2013

CPPW TRAILS EVALUATION REPORT

Southern Nevada Health District

Communities Putting Prevention to Work (CPPW) is a national initiative of the Centers for Disease Control and Prevention (CDC) to make healthy living easier by promoting policy, systems, and environmental changes at the local level. The Southern Nevada Health District was one of only 50 communities nation-wide that was granted funding to address obesity or tobacco use and is one of only 11 communities nation-wide that was granted funding for both. The Southern Nevada Health District received their CPPW obesity grant in September 2010. Funding for the Neon to Nature project was supported in part by a cooperative agreement from the CDC's Communities Putting Prevention to Work program (1U58DP002382-01). The findings and conclusions in this report are those of the authors and do not necessarily represent the views of the US Department of Health and Human Services or the Centers for Disease Control and Prevention.

The CPPW project addresses policy, systems and environmental changes related to physical activity and nutrition. The trails project is just one of twelve CPPW objectives, many of which are correlated to the trails project outlined in this report. This synergy between different project components is important to ensure comprehensive efforts and sustainability as well as maximize impact. Some of the other related CPPW initiatives in Southern Nevada include:

- Public Information and Social Marketing efforts to promote physical activity and trail usage for physical activity and active transport.
- Integration of evidence based curriculum in after school programs to increase physical activity and healthy eating.
- Development of a Master Transportation and Park Path Master Plans.
- Expansion of Safe Routes to Schools Program at Clark County School District to an additional 50 schools.
- Integration of evidence-based curriculum to increase physical activity and healthy eating in local child care centers.
- Support for the Regional Transportation Commission to complete a comprehensive Complete Streets study; and expand connection of bike lanes around schools, transit centers, parks and other recreational facilities.

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Introduction

Community parks and trails provide opportunities to run, play, and enjoy the great outdoors. If people can easily access safe parks and trails, they are more likely to engage in recommended levels of physical activity[i]. By creating safe and accessible places to play and be active, we can make our community a healthier place to live.

As part of the CPPW project, the Southern Nevada Health District and Outside Las Vegas Foundation along with members of the Regional Open Space and Trails (ROST) workgroup engaged in a multi-component project to increase access to, and use of, local trails for physical activity, recreation and active transport. The five major components of this project include 1) conducting an inventory of all trails and amenities in southern Nevada, 2) development of a searchable trails website called Neon to Nature, 3) implementation of trail distance markers and way-finding signage on local trails, 4) promotion of the available trails for activity and transport through a media campaign and 5) comprehensive evaluation of the project.

Inventory: In early 2011, an inventory of all the trails and amenities in southern Nevada was conducted. Currently in southern Nevada there are approximately 970 miles of trails. These trails range from urban, off street trails to rural backcountry trails. Information collected as part of this inventory included data on the trail location, length, difficulty and amenities as well photographs. Prior to this effort, there was not a comprehensive trail inventory available that included all the trails in southern Nevada.

Neon to Nature: Using the trail inventory, an interactive website called Neon to Nature (www.neontonature.org), was developed. This website features a searchable map of all trails in southern Nevada. From this website, users can find trails near their homes or other locations in the valley. They can determine the trail difficulty, surface type and amenities available among other things prior to visiting the trail. The Neon to Nature website is the only place that comprehensive trail information for the entire Las Vegas Valley can be found.

Trail Distance Markers and Signage: SNHD worked with partners in each of the jurisdictions to install way-finding signage and distance markers on 33.75miles of regional trails and park paths. This involved installing ¼ mile distance markers on select asphalt, concrete and natural surface trails throughout southern Nevada. Asphalt and concrete distance markers are colorful, flush with the ground and require little to no cost for maintenance. In addition, way-finding signage was completed at five North Las Vegas trailheads. Pictures of the distance marker signs are included in the appendix of this report.

Media: An interactive website called Neon to Nature was added to the Get Healthy Clark County website in October 2011 (www.gethealthyclarkcounty.org). In addition, a media campaign promoting the Neon to Nature website and promoting the availability of local trails for activity and active transport ran in the spring of 2012 on radio, print, gas pump toppers and interactive media.

Evaluation Plan: A project team which included SNHD staff and representatives from the University of Nevada, Las Vegas was created. The team developed a comprehensive intervention evaluation plan that included three rounds of data collection on select trails. This report includes the results from all three rounds of data collection. The first round of data was collected in the fall of 2011, before the interventions began

and serves as a baseline. The second round of data collection took place after the media campaign concluded in May of 2012. The third round took place in the fall of 2012 to capture any potential impact of signage installation.

Members of the ROST workgroup from each jurisdiction suggested trails to be included in this project based on their connectivity to other trails or jurisdictions and their location. The suggested trails were reviewed by the project team, and selected for data collection based on several criteria. The team chose trails that were not under construction at the time of the first data collection period in the fall of 2011, had similar trails available to be used as controls, and provided locations for the trail use counters to be installed. Additionally, the team gave consideration to trail location in neighborhoods that served high-need populations and under-resourced communities. After the list of project trails was finalized, control trails were selected based on similarities in access, location, and surrounding neighborhoods. Also, trails were matched with controls based on aesthetic characteristics, i.e. presence or lack of landscaping and lighting and potential neighborhood demographics.

Weather conditions, such as the very high temperatures experienced in the summer months in Las Vegas, may affect the use of trails. To attempt to control for this variation, data on trail use was collected in the spring and fall when temperatures and weather conditions are similar in southern Nevada. Unless otherwise noted weather conditions during the collection period were similar.

Data on trail use is collected by placing special infrared sensors known as “trail counters” on specific trails in each of the jurisdictions. These sensors count each time the infrared beam is broken and thus count the trail users passing by. Manual counts during specific intervals were conducted to ensure accuracy of the trail sensors. Trail user data for each of the specified trails was collected for a full week. The second round of data collection, which started after the conclusion of the media campaign promoting the Neon to Nature website and the trails themselves, used the same methods, sensors, and counter locations as the first round. One of the study trails, Pittman Wash Trail in Henderson, was closed for construction during the second and third rounds of data collection. Unless otherwise noted, data for this trail was excluded from the following results.

Please note that when the trail counter’s infrared beam is initiated, it is designed with a preset delay of 1.5 seconds to avoid multiple counts from the same object. However, this also prevents the trail counter from recording multiple objects passing through the beam at the same time. While the trail counter user manual suggests that potential double-counts compensate for under-counting, the information that is presented below should be viewed with this information in mind. It is possible that these counts may have underestimated actual users in some cases. This is an area for future study.

Evaluation Results: This report summarizes the effect of the release of the Neon to Nature website, the promotional media campaign on multi-use trail traffic and implementation of trail distance markers and signage. Before the campaign, trail use counts were collected with infrared sensors placed on 11 local trails for one week in the fall of 2011. Traffic on those trails was measured again for another week after the campaign in the spring of 2012 and again after implementation of distance marking signage in the fall of 2012, although not all trails highlighted in this report received trail distance marking signage. Manual user counts were also conducted for limited intervals to validate sensor counts. Between the fall of 2011 and the spring of 2012, a media campaign and the release of a map-based trail website promoted the use of trails for

