained were ones advising trail users of a construction zone. Visitors' uncertainty of the status of the trails may have detracted visitors resulting in a slightly lower attendance.



Figure 3: SCE Construction Zone sign displayed at Turnbull Canyon and surrounding areas

Data Analysis

At the end of the survey, April Garbat collected all data and entered it into Excel to run statistical analyses with quality control and additional statistical analyses conducted by Lizette Longacre. To standardize the data collected by numerous surveyors, the following decisions/assumptions were made during data entry/analysis:

- “Did they drive” entries:
 - Only one response was provided per group and per individual. Therefore the total number of responses does not equal the total number of cars, as a group of people may have driven more than one car.
- “Where did you drive from” entries:
 - If “local” was reported, it was entered as “Whittier”
 - If one city was reported for a group, all individuals were assumed to be from that city.
 - If more than one city was reported for a group and fewer cities were reported than group members, the remaining cities were listed as “unknown”.
- Regarding “Activities Observed”:
 - Only one activity was assigned per individual. On the few occasions that two activities were reported, the main activity (hike/run or bike) was counted toward the activity results and the secondary activity (photos, horse, dog or other) is only discussed in the text.
 - Given that nearly all (greater than 90%) visitors at Hellman reported “hike/run” as their activity, if the only activity listed was “dog”, or if the main activities of hike/run or bike were not listed, the main activity was entered as “hike/run”.
 - Given that trail users entering at Turnbull reported both “bike” and “hike/run” greater than 30% of the time, assumptions on the main activity (bike or hike/run) could not be made. Therefore, if the only activity listed was “dog”, or if no main activity was listed, the main activity was entered as unknown.
 - Children were given the same activity as their parents, if not specifically noted as different.
- Exit Survey data collection:
 - If information on what trail the visitor started from wasn’t collected, unknown was entered.
 - Length of time within the Preserve was self-reported and rounded by report authors to the nearest 15 minutes.

Results confidence

The report's margin of error is 2% at a 95% confidence level. The margin of error is a statistic expressing the amount of random sampling error in a survey's results. The confidence level is a statistical measure of the number of times out of 100 that test results can be expected to be within a specified range. For example, a confidence level of 95% means that the result of an action will probably meet expectations 95% of the time. Data gaps existed with a few missed visitors, a few visitors who declined the survey (approximately 10 visitors), and surveyor error (approximately 50 illegible notes or errors in over 3,200 respondents).

Results and Discussion

Trail Use

Number of Visitors

A total of 3,236 visitors were counted at both trailheads over all 5 days (1,828 at Hellman, 1,408 at Turnbull). At Hellman Park, visitation increased from 40.75 visitors per day to 366 visitors per day; a 798% increase. At Turnbull Canyon, visitation increased from 73 visitors per day to 282 visitors per day; a 286% increase. Higher visitation rates occurred during the weekends as compared to weekdays for both locations (Figure 4). At Hellman Park, weekday usage peaked twice per day from 8:00-10:00 am (0800-1000) and again from 4:30-7:00pm (1630-1900) as compared to twice per day from 8:00-10:00am and again from 2:00-7:00pm (1400-1900) at Turnbull Canyon. During the weekend, however, peak usage at both Hellman and Turnbull was during the morning between 08:00 and 10:00am (Figures 5 and 6).

Figure 4: Total Number of Visitors per Date by Trailhead

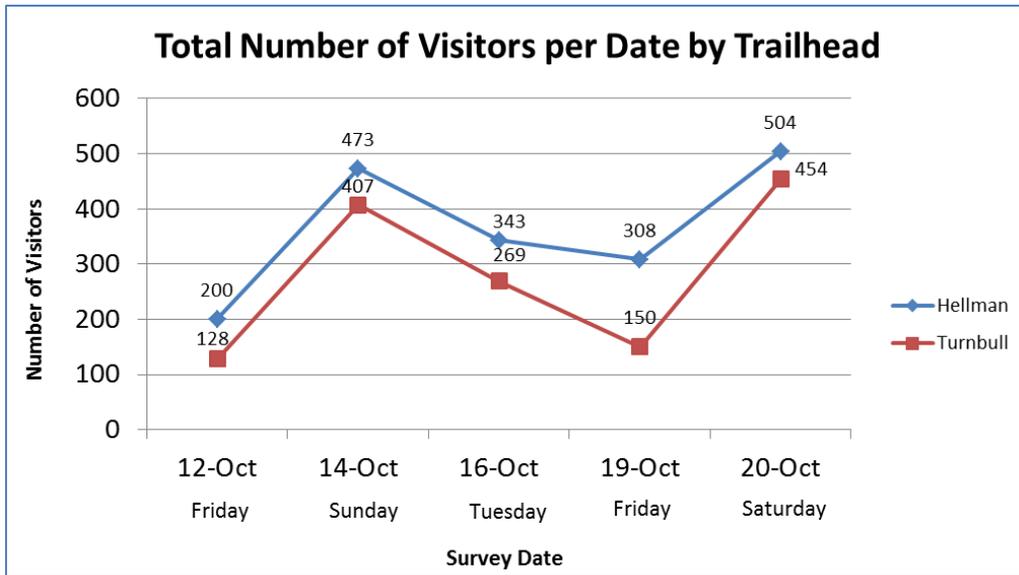


Figure 5: Number of Visitors per Time Period at Hellman Park

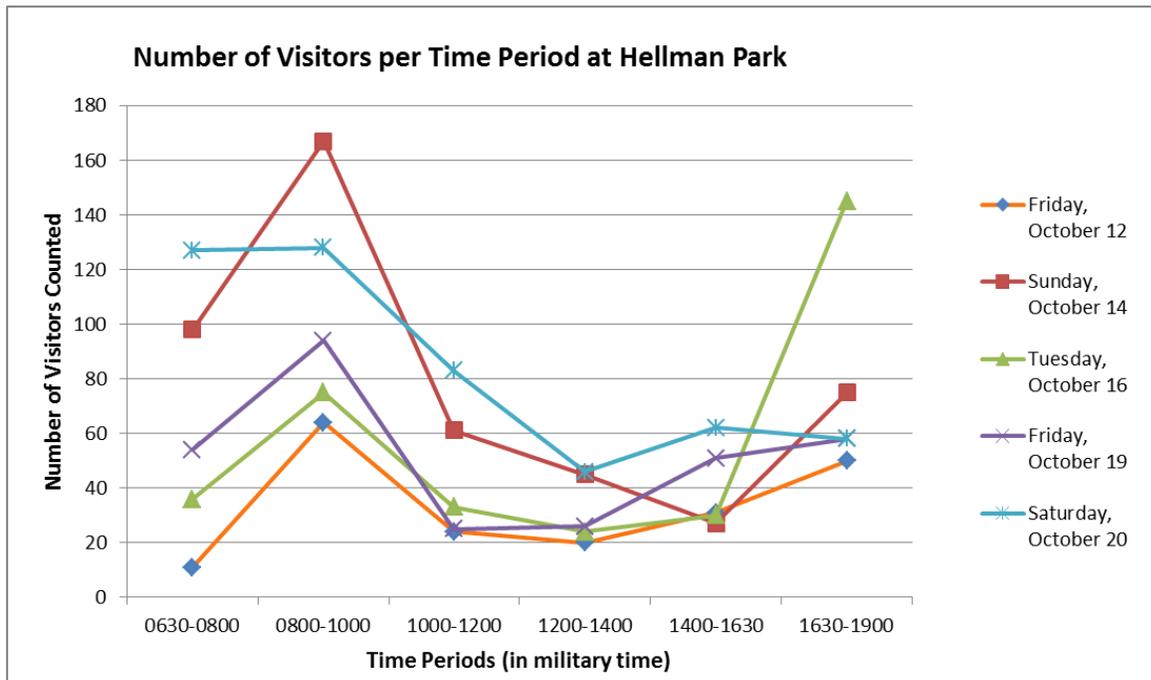
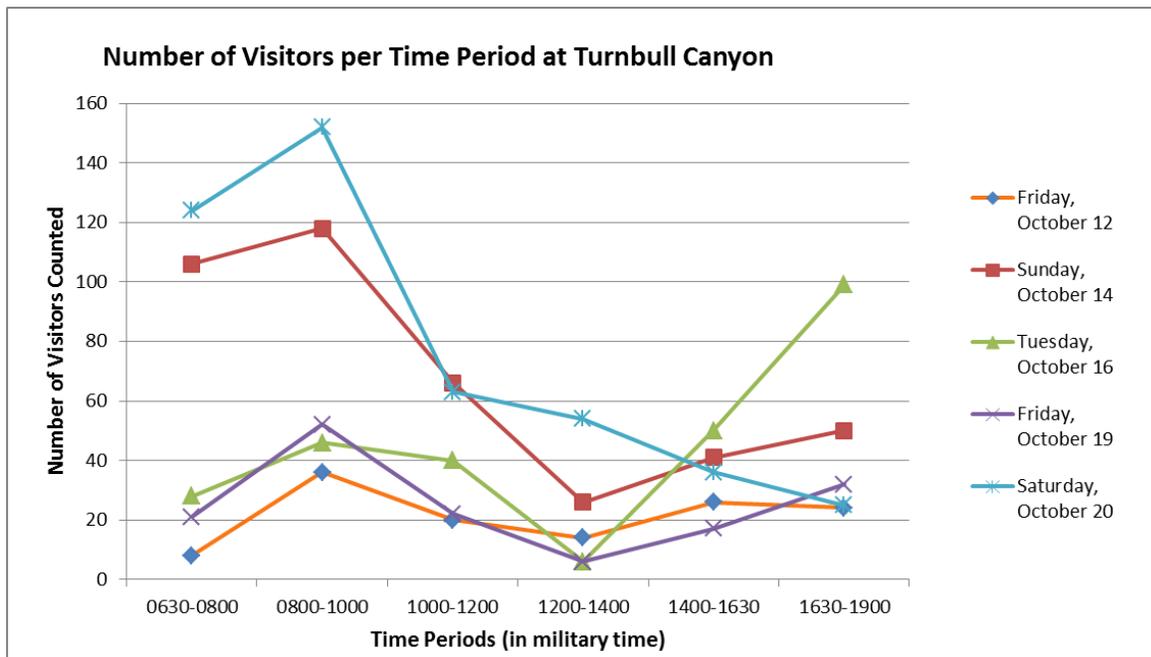


Figure 6: Number of Visitors per Time Period at Turnbull Canyon

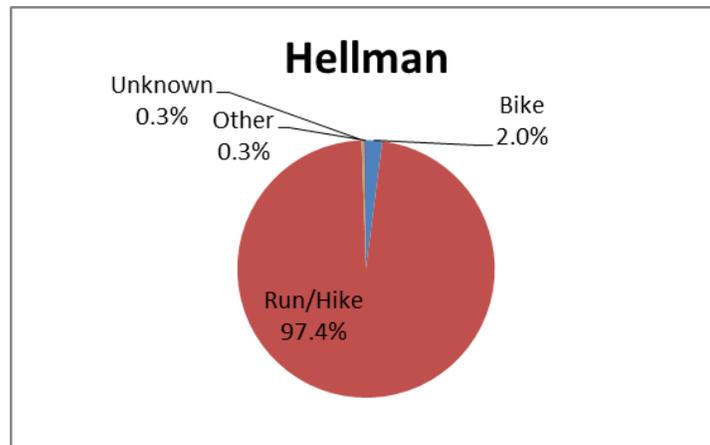


Activities (bike, hike/run, photography, horseback-riding, dogs):