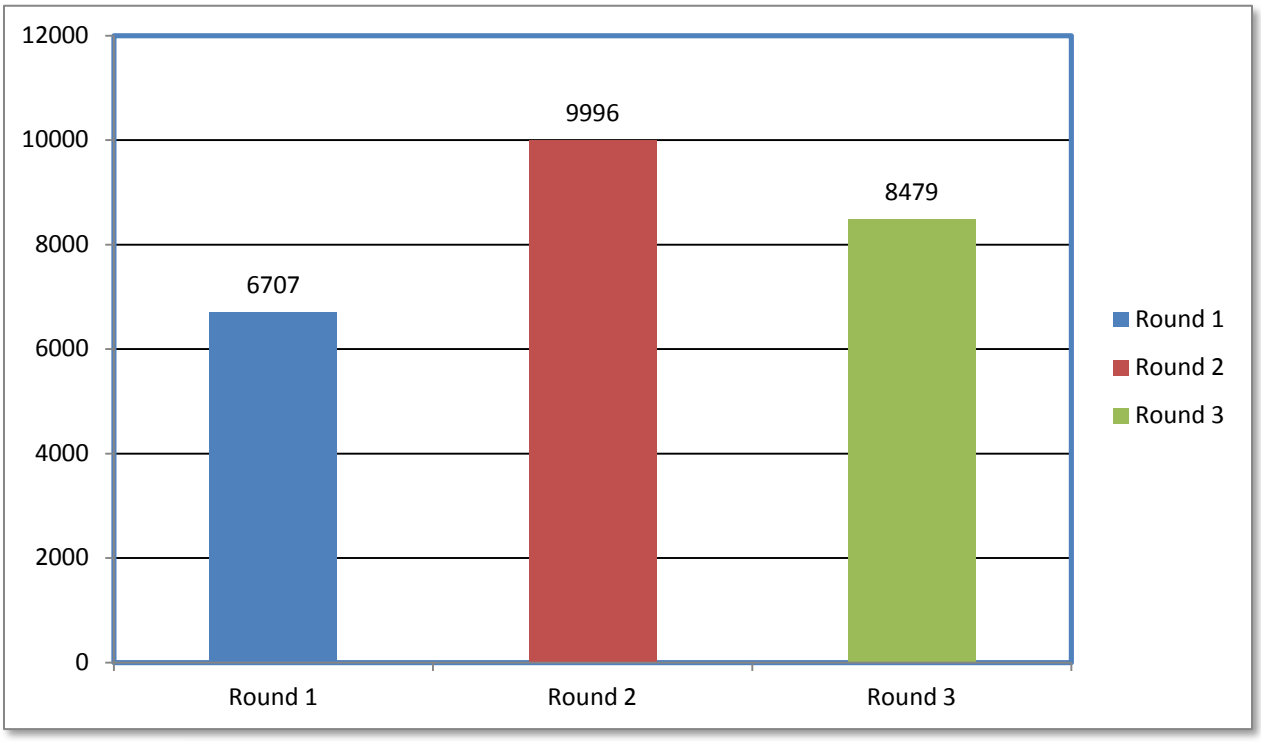
physical activity in Southern Nevada. Trail user counts on 11 trails were assessed before and after the campaign, and trail user counts increased significantly (p<.001). Trail user counts increased by 49%, from 6,707 to 9,996, after the media campaign. Results varied at individual trails. Some trails experienced slight declines in usage, but user counts increased at 7 of the study trails. Usage patterns by time of day and day of week were similar before and after the campaign for summary level data, but varied at the individual trail level. The following graphs provide information on the data collected at the specific trails included in the evaluation component.

[1] Pierce JR, Denison AV, Arif AA, Rohrer JE. Living near a trail is associated with increased odds of walking among patients using community clinics. *Journal of Community Health*, 2006; 31(4): 289-302.

Combined Trail Use Data

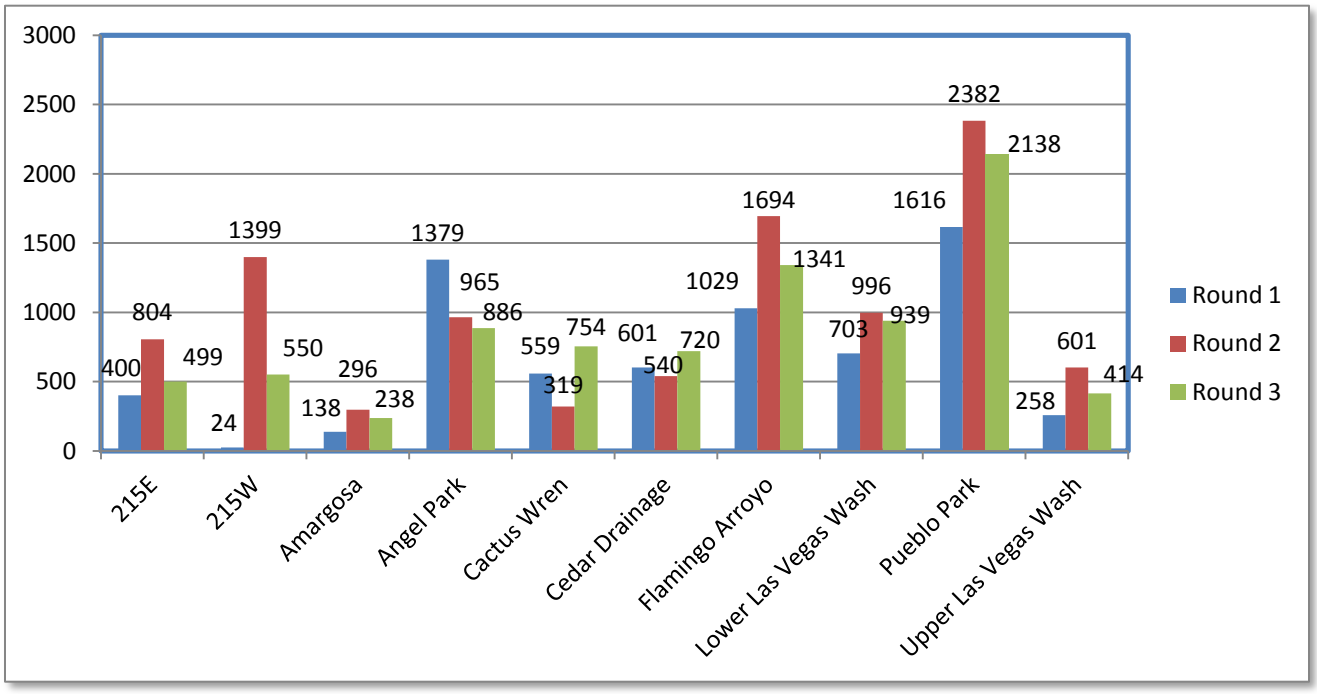
Data from all three data collection rounds are combined to present information on general trail use trends on specific Southern Nevada trails.