Hellman Park

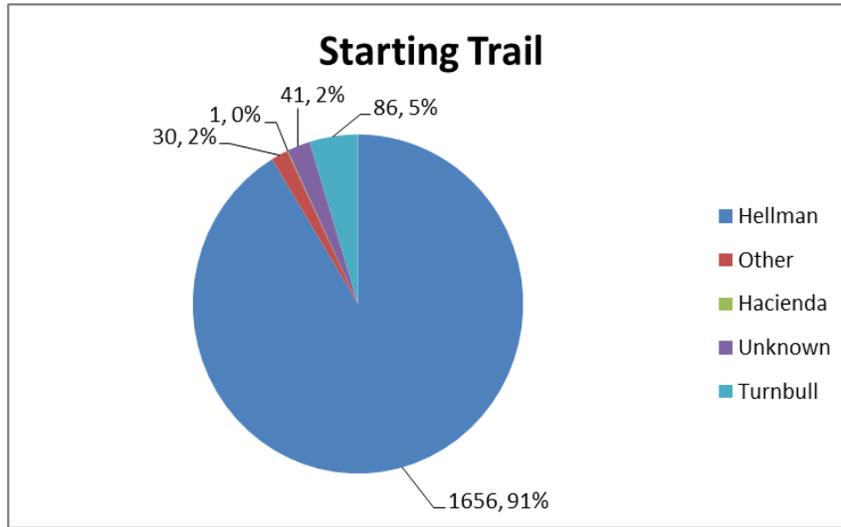
Hiking/running was the predominant activity engaged in by 1,781 (97.4%) of the users, followed by 37 (2.0%) bikers, 5 (0.3%) other activities (including 1 collecting bugs, 1 sitting in car, 3 kids with water guns), and 5 (0.3%) unknown activities (Figure 7). The percentage of runners/hikers increased from 71.26% in 2006 to 97.4% in 2012 and the number of bikers decreased from 19.38% in 2006 to 2.0% in 2012. As a side note, on six (6) occasions, people that were there for hiking/running also reported to be taking pictures (counted as hiking/running for reporting purposes). No horse-back riding was observed at Hellman Park during the survey period. Out of the 1,054 individuals/groups entering at the Hellman Park trailhead, 107 (10.2%) brought at least 1 dog with them.

Figure 7: Hellman Park Total Activity Percentages



Of the visitors exiting at Hellman Park, 91% began their hike, bike ride, or other activity at the same trailhead. A few began at Turnbull Canyon or Sycamore Trail, Mar Vista, or 7th Avenue (Figure 8).

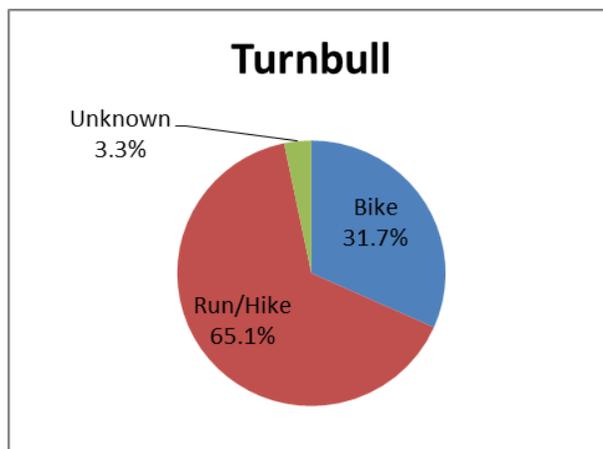
Figure 8: Reported Starting Trail for Hellman Park (Exit Survey)



Turnbull Canyon

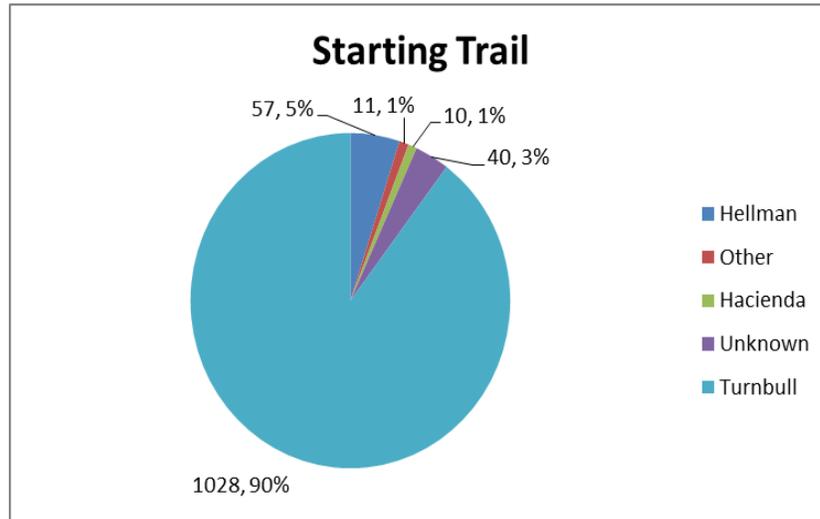
Hiking/running was the predominant activity engaged in by 916 (65.1%) of the users, followed by 446 (31.7%) bikers, and 46 (3.3%) unknown activities (Figure 9). No horse-back riding was observed at Turnbull during the survey period. The percentage of runners/hikers increased from 50.0% in 2006 to 65.1% in 2012 and the number of bikers decreased from 41.07% in 2006 to 31.7% in 2012. Out of the 809 individuals/groups entering at the Turnbull Canyon trailhead, 53 (6.6%) brought at least 1 dog with them.

Figure 9: Turnbull Canyon Total Activity Percentages



Of the visitors exiting at Turnbull Canyon, 90% began their hike, bike ride, or other activity at the same location. A few began at Hellman, 7th Avenue, Friendly Hills, or Hacienda Heights (Figure 10).

Figure 10: Reported Starting Trail for Turnbull Canyon (Exit Survey)



Group Verses Individual Use

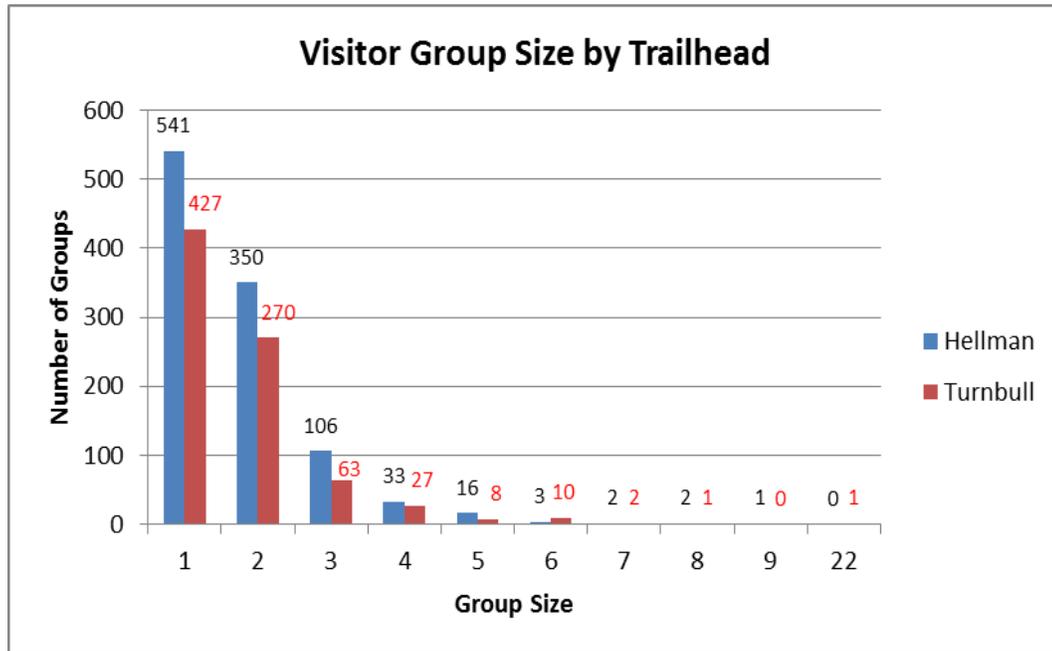
Hellman Park

Of the 1,828 users entering at Hellman Park, 541 (30.0%) visited alone and 1,287 (70.0%) visited in groups of varying sizes (513 groups). Out of the 513 groups, there were 350 pairs, 106 triplets and 57 groups of four (4) or more (Figure 11). The largest group size was nine (9) and only occurred once. Of the adults, individual users were predominantly male (60.0%) while group users were predominately female (55.0%).

Turnbull Canyon

Of the 1,408 users entering at Turnbull, 427 (30.0%) visited alone and 981 (70.0%) visited in groups of varying sizes (382 groups). Out of the 382 groups, there were 270 pairs, 63 triplets and 49 groups of four (4) or more (Figure 11). The largest group size was 22 and only occurred once. Of the adults, individual users (83.0%) and group users (54.0%) were predominately male.

Figure 11: Visitor Group Size by Trailhead



Duration of Visit

Visitors self-reported the length of their visit. Some had timed their workout or hike, giving very accurate times, but others estimated. At least 80% of Preserve visitors stay an hour and a half or less (Figure 12; Figure 13). Most visitors reported staying 1 hour (34% at Hellman and 37% at Turnbull) followed by 1 ½ hours (17% at Hellman and 16% at Turnbull). The longest reported visit was 6 hours (one visitor). One visitor exiting at Turnbull reported to have hiked over to Hacienda Heights the day prior to visit and stay the night with a friend, and hiked back the following day.

Figure 12: Hellman Park, Duration of Visit (Exit Survey)

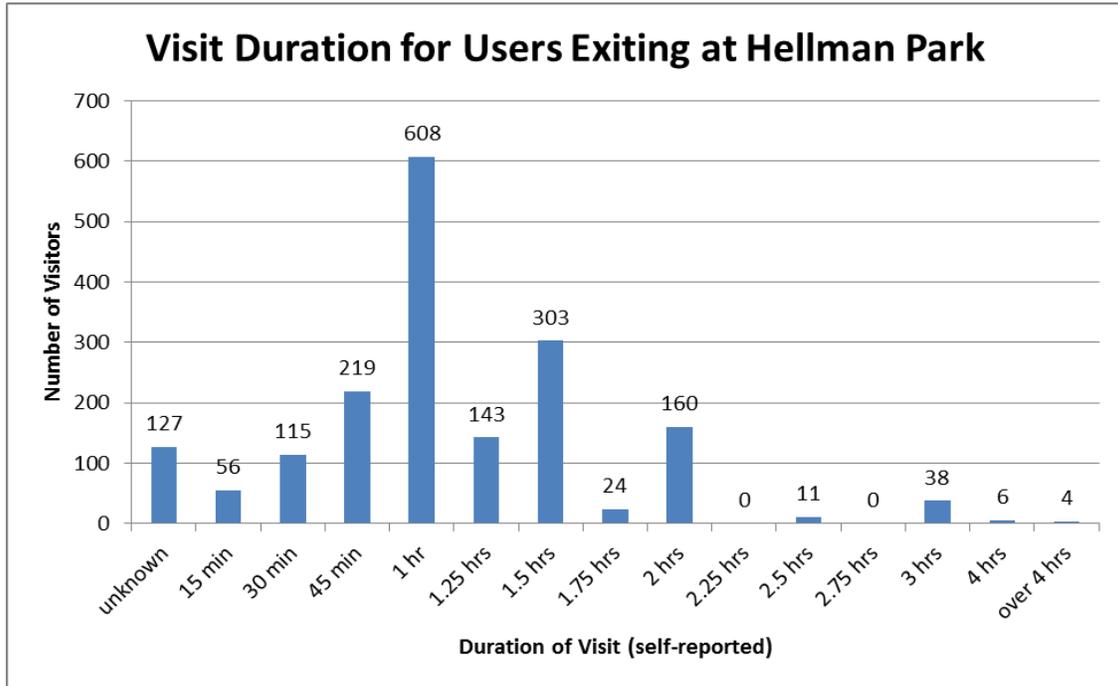
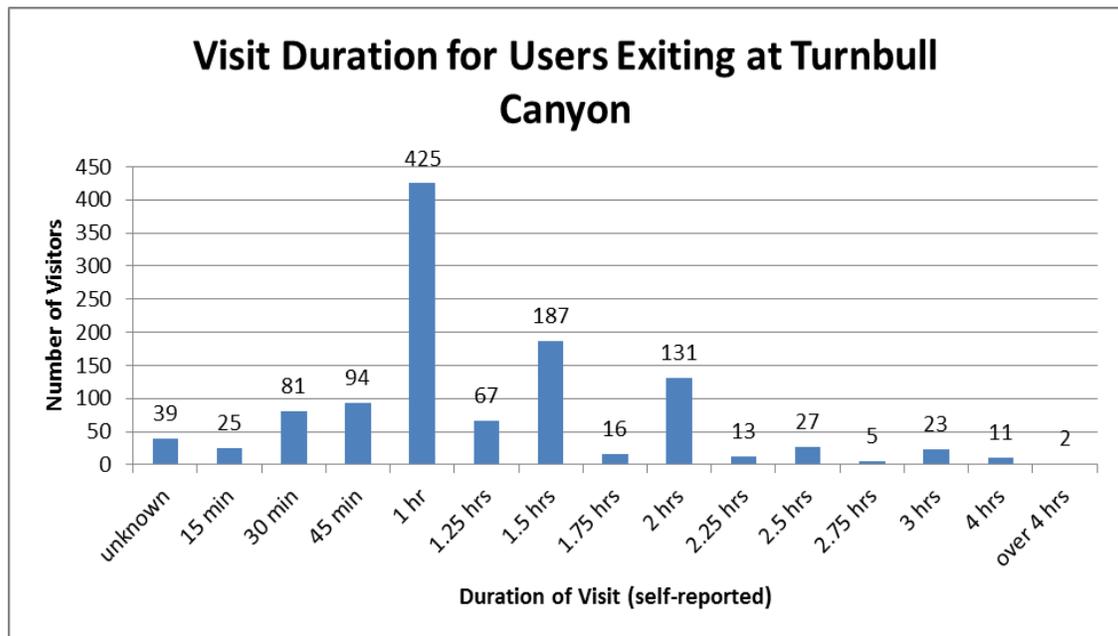


Figure 13: Turnbull Canyon, Duration of Visit (Exit Survey)



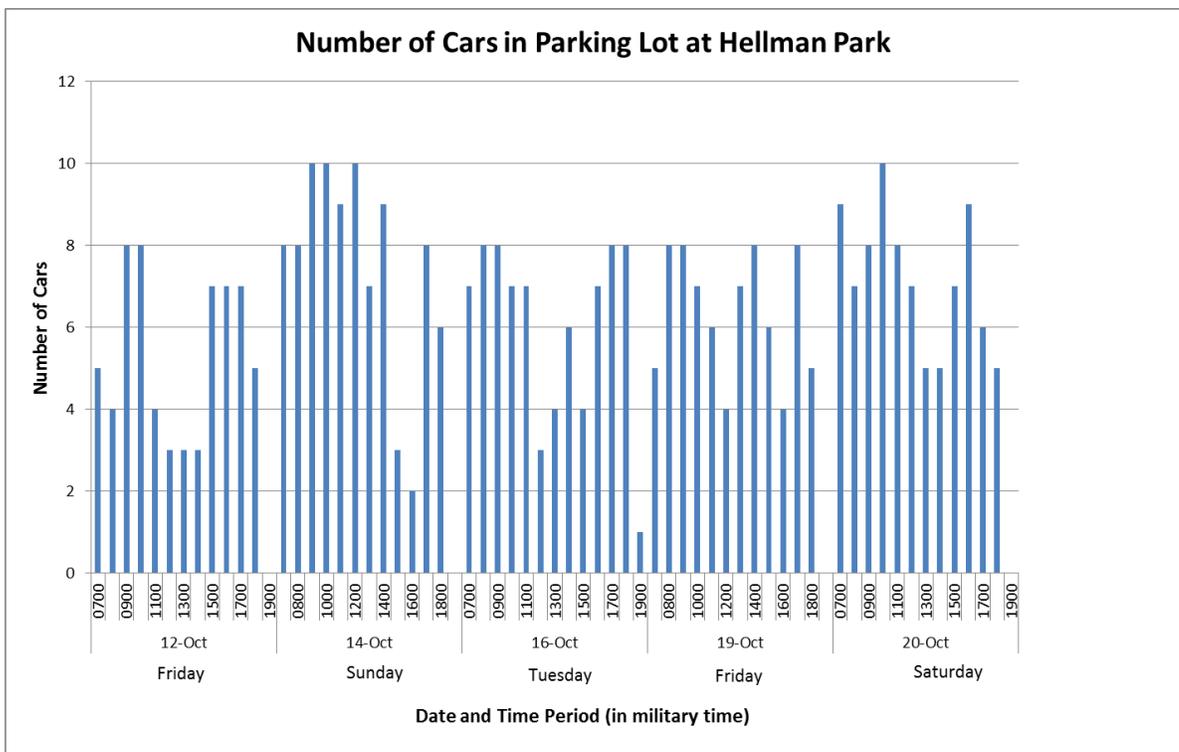
Parking Area Occupation

Parking lot/turnout use

Hellman Park

Hellman Park has approximately 10 spaces, two of which are reserved for disabled parking. Across all days and times, an average of 6.2 parking spaces was occupied. Even at peak times of the day, one or two spaces were usually available at the Hellman Park trailhead. This may be because visitors assume the lot is full and do not enter to look for a parking space. Peak parking lot occupancy appears to be early to mid-morning, and mid-afternoon to dusk. Parking occupancy at Hellman is higher on weekends than weekdays, not including neighborhood parking (Figure 14).

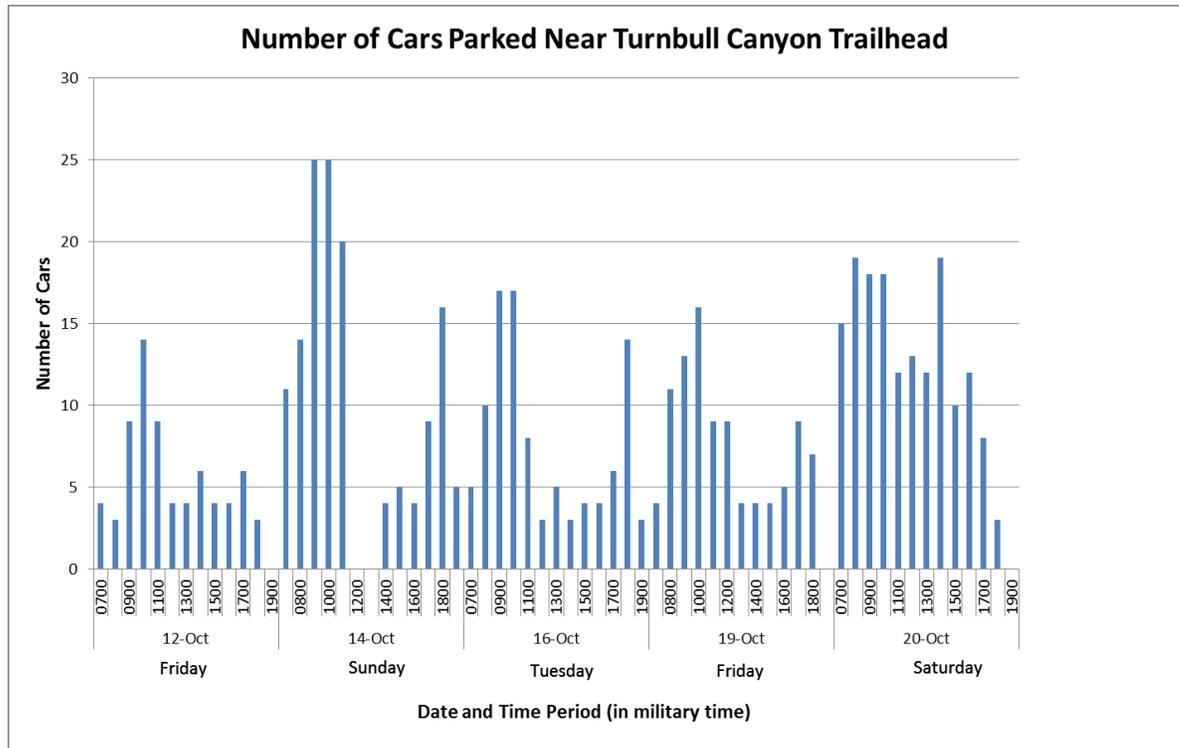
Figure 14: Number of Cars in Parking Lot at Hellman Park



Turnbull Canyon

Turnbull Canyon has unofficial and undesignated spaces at a turnout as well as parallel parking along the north side of the road to accommodate approximately 25 vehicles depending on vehicle size and arrangement. Parking at Turnbull Canyon fluctuated greatly and was highest on the weekend (Figure 15). Many visitors park along Turnbull Canyon west of the trailhead, near residences and are not accounted for in this study.

Figure 15: Number of Cars Parked Near Turnbull Canyon



Accessing the trails

Of the 1,054 individuals/groups that entered the Preserve at Hellman Park, 871 (83.0%) arrived via a vehicle and of the 809 individuals/groups that entered the Preserve at Turnbull Canyon, 639 (79.0%) arrived via a vehicle (Figure 16; Figure 17). Since groups only provided one response, we assumed that all members of the group arrived in one vehicle and the minimum number of vehicles reportedly driven to the trailheads was computed: 871 at Hellman and 639 at Turnbull (Figure 18). By assuming that all individuals in a group drove their own car, the maximum number of cars driven to the trailheads was computed: 1,544 at Hellman and 1,176 at Turnbull (Table 1). The highest number of cars potentially driven to the Hellman trailhead

during a survey period was 135 and occurred on Sunday October 14th between 8:00 am and 10:00 am and on Tuesday, October 16th from 4:30 pm to 7:00 pm. The highest number of cars potentially driven to the Turnbull Canyon trailhead during a survey period was 130 and occurred on Saturday October 20th between 8:00 am and 10:00 am followed by 111 cars on Sunday October 14th also from 8:00 am to 10:00 am (Figures 19-28). In general, the high minimum number of individuals/groups arriving via cars on Saturday (226 at Hellman and 195 at Turnbull) and Sunday (193 at Hellman and 188 at Turnbull) corresponds to the trend of high user numbers on those days.