Total Trail Use (All Trails) By Data Collection Round



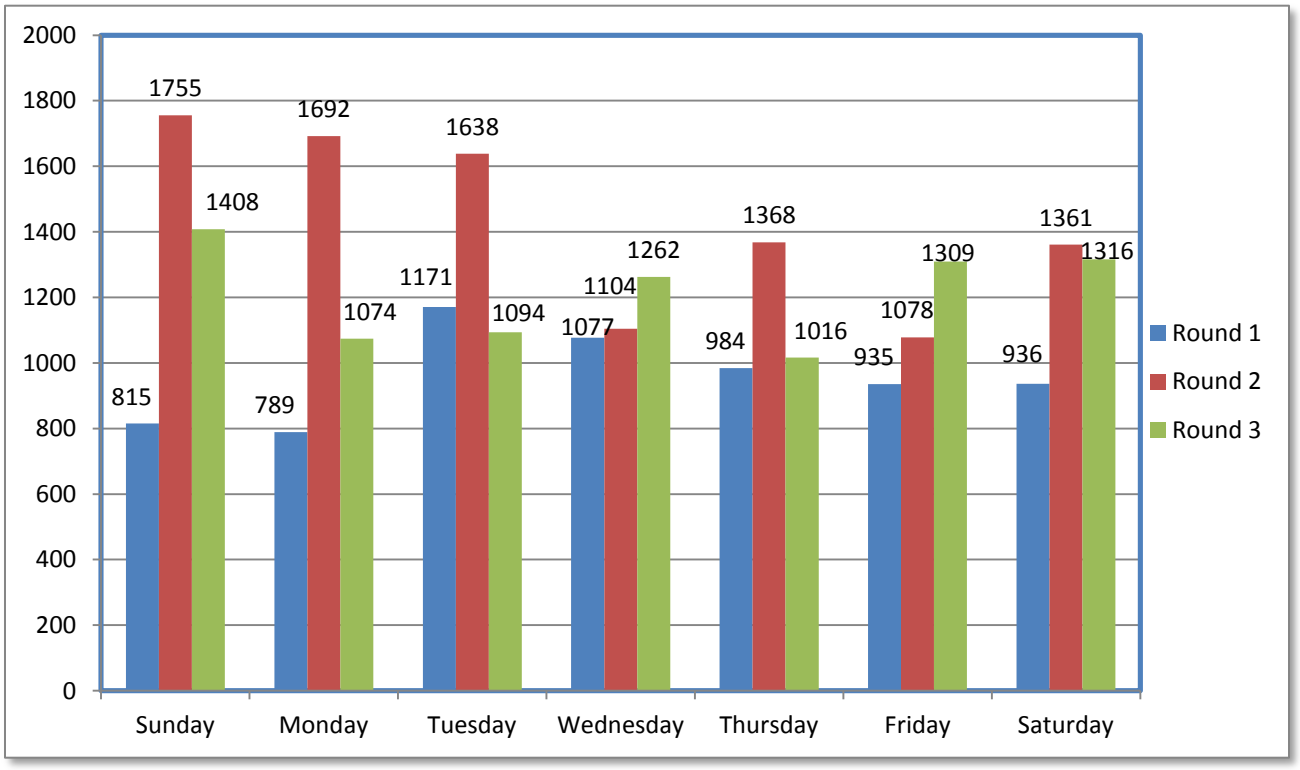
The data indicates that the number of trail users in southern Nevada increased from Round 1 (n=6,707) in fall 2011 to Round 2 (n=9,996) in the spring 2012 on the study trails. This change represents a 49% increase after the media campaign and website launch. In Fall 2012, ¼ mile markers were installed on several trails and usage in Round 3 (n =8479), declined slightly from Round 2 but was still higher than baseline. This overall pattern of usage rates is similar to what was observed on most of the trails included in the study.

Total Usage by Trail



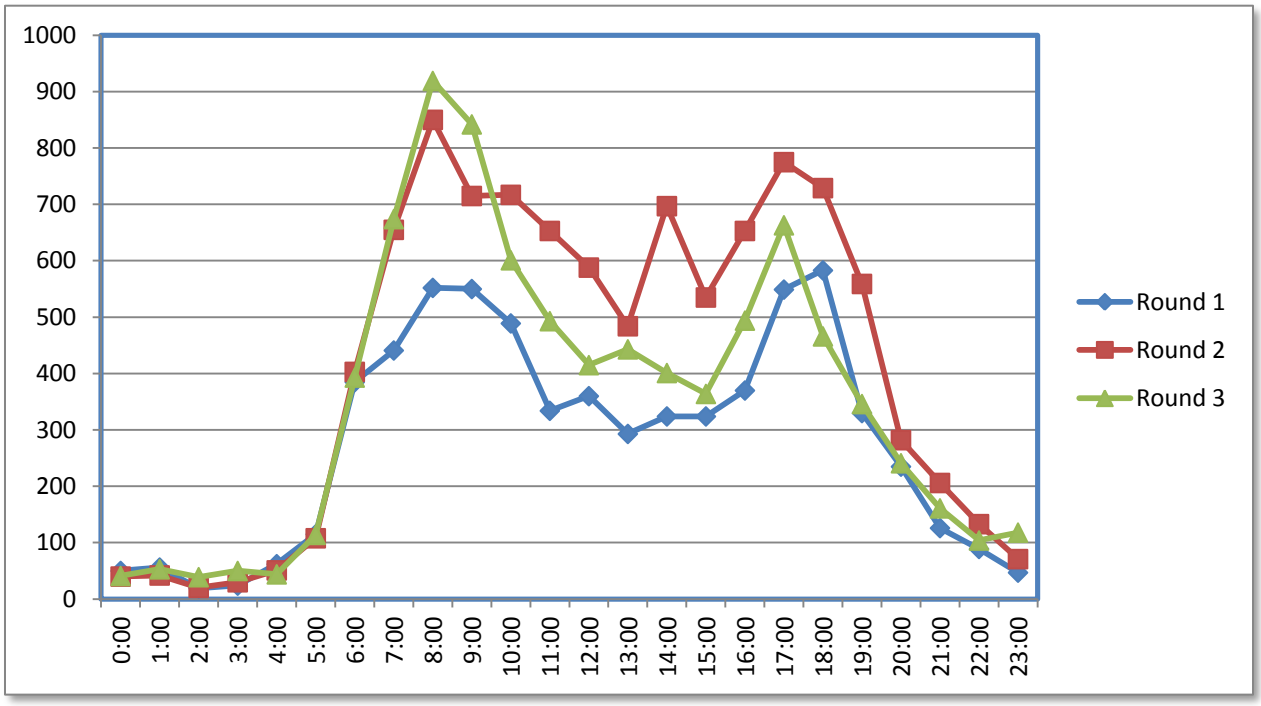
This chart presents total trail user counts for the three rounds of data collection on each trail. While increases in total users were observed at most trails from round 1 to round 2, user counts did decline at several study trails. For the most part Round 3 usage declined from Round 2 but still remained an increase above baseline usage.. Almost all trails recorded over 500 users in one or more rounds of data collection.

Total Trail Use by Day of Week



Trail use data for all Southern Nevada trails was combined and totaled by data collection round and day of the week. During Round 1, trail use was highest in the middle of the week and lower on weekends. Tuesday had the highest number of users. During Round 2, higher levels of use were observed Sunday through Tuesday, and the lowest levels were observed midweek. During Round 3 trail use was highest during the weekends and very steady throughout the weekdays. Sunday had the highest number of recorded users for Round 1 & 2.

Total Trail Use by Time of Day



Combined trail use data for all trails was totaled by data collection round and time of day. General trail use patterns appear to have remained similar, with highest usage occurring during daylight hours. During Round 1 and 3 the morning and evening peak use times appeared to be similar but with higher volume in the morning. During Round 2, morning usage levels are higher than evening levels, and an additional peak emerged in the midday hours.