Figure 16: Means of Arrival for Individuals/Groups at Hellman Park

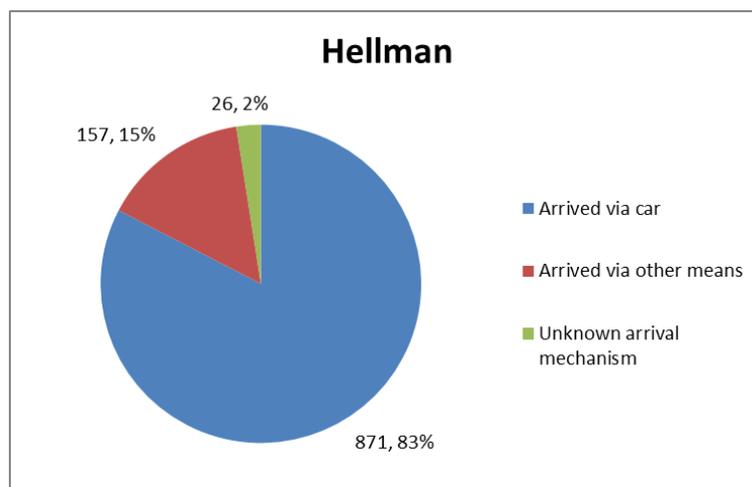


Figure 17: Means of Arrival for Individuals/Groups at Turnbull Canyon

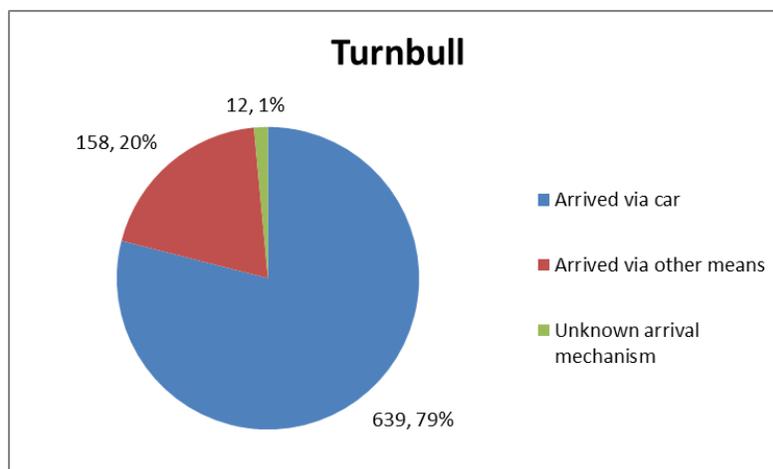


Figure 18: Minimum Numbers of Cars Driven by Individuals/Groups per Date

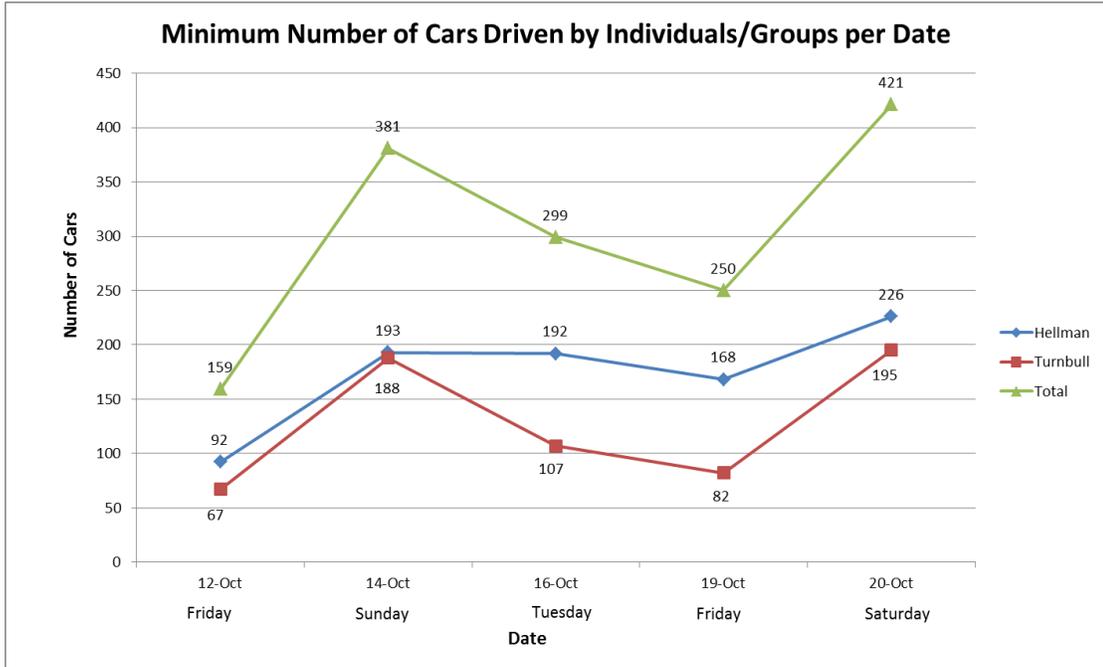
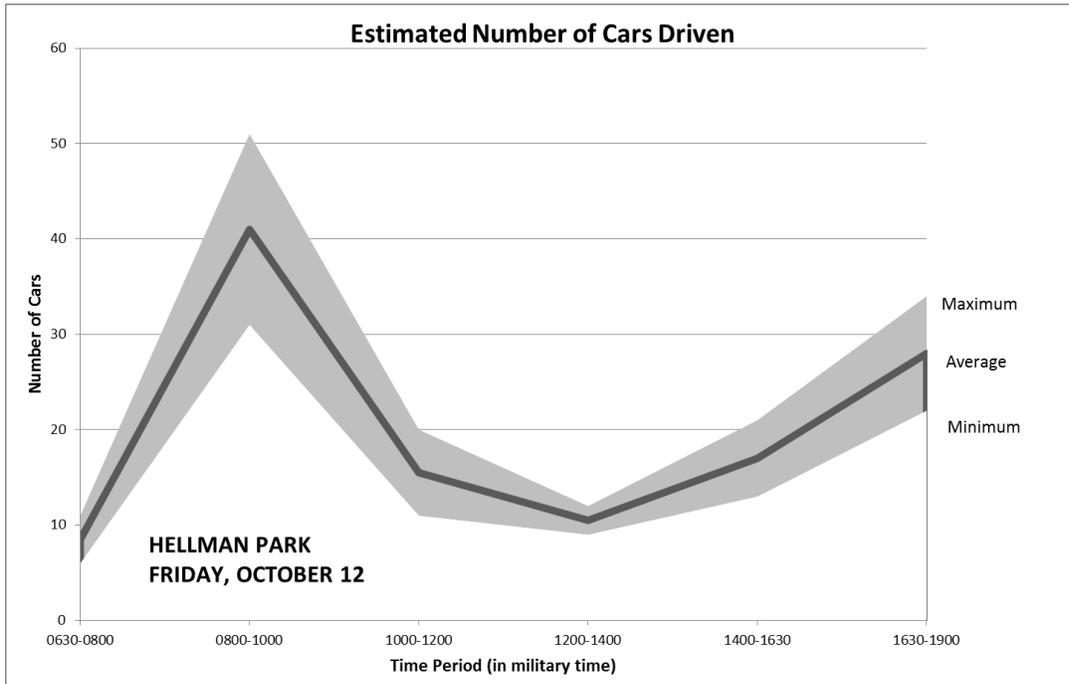


Table 1: Minimum and Maximum Number of Cars Driven to the Trailhead*

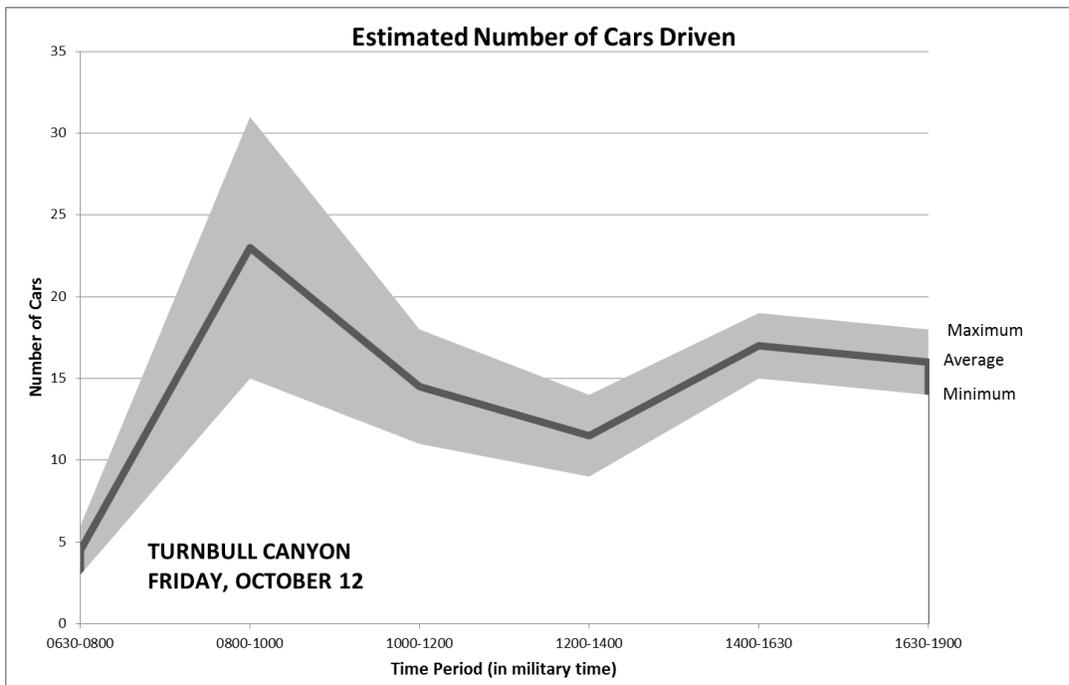
*Minimum numbers were computed by assuming that all individuals in each group arrived in one vehicle. Maximum numbers were computed by assuming that all individuals in each group drove separately. Thus, we can provide a range of the possible minimum and maximum number of cars driven to the trailheads. The actual numbers are unknown but fall within this range.

	Hellman		Turnbull	
	Minimum	Maximum	Minimum	Maximum
Fri 12-Oct	92	149	67	106
0630-0800	6	11	3	6
0800-1000	31	51	15	31
1000-1200	11	20	11	18
1200-1400	9	12	9	14
1400-1630	13	21	15	19
1630-1900	22	34	14	18
Sun 14-Oct	193	390	188	361
0630-0800	42	85	51	93
0800-1000	66	135	56	111
1000-1200	26	49	25	53
1200-1400	18	44	10	22
1400-1630	12	19	23	36
1630-1900	29	58	23	46
Tues 16-Oct	192	308	107	197
0630-0800	23	27	9	12
0800-1000	44	71	26	41
1000-1200	17	32	18	36
1200-1400	12	18	3	5
1400-1630	18	25	11	35
1630-1900	78	135	40	68
Fri 19-Oct	168	259	82	125
0630-0800	34	50	12	17
0800-1000	58	90	30	48
1000-1200	12	17	10	14
1200-1400	14	21	3	5
1400-1630	23	42	10	12
1630-1900	27	39	17	29
Sat 20-Oct	226	438	195	387
0630-0800	60	120	53	107
0800-1000	57	108	61	130
1000-1200	37	72	29	52
1200-1400	22	39	23	45
1400-1630	27	51	18	33
1630-1900	23	48	11	20

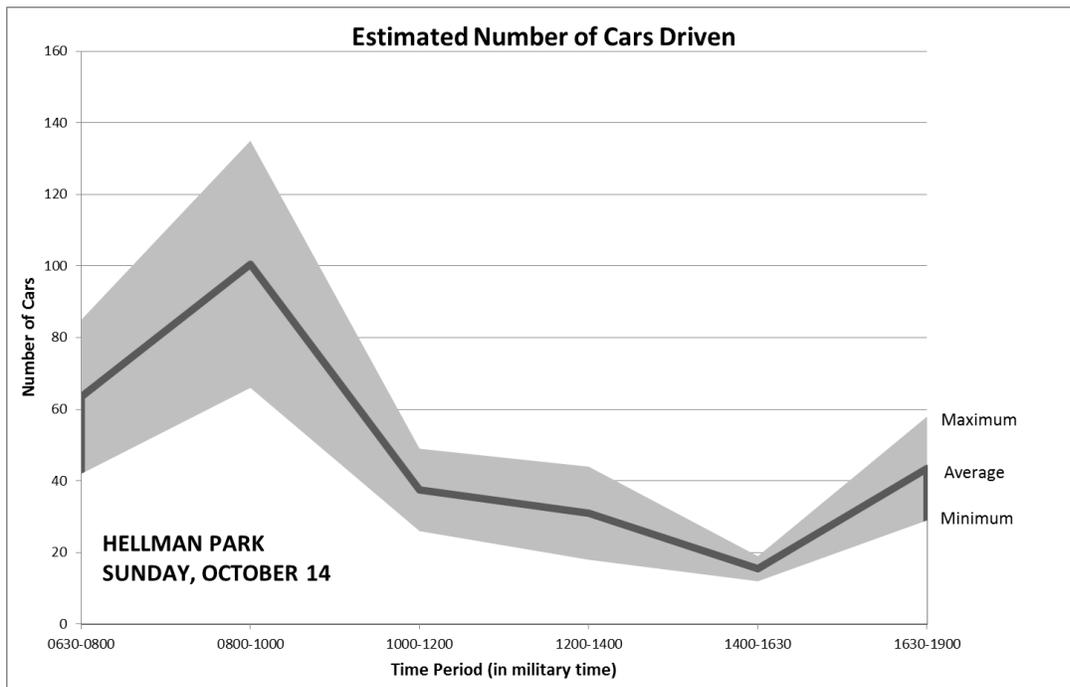
Figures 19: Estimated Number of Cars Driven to Hellman Park on October 12, 2012



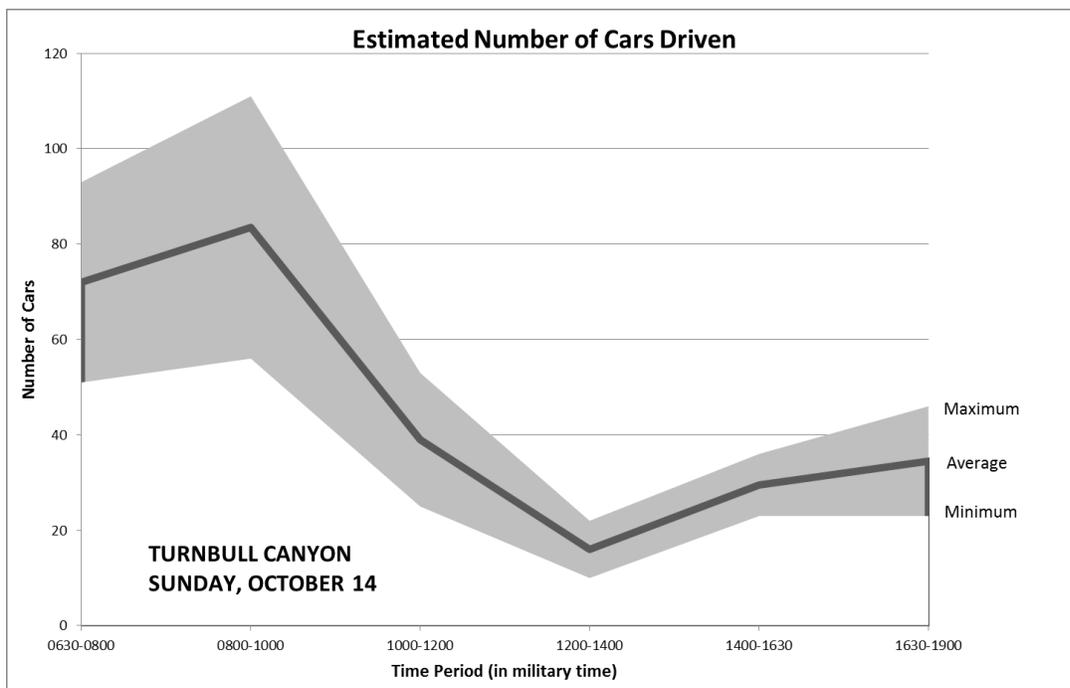
Figures 20: Estimated Number of Cars Driven to Turnbull Canyon on October 12, 2012



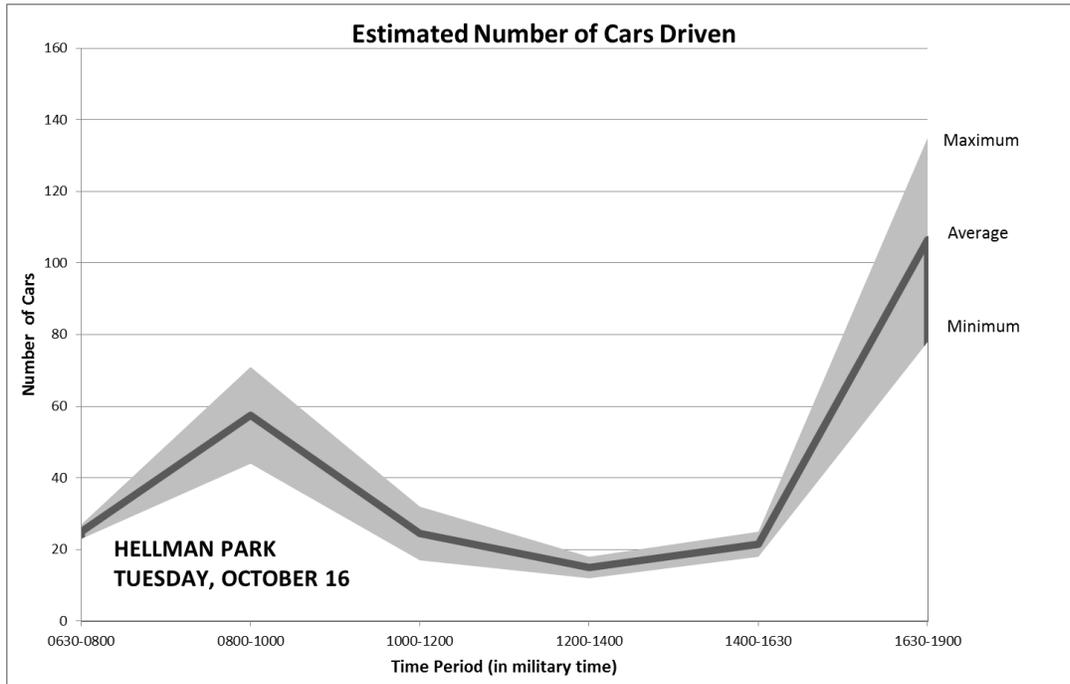
Figures 21: Estimated Number of Cars Driven to Hellman Park on October 14, 2012



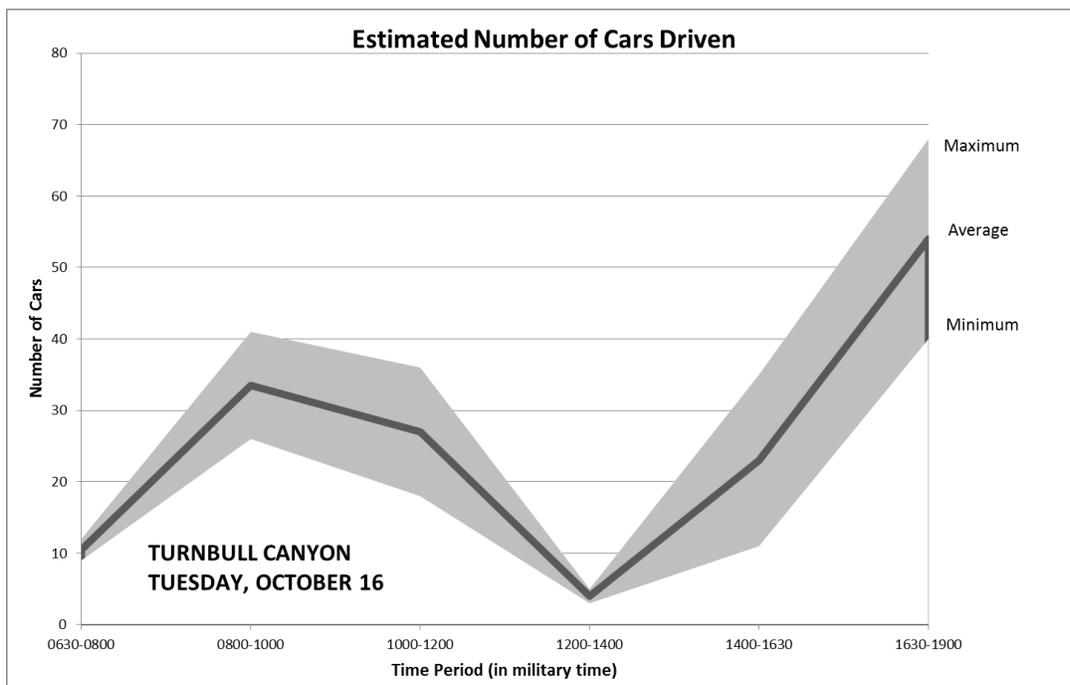
Figures 22: Estimated Number of Cars Driven to Turnbull Canyon on October 14, 2012