City of North Las Vegas

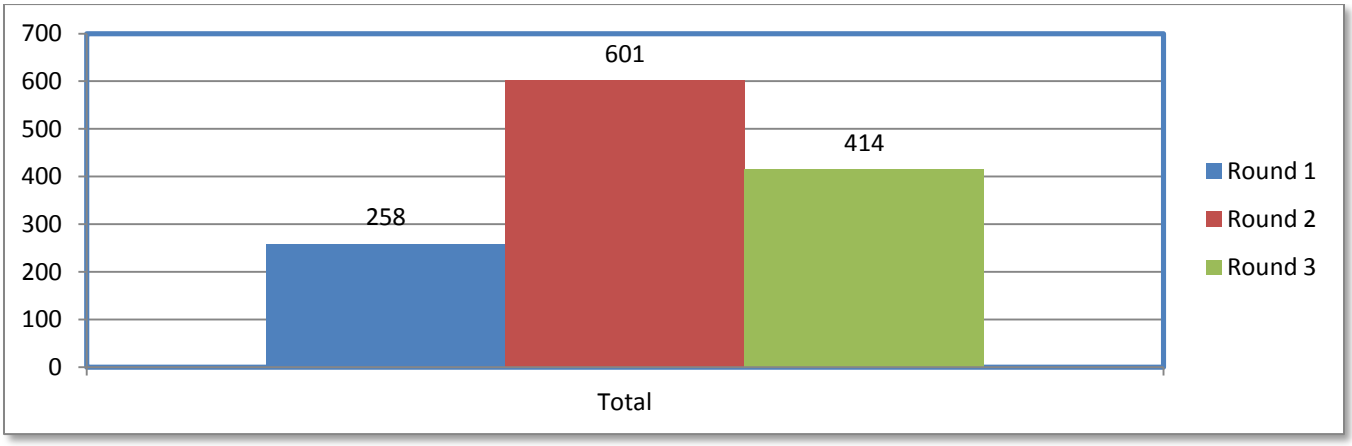
The data collection included two trails in the jurisdiction of the City of North Las Vegas: Upper Las Vegas Wash Trail and Lower Las Vegas Wash Trail. Both trails were selected for implementation of 1/4 mile markers and way-finding signage.

Upper Las Vegas Wash Trail

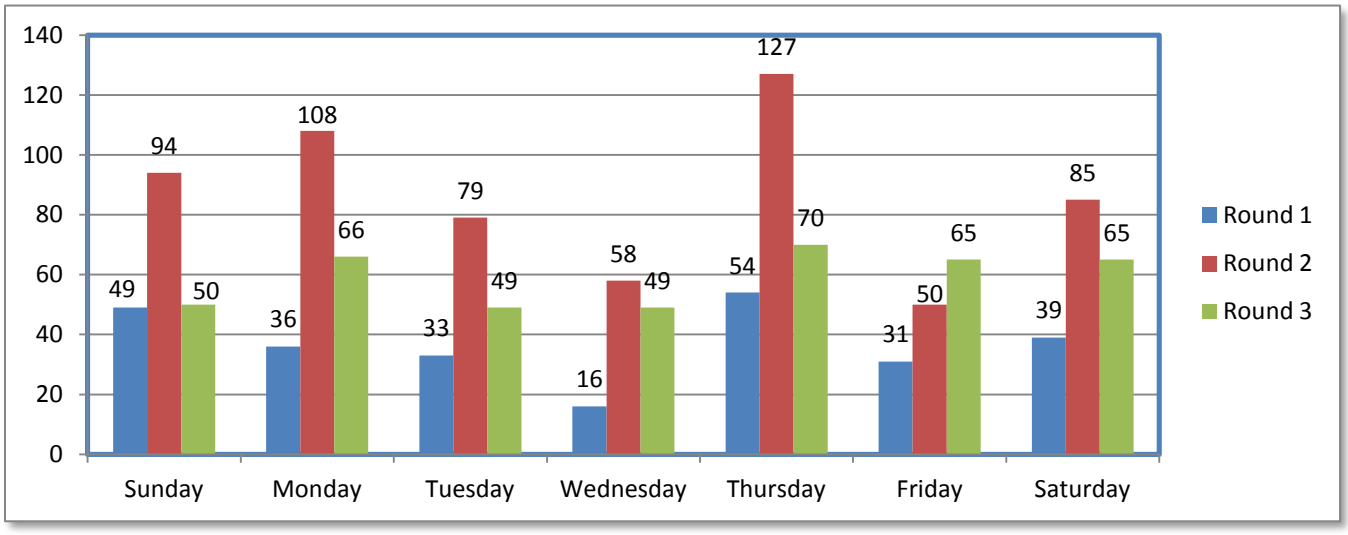
Data was collected continuously for a full week in each round. In Round 1, data was collected 10/4/2011 – 10/11/2011. Round 2 data was collected 4/11/2012 – 4/18/2012. And Round 3 was collected 10-17-12 – 10-23-12.

Totals by Round

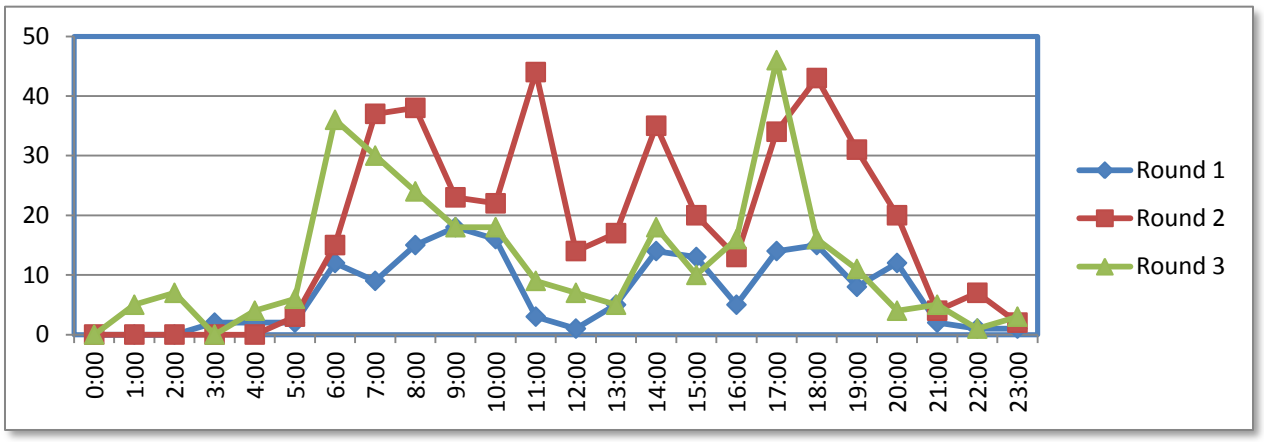
Trail usage on Upper Las Vegas Wash Trail increased in Round 2 following the media campaign, from 258 users to 601. After ¼ mile markers were installed usage in Round 3 (n= 414), declined slightly from Round 2 but was still higher than baseline. This is a similar pattern to overall usage rates on all the trails.



Total Daily Use by Round

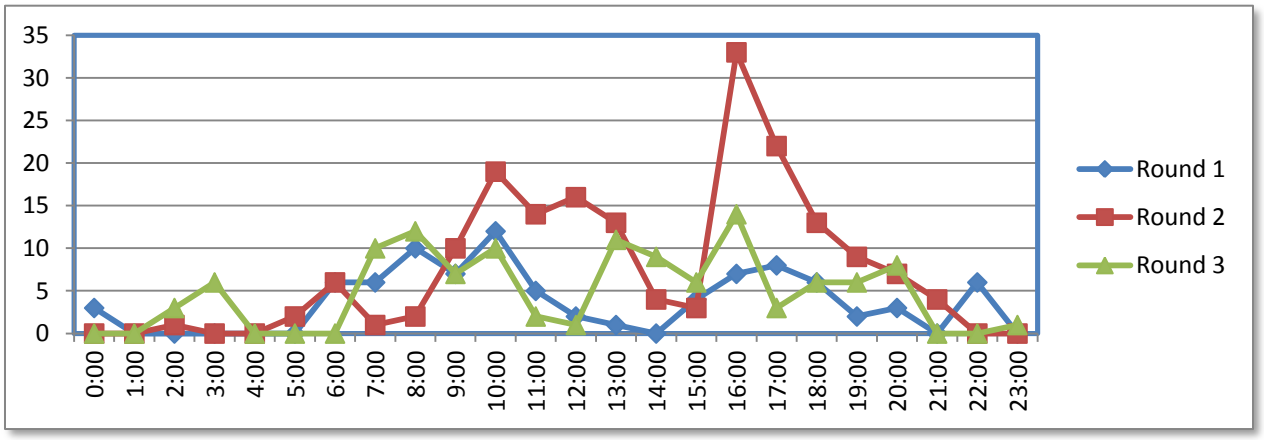


Total Hourly Usage by Round – Weekdays



On this trail, substantial variation in usage patterns between rounds was observed both on weekdays and weekends. And usage was consistently higher in the second round and during the weekdays.