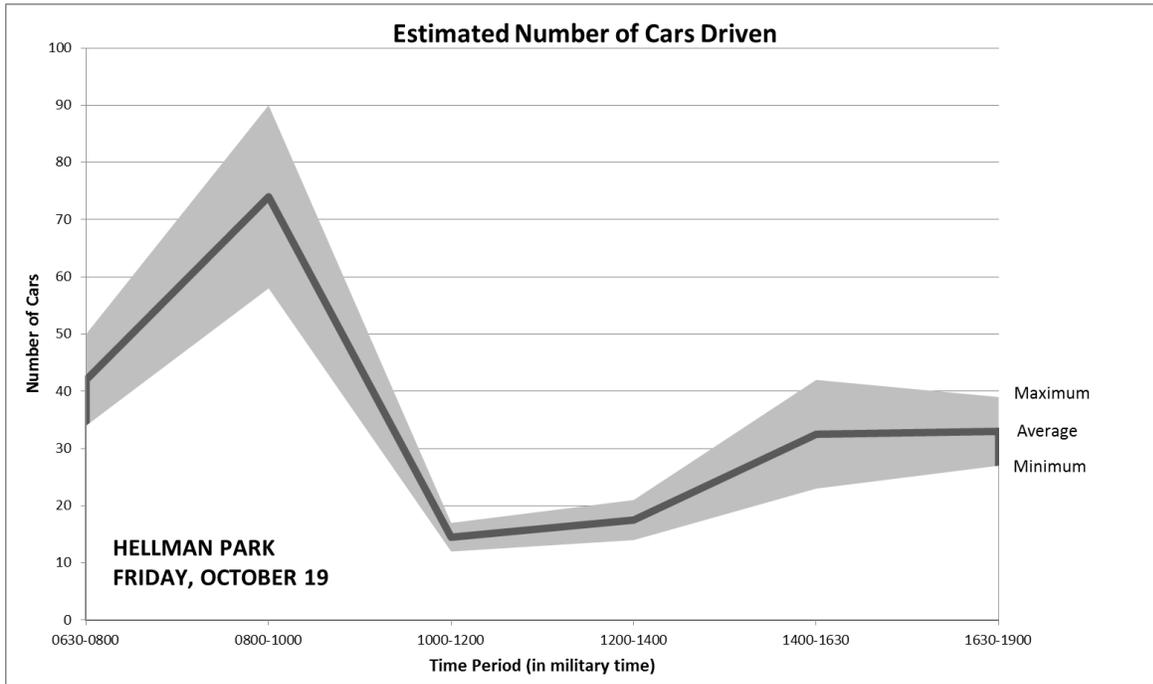
Figures 23: Estimated Number of Cars Driven to Hellman Park on October 16, 2012



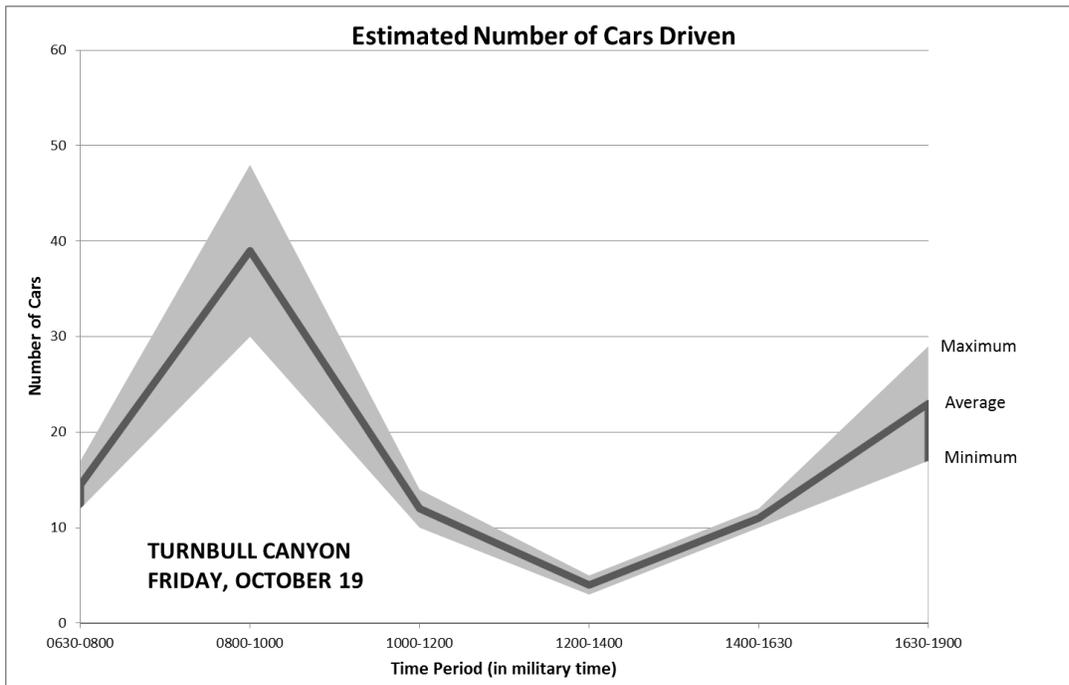
Figures 24: Estimated Number of Cars Driven to Turnbull Canyon on October 16, 2012



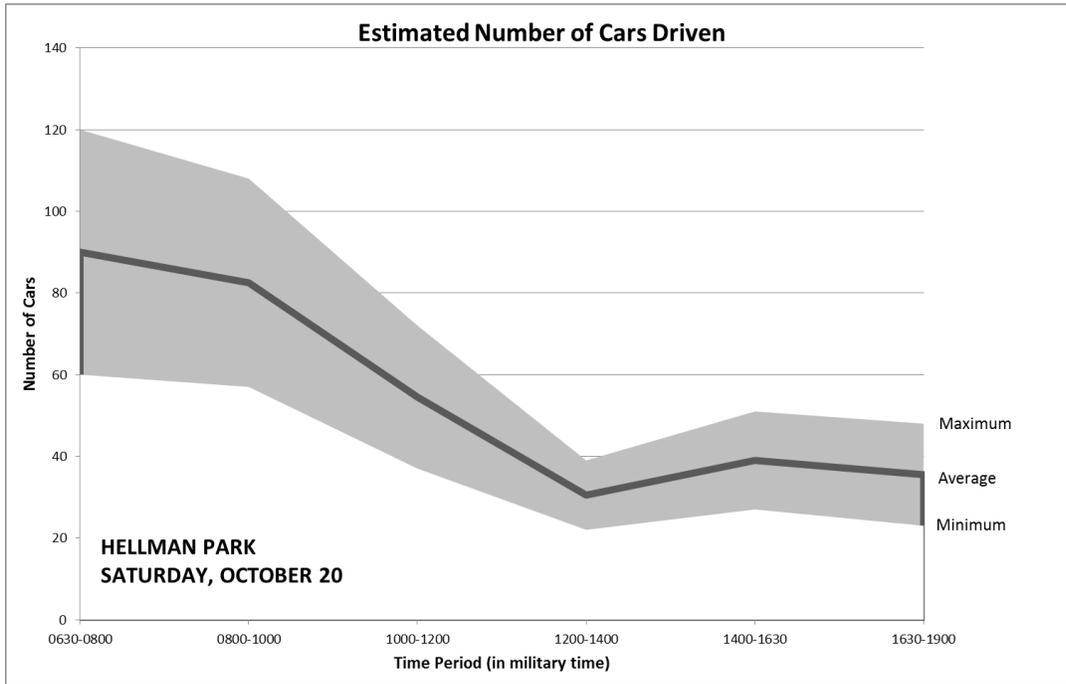
Figures 25: Estimated Number of Cars Driven to Hellman Park on October 19, 2012



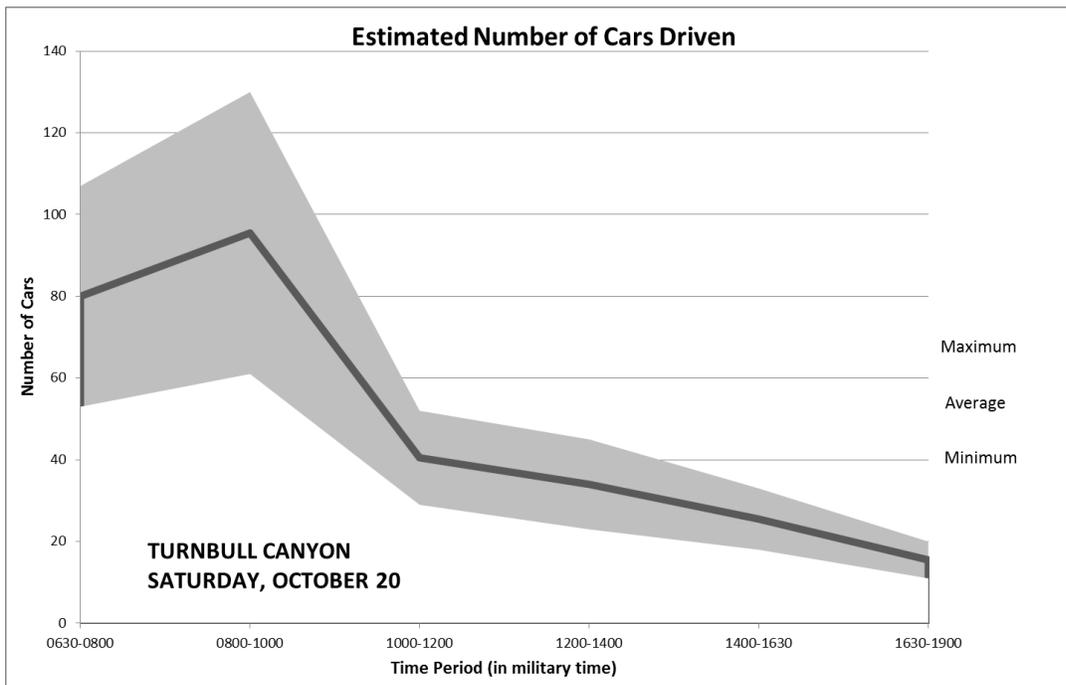
Figures 26: Estimated Number of Cars Driven to Turnbull Canyon on October 19, 2012



Figures 27: Estimated Number of Cars Driven to Hellman Park on October 20, 2012



Figures 28: Estimated Number of Cars Driven to Turnbull Canyon on October 20, 2012



Demographics

Gender and Children

Of the visitors counted during all survey dates, a greater percentage was female at Hellman Park but a greater percentage was male at Turnbull Canyon (Figure 29; Figure 30). This could be accounted for by the higher number of bikers entering at Turnbull Canyon (446 at Turnbull vs. 37 at Hellman), 95.5% of which are male. Of the 541 individual users at Hellman Park, 59.5% were male and of the 427 individual users at Turnbull Canyon, 82.9% were male. Since 76.6% of females visiting Hellman Park and 85.1% of females visiting Turnbull Canyon were with another person, results show that women typically visit the parks in groups of two or more. Less than 5% of the visitors counted at each trailhead were children. Compared to 2006, the percent of female visitors has increased from 24.22% to 50.1% at Hellman Park and from 21.58% to 32.8% at Turnbull Canyon.