Total Hourly Usage by Round – Weekends



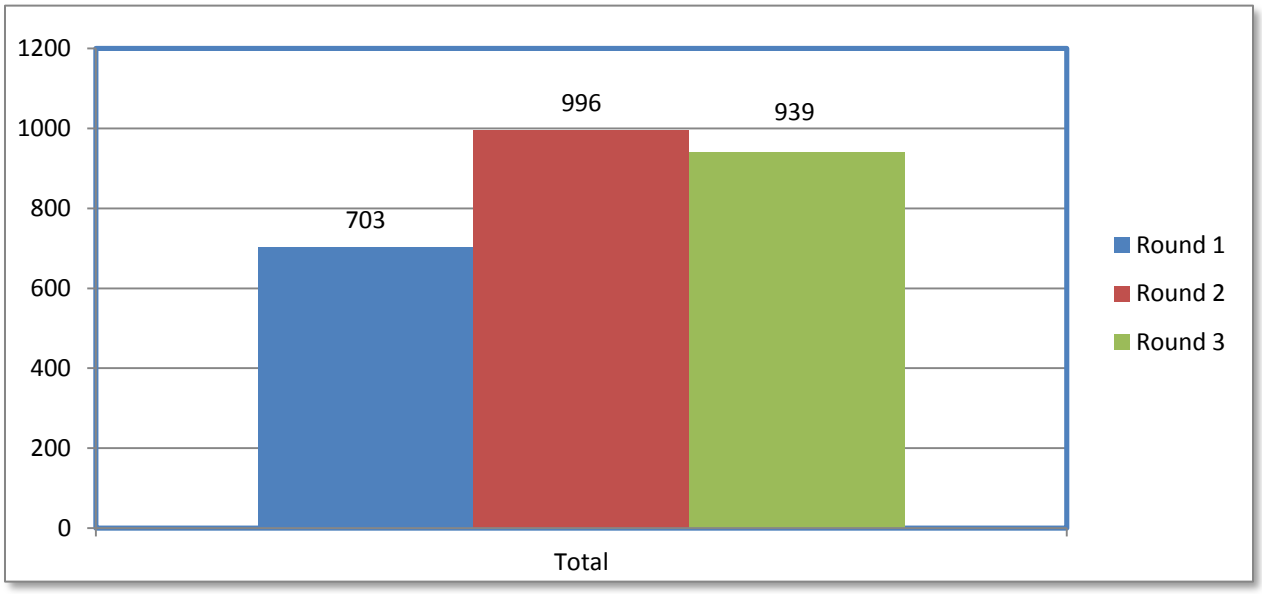
Weekend usage patterns for Upper Las Vegas Wash Trail remained consistent, but usage rates were substantially higher in the early morning and evening in Round 2.

Lower Las Vegas Wash Trail

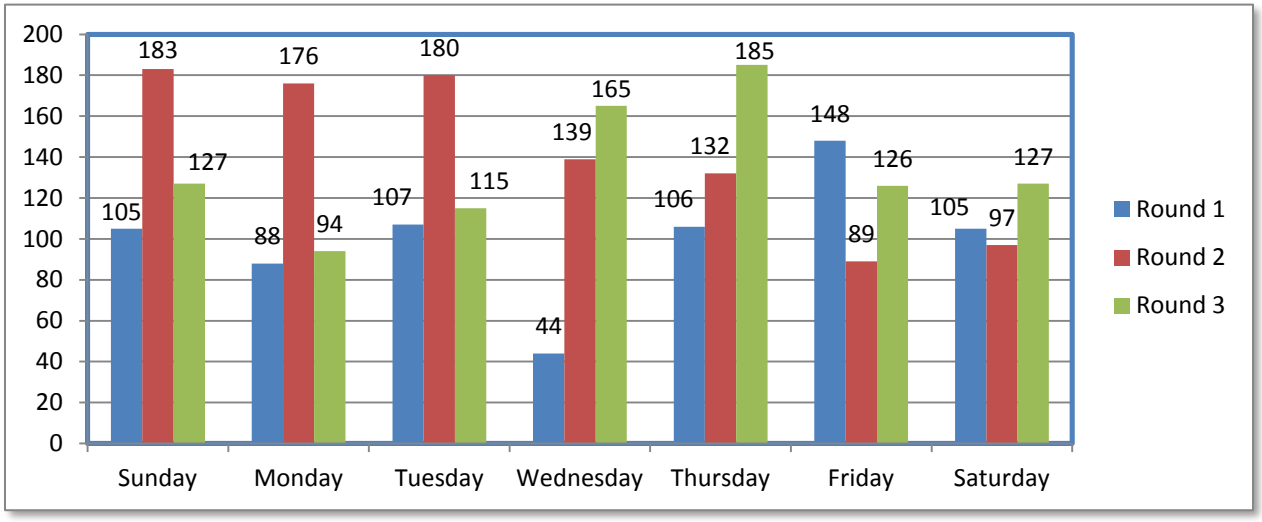
Data was collected continuously for a full week in each round. In Round 1, data was collected 10/4/2011 – 10/11/2011. Round 2 data was collected 4/11/2012 – 4/18/2012. And Round 3 data was collected 10/17/12 – 10/25/12.

Totals by Round

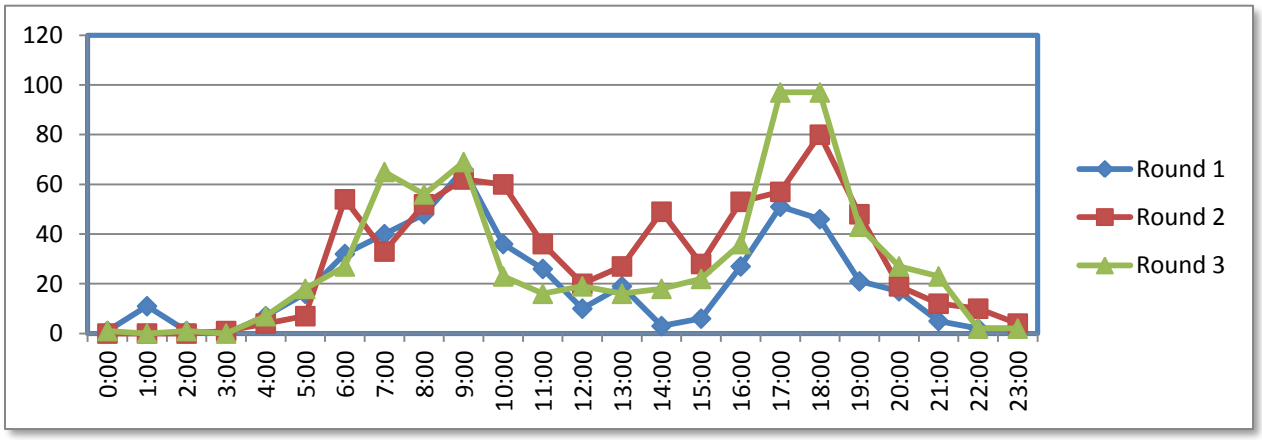
Trail usage on Lower Las Vegas Wash Trail increased in Round 2 following the media campaign, from 703 users to 996. After ¼ mile markers were installed usage in Round 3 (n= 939), declined slightly from Round 2 but was still higher than baseline. This is a similar pattern to overall usage rates on all the trails.