Figure 29: Hellman Park - Gender and Children

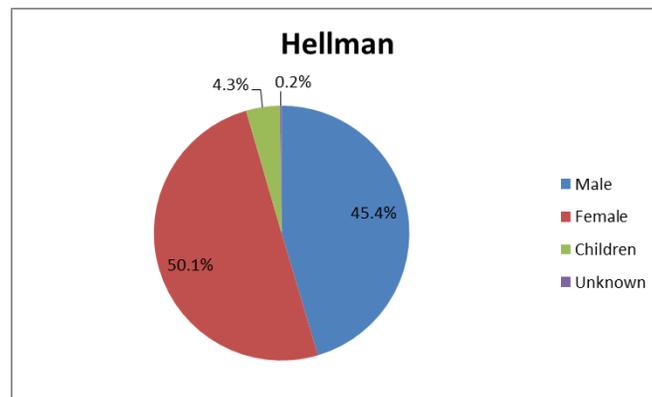
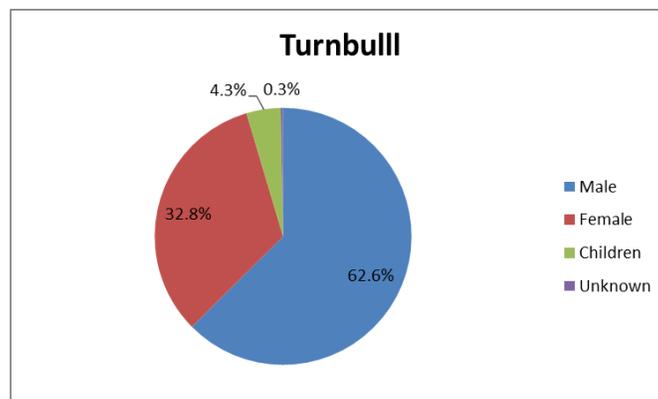


Figure 30: Turnbull Canyon - Gender and Children



Origination of trip

There were a total of 3,236 visitors counted at both locations over all 5 days (1,828 at Hellman, 1,408 at Turnbull). Out of the 1,828 visitors entering at the Hellman Park trailhead, over half (1,013 or 55.4%), were from Whittier (Figure 31) followed by 33.1% (404) from Pico Rivera, Downey Norwalk, Montebello, La Mirada and Santa Fe Springs. Of those visiting Hellman Park alone, 70.6% (541) were from Whittier and of the 513 groups, 54.4% had at least one member of the group from Whittier. Out of the 1,408 visitors that entered at the Turnbull Canyon trailhead, 42.0% (591) were from Whittier (Figure 32) followed by 24.8% (349) from Downey, Pico Rivera, Montebello, Norwalk, and Santa Fe Springs. Of those visiting alone (427), 60.5% were from Whittier and of the 382 groups, 42.9% had a member of the group from Whittier. Hellman Park visitors originated from a total of 66 California cities, five (5) California counties (Los Angeles, Monterey, Orange, Riverside, Ventura), two (2) other states (Louisiana and North Carolina), and one (1) other country (Mexico). Turnbull Canyon visitors originated from a total of 67 California cities, four (4) California counties (Los Angeles, Orange, Riverside, San Bernardino) and one (1) other country (Mexico). See Appendix B for a complete list of origination reported and number of people reporting to have originated from that region.

Figure 31: Origination of People Visiting Hellman

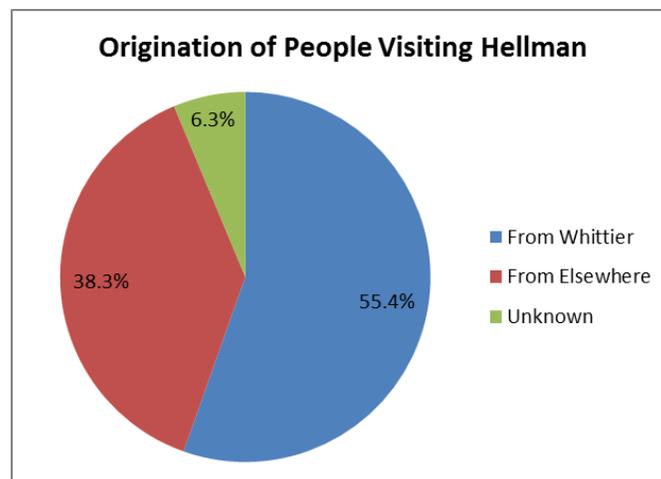
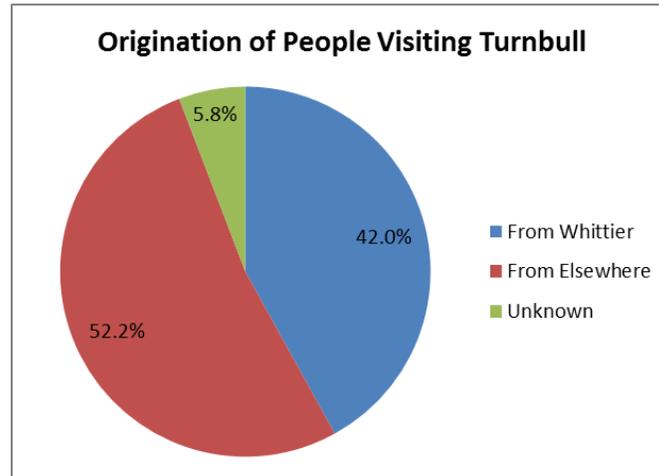


Figure 32: Origination of People Visiting Turnbull



Conclusions and Recommendations

Conclusions

Visitation patterns and frequencies have evolved since the Habitat Authority’s 2006 Park Visitor User Survey. In 2005, Turnbull Canyon was the busiest trail access point, and findings from this pilot study show that Hellman is now busier than Turnbull Canyon. Peak usage is during the morning of the weekends at both locations. The majority of visitors arrive to the trailhead via a vehicle and visits the area to run/hike. The most common length of time visitors stay within the Preserve is 1 hour and end at the same trailhead from which they began.

There was a 9 times increase in visitation at Hellman Park and a 3.8 times increase at Turnbull Canyon compared to the 2006 user survey. This could be due to a variety and/or combination of circumstances. An increase over time in the County’s population as discussed earlier in this report, a lack of other similar areas for recreation, simply more people finding out about the Preserve through social media or Authority outreach efforts, and other explanations are contributing reasons why these areas are local and regional attractions.

According to this study, 33.1% and 24.8% of visitors to Hellman Park and Turnbull Canyon, respectively, originated from cities in Los Angeles County nearby Whittier (see Origination of Trip results page 32). Research shows that the City of Whittier is not park poor, even when not including its open space areas in the equation which would obviously tip the ratios⁸. However

⁸ Research provided by the Rivers and Mountains Conservancy.

when using the California State Parks web tool, Community Fact Finder, and looking at the nearby cities of Downey, Norwalk and Pico Rivera, it shows they are park poor. Further research may discover that other nearby cities are park poor as well, which could contribute to the regional draw of the Preserve.

Additionally, the Habitat Authority outreach efforts may have contributed to an increase in visitation as well. In July 2005, the Habitat Authority hired its first Interpreter, and from there outreach to the public increased beyond what the Rangers had been providing to that date. Also, Preserve trail maps were put on its website on May 12, 2008, and installed in trail kiosks between October 2008 and February 2009. Hard copies of the trail map brochures were printed first for the Arroyo Pescadero Trailhead in November 2008 and for all other trailheads by June 2009. Furthermore, as a result of the Angeles Forest Station Fire of August through October 2009, the forest was subsequently closed to recreation shifting the recreation to other open space areas of the County, possibly to the Preserve.

Recommendations

1. Further investigate the impacts of the trail use at Hellman Park and Turnbull Canyon and their consistency with the Habitat Authority's Resource Management Plan. Where there are inconsistencies, work to address them with various management tactics.
2. Monitor the conditions of the trails. Repeat photography of key points could be taken to document changes (or lack of change) to the trails over time.
3. Conduct biological studies perhaps during breeding or rainy seasons to monitor the health of the flora and fauna and possible impacts due to recreation. Consider measures such as periodic trail closures to enable vegetation recovery or to reduce any disturbance during breeding seasons if necessary.
4. Work with local and regional governments to preserve or develop more non-programmed open space. It is apparent that people are willing to drive a significant distance to walk in nature. More regional or local parks with hills and trails might ease the burden on the Preserve and other natural open spaces in the region.

Conduct future user studies as listed below:

1. It is recommended that a future survey effort include all trailheads and the major access point of Turnbull Canyon simultaneously to capture the annual visitation levels of the Preserve. Surveying the entire Preserve at once is a more accurate reflection of the usage as opposed to surveying each trailhead or groups of trailheads separately on different days or times of the year. For instance if Hellman Park and Turnbull Canyon are surveyed in the Fall 2012 and then the Arroyo Pescadero Trailhead is surveyed in the

Spring 2013, numbers at Arroyo Pescadero could be elevated if the Hellman Park is closed or has new hours. Also, this pilot survey included two Fridays, but since there was not a significant difference in the data gathered for those two days, surveying only one Friday is needed. Eliminating the duplicative Friday will also help to keep the survey efforts volunteer based, as well as consolidating the 6:30 am to 8 am, and the 8 am to 10 am shift to be a new shift from 6:30 am to 9 am. Suggested survey days and shifts would be a Tuesday, Friday, Saturday, and Sunday during the peak visitation hours of 6:30 am to 9 am, and 4:30 pm to 7 pm. The total number of shifts would be forty-eight as opposed to sixty as conducted with the October 2012 survey effort. Surveying only peak usage hours is expected to provide the Authority with a reasonable assumption of trail usage levels. Since the majority of users start and finish their activity at the same trailhead, gathering additional information on this topic may not be useful or the most effective use of time. Consulting with a statistician on these ideas would be prudent.

2. If funding for future surveys can be acquired, it would be best to survey the Preserve at all official trailheads and the major access point of Turnbull Canyon simultaneously throughout the entire day starting at 6:30 am until 7 pm, instead of at peak use times. This would guarantee the most accurate account of the Preserve's trail usage volume.
3. Contingent on resources, replicate these survey efforts in October, February, and June to measure any changes in patterns of use relative to seasons or weather. Additionally, people's schedules vary with different times of the year due to issues such as schooling, vacations, holidays, employment or other schedules, so averaging captured visitation numbers throughout the year would paint a better picture of the Preserve's annual visitation rate.
4. If the purpose of the survey was expanded, a new suggested goal would be to study the quality of the trail users' experiences. This could be conducted by asking users if the amount of people on the trails diminished their experience of nature and other factors.

Bibliography

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Appendices

**Habitat Authority
Trail User Survey 2012
Volunteer Instructions**

Overall Instructions: Sign Registration Form if you are not already a Habitat Authority Docent or Trail Watcher. Fill out one data form for each volunteer shift. A shift is 1 ½, 2 or 2 ½ hours. If two or more people are volunteering for one shift, then there is one data form filled out. As a team, please verify the data written on the form. Also, **please arrive 10 minutes early** to your shift.

At the end of your shift, if a new volunteer has not arrived yet, please start a new data sheet for that shift and stay at least additional 10 minutes waiting for them. It is important to be able to gather complete and consistent data for the greatest accuracy as possible.

When you arrive to the trailhead there will be a box or bag with materials and water if you need it. Found in the box/bag will be a badge that says Volunteer; please pin this to your shirt. At the end of your shift, return the volunteer badge to the box. If you are an existing Habitat Authority volunteer please wear your uniform shirt and wear your identification volunteer badge.