Total Daily Use by Round

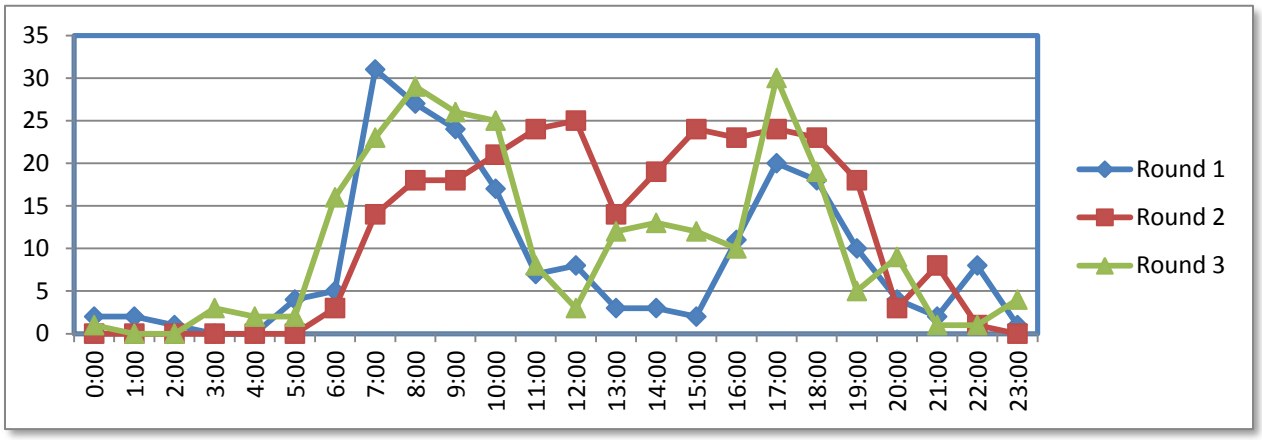


Total Hourly Usage by Round – Weekdays



Peak usage times on weekdays remained fairly similar between all rounds but higher levels of use emerged in the afternoon and continued through the evening. Note the differences in scale between the charts.

Total Hourly Usage by Round – Weekends



In Round 1, weekend use of Lower Las Vegas Wash Trail showed clear morning and evening peaks, but in Round 2, usage was distributed fairly evenly throughout the day. Round 3 usage showed peaks in the morning and early evening. For weekdays, usage patterns remained fairly similar between the rounds, while weekend usage patterns showed more variation.

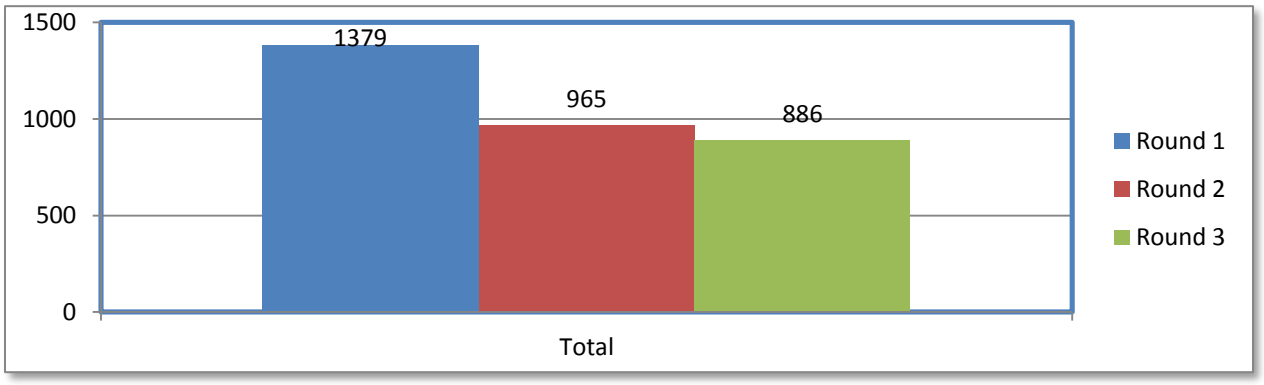
City of Las Vegas Trails

The data collection included two trails in the jurisdiction of the City of Las Vegas: Angel Park Trail and Cedar Drainage Trail. Also included is Pueblo Park Trail, which is within the boundaries of the City of Las Vegas but maintained separately by the Summerlin Council. Angel Park Trail was one of the trails selected for implementation of 1/4 mile markers.

Angel Park Trail

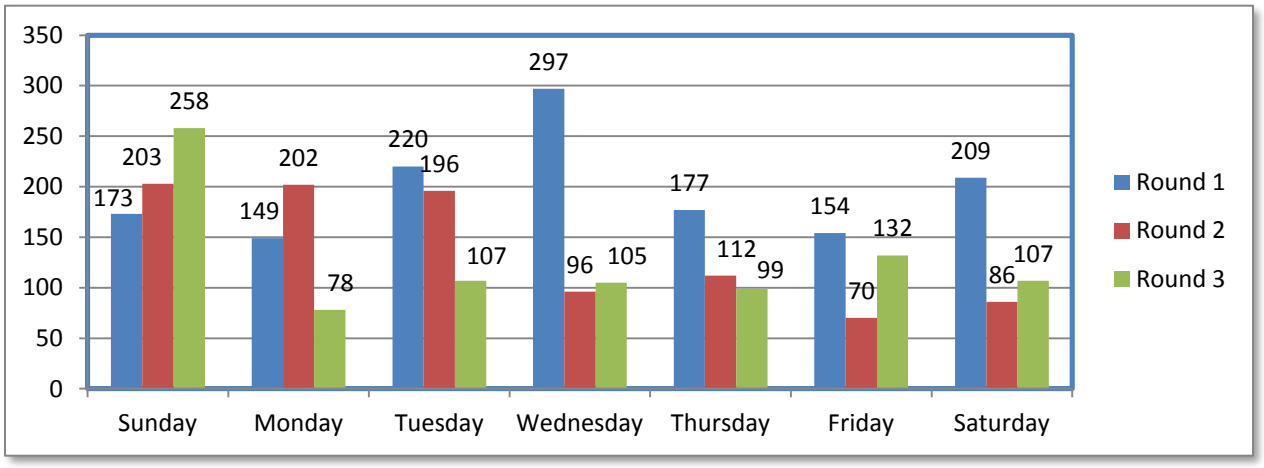
Data was collected continuously for a full week in each round. In Round 1, data was collected 10/11/201 – 10/18/2011. Round 2 data was collected 4/11/2012 – 4/18/2012. And Round 3 data was collected 10/17/12 – 10/23/12.

Totals by Round



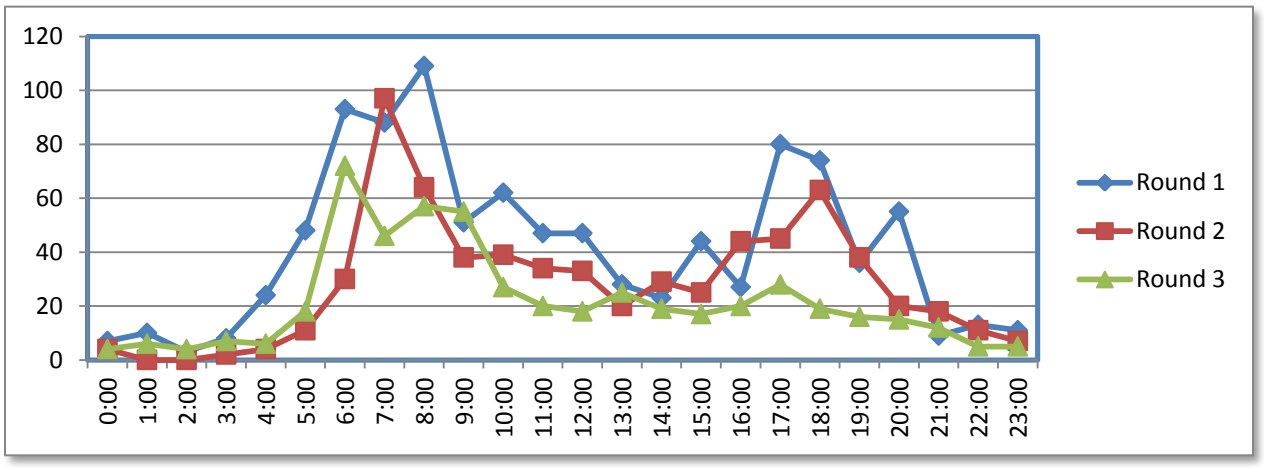
Trail usage on the Angel Park Trail dropped from Round 1 (n =1,379) to Round 2 (n=965) and had a slight decrease in Round 3 (n=886). This is the only trail to see decrease in user totals over the year period.

Total Daily Use by Round



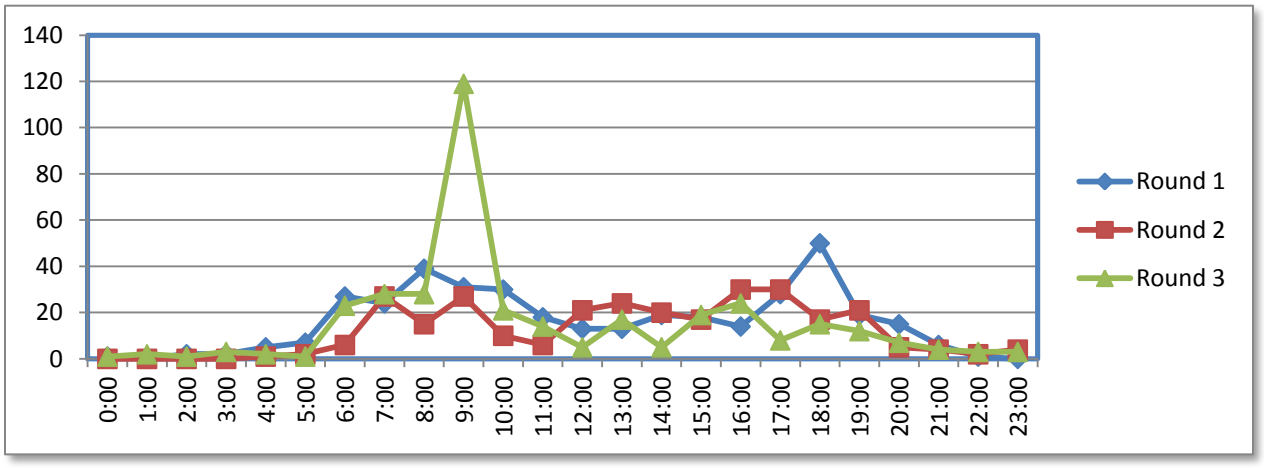
In Round 1 there were two days of that week (Wednesday & Saturday) with very high user counts that had a large impact on the overall numbers for that round.

Total Hourly Usage by Round – Weekdays



Peak usage times on weekdays remained similar between Rounds 1 and 2. Drops in user counts on this trail are most obvious in the early morning hours. Usage time for Round 3 spikes in the morning and gradually declines the remainder of the day.

Total Hourly Usage by Round – Weekends



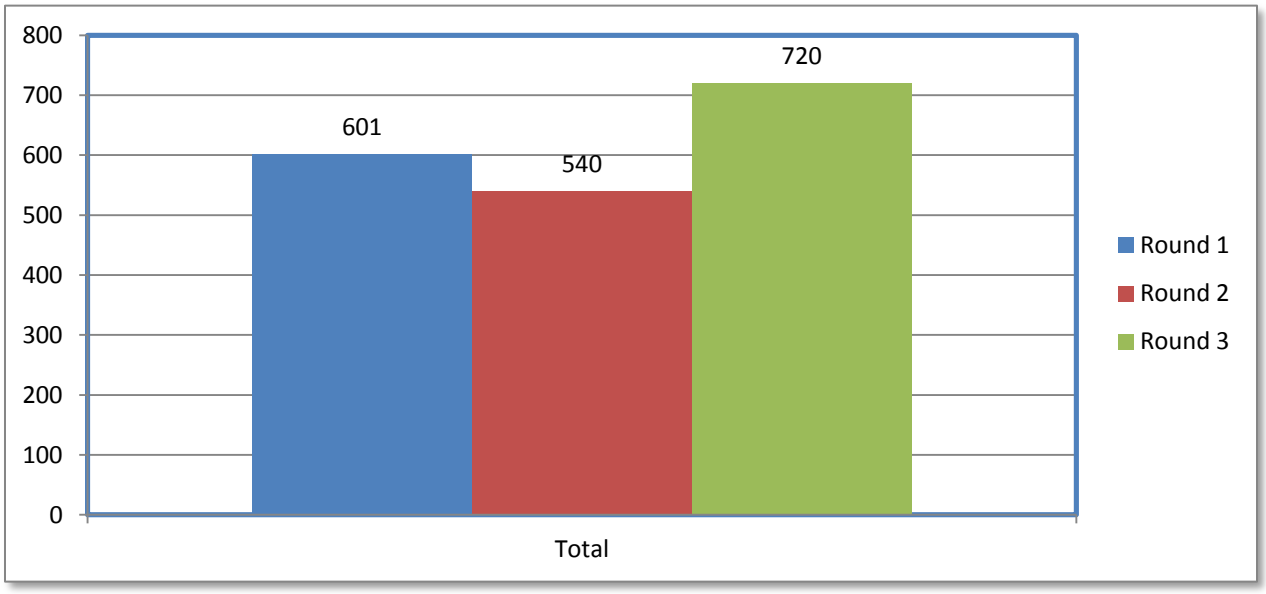
Total usage of this trail was lower on weekends than weekdays. Weekend usage patterns varied between all three rounds. Round 1 saw a spike in usage during the evening. And Round 3 experienced a spike in usage in the morning.

Cedar Drainage Trail

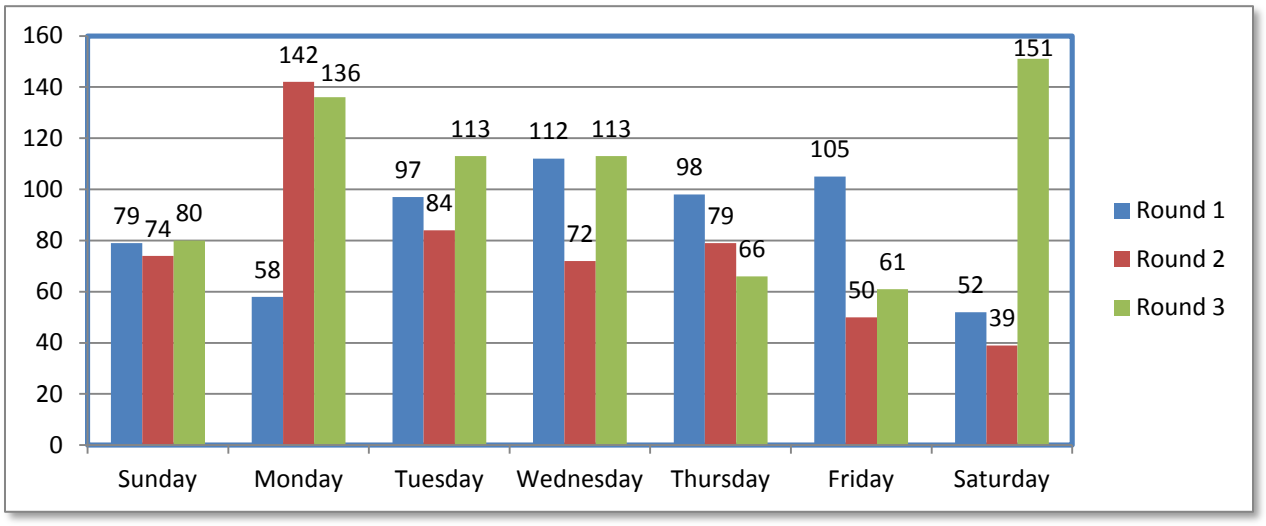
Data was collected continuously for a full week in each round. In Round 1, data was collected 9/27/2011 – 10/4/2011. Round 2 data was collected 4/11/2012 – 4/18/2012. And Round 3 data was collected 11/3/12 – 11/9/12.