As a volunteer for this project, you are an extension of the Habitat Authority and its mission of preservation, management and education of the hills. The information gathered with the Trail User Survey will help with improving the health of the Preserve and people's recreational experiences. Please remember to be courteous to visitors at all times, and smile. ☺

Please bring water for yourself, wear sunscreen, and wear a hat to keep the sun out of your eyes. Two chairs will be provided.

Instructions for the Survey Form for Visitors Entering the Trail:

Location: Please circle whether you are at Hellman Park, Turnbull Canyon, or Arroyo Pescadero.

Date: Please fill in the Month/Day/Year.

Shift: Please circle which shift: 6:30-8 am, 8-10 am, 10-12 pm, 12-2 pm, 2-4:30 pm, 4:30-7 pm

Weather: Circle one option for the cloud cover, and Yes or No for wind.

Individual or Group

Individual: If one person is alone, please make a tick mark whether they are male or female.

Group: If more than one person seems to be together, move to the second page of the data sheet and please write in the numbers in the appropriate column whether they are male, female, or a child. A child is someone that needs to be accompanied by an adult. Sum the total number of people for that group in the last column, "Other Notes".

** If two or more individuals seem to arrive separately but meet up to become a group, count them as a group but make a note of "two or more individuals meeting" in the Other Notes section.

Activities: Check the appropriate box for any animals or activities you observe for this person or group. If you have an opportunity to speak with the person or group, **ask them if they drove to the trailhead**, and check the appropriate answer column (Yes or No). **Ask them what city they drove from**, and write it in the blank.

If you have time, please write any additional notes that you observe about the individual or group.

Instructions for the Survey Form for Visitors Exiting the Trail:

Ask them what trailhead they started from (i.e.: Hacienda Hills, Turnbull Canyon, etc.), and how long they were in the Preserve. Write it on the appropriate form. If possible, one volunteer should be assigned solely to this task.

Count Cars:

Also, once every hour please count the number of cars in the parking lot and fill-in the appropriate form.

Volunteers for the last shift, 4:30 – 7 pm: Take your data sheets and boxes/bags to Hellman Park where a Ranger or Habitat Authority staff member will be to collect them. Hellman Park is located at the end of Greenleaf Ave at Orange Drive (approximately 5700 Greenleaf, Whittier, 90601).

Thank you for your service!!! Your time and efforts are appreciated!

Your Name: _____

Trailhead (circle one): Hellman Park Turnbull Canyon Arroyo Pescadero

Date: _____ Shift (circle one): 6:30-8 a.m. 8-10 a.m. 12-2 p.m. 2-4:30 p.m. 4:30 -7 p.m.

SURVEY SHEET FOR VISITORS EXITING THE TRAIL

	# Male	# Female	<u>What Trail Did They Start From?</u> How long did they stay?	Did they drive? Y/N
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
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33				
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35				
36				
37				
38				
39				
40				
41				
42				
43				
44				
45				

For the how long did they stay question, you also could ask what time did they start and then calculate the amount of time for a more accurate answer.

HABITAT AUTHORITY VISITOR USE SURVEY

Parking Lot Observations

Date: _____ Location: _____

Count either the number of cars in the lot, or if easier, count the number of open spaces in the lot, and fill in the table accordingly.

Time (military time)	# Cars in Lot	# Open Spaces in Lot
7 a.m.		
8 a.m.		
9 a.m.		
10 a.m.		
11 a.m.		
Noon		
1 p.m.		
2 p.m.		
3 p.m.		
4 p.m.		
5 p.m.		
6 p.m.		
7 p.m.		

HABITAT AUTHORITY VISITOR USE SURVEY

Parking Lot Observations

Date: _____ Location: _____

Count either the number of cars in the lot, or if easier, count the number of open spaces in the lot, and fill in the table accordingly.

Time (military time)	# Cars in Lot	# Open Spaces in Lot
7 a.m.		
8 a.m.		
9 a.m.		
10 a.m.		
11 a.m.		
Noon		
1 p.m.		
2 p.m.		
3 p.m.		
4 p.m.		
5 p.m.		
6 p.m.		
7 p.m.		

Appendix B

Turnbull Canyon Visitors			
Origination	County	No. of People	Percent
Alhambra	Los Angeles	2	0.1%
Anaheim	Orange	8	0.6%
Arcadia	Los Angeles	1	0.1%
Artesia	Los Angeles	1	0.1%
Baldwin Park	Los Angeles	7	0.5%
Bell	Los Angeles	2	0.1%
Bell Gardens	Los Angeles	11	0.8%
Bellflower	Los Angeles	13	0.9%
Boyle Heights	Los Angeles	4	0.3%
Brea	Orange	3	0.2%
Buena Park	Orange	11	0.8%
Carson	Los Angeles	3	0.2%
Cerritos	Los Angeles	11	0.8%
Claremont	Los Angeles	1	0.1%
Commerce	Los Angeles	3	0.2%
Compton	Los Angeles	4	0.3%
Corona	Riverside	1	0.1%
Covina	Los Angeles	5	0.4%
Cypress	Orange	4	0.3%
Downey	Los Angeles	128	9.1%
East LA	Los Angeles	10	0.7%
El Monte	Los Angeles	20	1.4%
Fontana	San Bernardino	2	0.1%
Fullerton	Orange	4	0.3%
Garden Grove	Orange	1	0.1%
Gardena	Los Angeles	1	0.1%
Glendora	Los Angeles	1	0.1%
Hacienda Heights	Los Angeles	13	0.9%
Hawaiian Gardens	Los Angeles	2	0.1%
Hawthorne	Los Angeles	2	0.1%
Highland Park	Los Angeles	2	0.1%
Hollywood	Los Angeles	1	0.1%
Huntington Beach	Orange	1	0.1%
Huntington Park	Los Angeles	6	0.4%
La Habra	Orange	12	0.9%
La Habra Heights	Los Angeles	2	0.1%

Hellman Park Visitors			
Origination	County	No. of People	Percent
Alhambra	Los Angeles	5	0.3%
Altadena	Los Angeles	2	0.1%
Anaheim	Orange	1	0.1%
Anaheim Hills	Orange	1	0.1%
Azusa	Los Angeles	1	0.1%
Baldwin Park	Los Angeles	4	0.2%
Bell	Los Angeles	15	0.8%
Bell Gardens	Los Angeles	10	0.5%
Bellflower	Los Angeles	13	0.7%
Boyle Heights	Los Angeles	2	0.1%
Buena Park	Orange	12	0.7%
Burbank	Los Angeles	1	0.1%
Cerritos	Los Angeles	8	0.4%
City of Industry	Los Angeles	1	0.1%
Covina	Los Angeles	6	0.3%
Culver City	Los Angeles	2	0.1%
Cypress	Orange	1	0.1%
Diamond Bar	Los Angeles	2	0.1%
Downey	Los Angeles	99	5.4%
East LA	Los Angeles	3	0.2%
El Monte	Los Angeles	12	0.7%
Fullerton	Orange	5	0.3%
Garden Grove	Orange	1	0.1%
Glendale	Los Angeles	1	0.1%
Glendora	Los Angeles	1	0.1%
Hacienda Heights	Los Angeles	9	0.5%
Huntington	Unknown	4	0.2%
Huntington Park	Los Angeles	2	0.1%
Huntington Park/Pico Rivera	Los Angeles	1	0.1%
Inglewood	Los Angeles	1	0.1%
La Habra	Orange	17	0.9%
La Habra Heights	Los Angeles	4	0.2%
La Mirada	Los Angeles	44	2.4%
La Puente	Los Angeles	10	0.5%
Laguna Beach	Orange	2	0.1%
Lakewood	Los Angeles	10	0.5%

Turnbull Canyon Visitors (cont.)			
Origination	County	No. of People	Percent
La Mirada	Los Angeles	23	1.6%
La Palma	Orange	1	0.1%
La Puente	Los Angeles	13	0.9%
La Verne	Los Angeles	1	0.1%
Lakewood	Los Angeles	7	0.5%
Long Beach	Los Angeles	47	3.3%
Los Angeles	Los Angeles	30	2.1%
Lynwood	Los Angeles	1	0.1%
Maywood	Los Angeles	2	0.1%
Mexico	n/a	2	0.1%
Montebello	Los Angeles	53	3.8%
Monterey Park	Los Angeles	1	0.1%
North Hollywood	Los Angeles	1	0.1%
Norwalk	Los Angeles	52	3.7%
Ontario	San Bernardino	4	0.3%
Orange County	Orange	3	0.2%
Paramount	Los Angeles	1	0.1%
Pasadena	Los Angeles	7	0.5%
Pico Rivera	Los Angeles	68	4.8%
Redondo Beach	Los Angeles	1	0.1%
Rosemead	Los Angeles	1	0.1%
Rowland Heights	Los Angeles	3	0.2%
San Gabriel	Los Angeles	3	0.2%
Santa Fe Springs	Los Angeles	48	3.4%
South El Monte	Los Angeles	9	0.6%
South Gate	Los Angeles	22	1.6%
Torrance	Los Angeles	4	0.3%
Unknown	n/a	82	5.8%
Walnut	Los Angeles	4	0.3%
West Covina	Los Angeles	17	1.2%
West Hollywood	Los Angeles	1	0.1%
West LA	Los Angeles	1	0.1%
Whittier	Los Angeles	591	42.0%
Yorba Linda	Orange	1	0.1%

Hellman Park Visitors (cont.)			
Origination	County	No. of People	Percent
Long Beach	Los Angeles	20	1.1%
Los Angeles	Los Angeles	13	0.7%
Lynwood	Los Angeles	4	0.2%
Maywood	Los Angeles	4	0.2%
Mexico	n/a	2	0.1%
Monrovia	Los Angeles	1	0.1%
Montebello	Los Angeles	53	2.9%
Monterey	Monterey	2	0.1%
Monterey Park	Los Angeles	4	0.2%
New Orleans, Louisiana	n/a	1	0.1%
Newport Beach	Orange	1	0.1%
North Carolina	n/a	1	0.1%
Norwalk	Los Angeles	67	3.7%
Ontario	Riverside	2	0.1%
Orange	Orange	1	0.1%
Paramount	Los Angeles	9	0.5%
Pasadena	Los Angeles	8	0.4%
Pico Rivera	Los Angeles	114	6.2%
Placentia	Orange	1	0.1%
Pomona	Los Angeles	1	0.1%
Redondo Beach	Los Angeles	1	0.1%
Reseda	Los Angeles	1	0.1%
Rosemead	Los Angeles	4	0.2%
Rowland Heights	Los Angeles	3	0.2%
San Fernando	Los Angeles	2	0.1%
San Gabriel	Los Angeles	8	0.4%
Santa Fe Springs	Los Angeles	27	1.5%
Sierra Madre	Los Angeles	1	0.1%
South El Monte	Los Angeles	6	0.3%
South Gate	Los Angeles	9	0.5%
Unknown	n/a	115	6.3%
Ventura	Ventura	3	0.2%
West Covina	Los Angeles	13	0.7%
Whittier	Los Angeles	1013	55.4%