Totals by Round

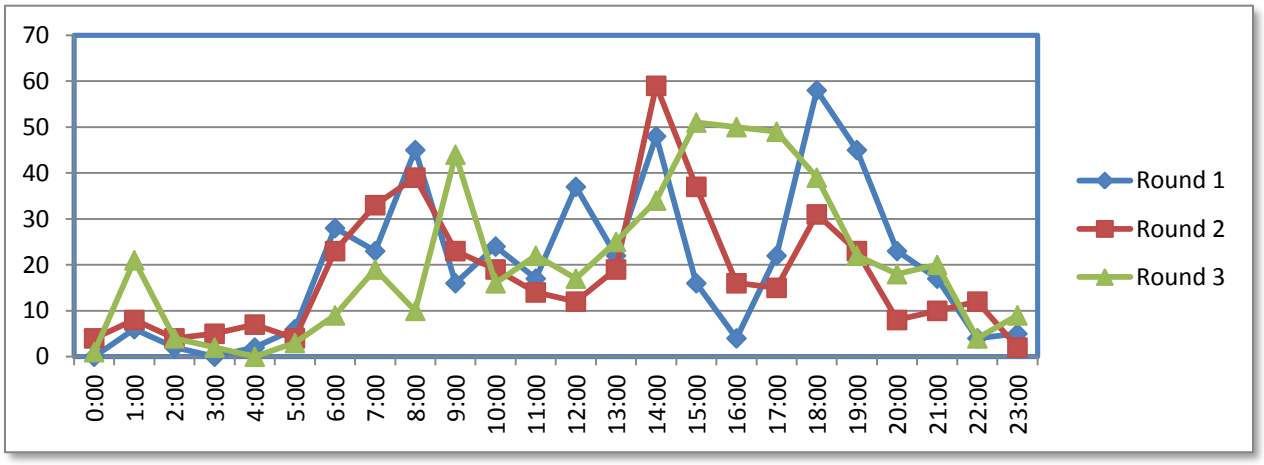
Trail usage on the Cedar Drainage Trail dropped slightly during Round 2 (n= 540) and increased significantly in Round 3 (n =720) to show a higher than baseline total.



Total Daily Use by

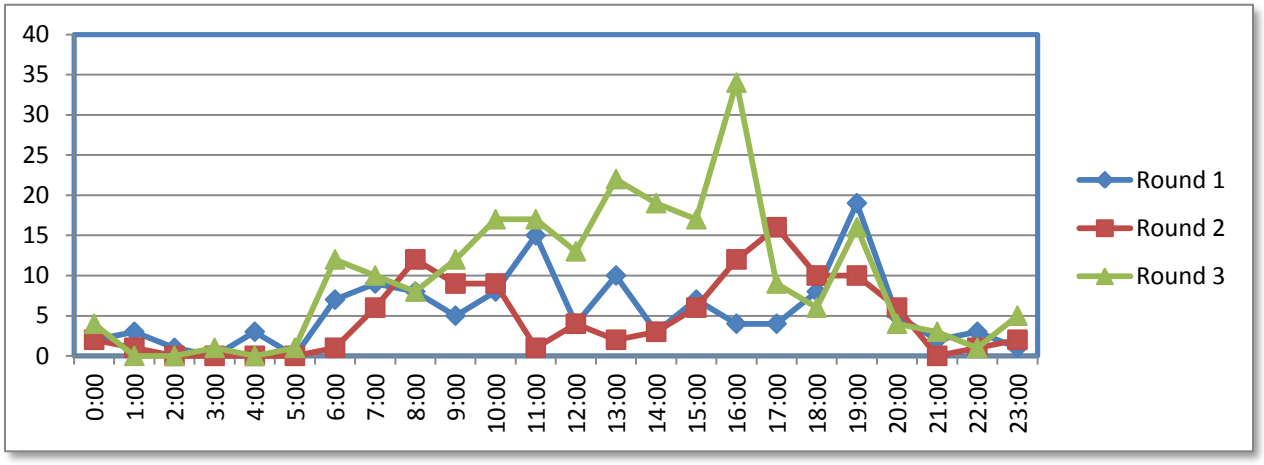


Total Hourly Usage by Round – Weekdays



Peak usage patterns on this trail varied between Rounds. In the first round of data collection, usage was highest in the early evening, while in the second round, traffic appears to highest in the mid-afternoon, with a downward trend through the evening. Round 3 had consistent usage from mid-afternoon to early evening.

Total Hourly Usage by Round – Weekends



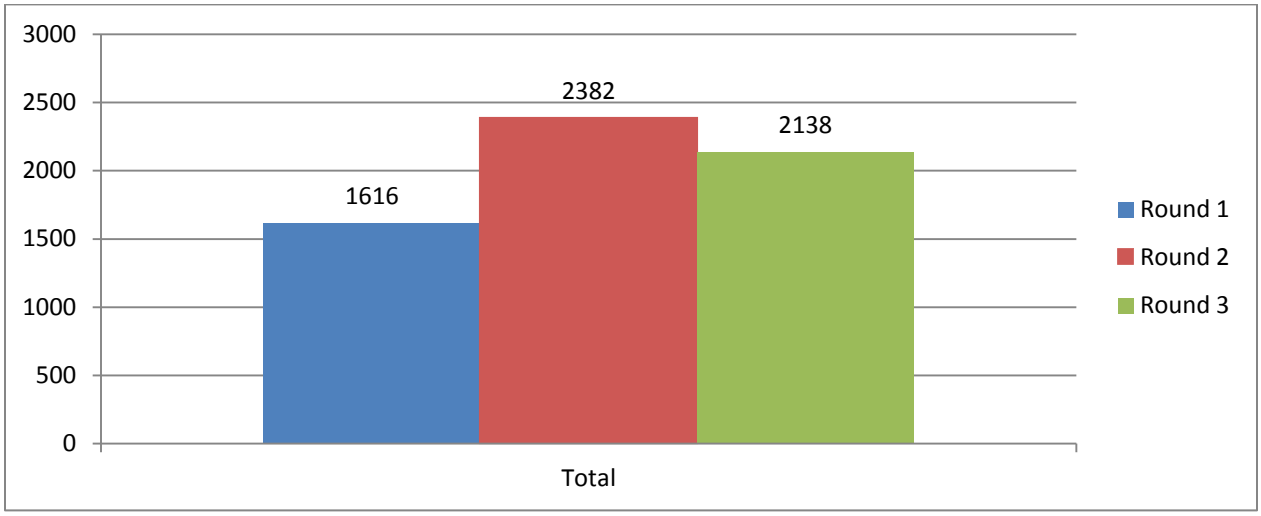
Total usage of this trail was lower on weekends than weekdays. Each round had a separate peak times between the late-afternoon and evening.

Pueblo Park Trail

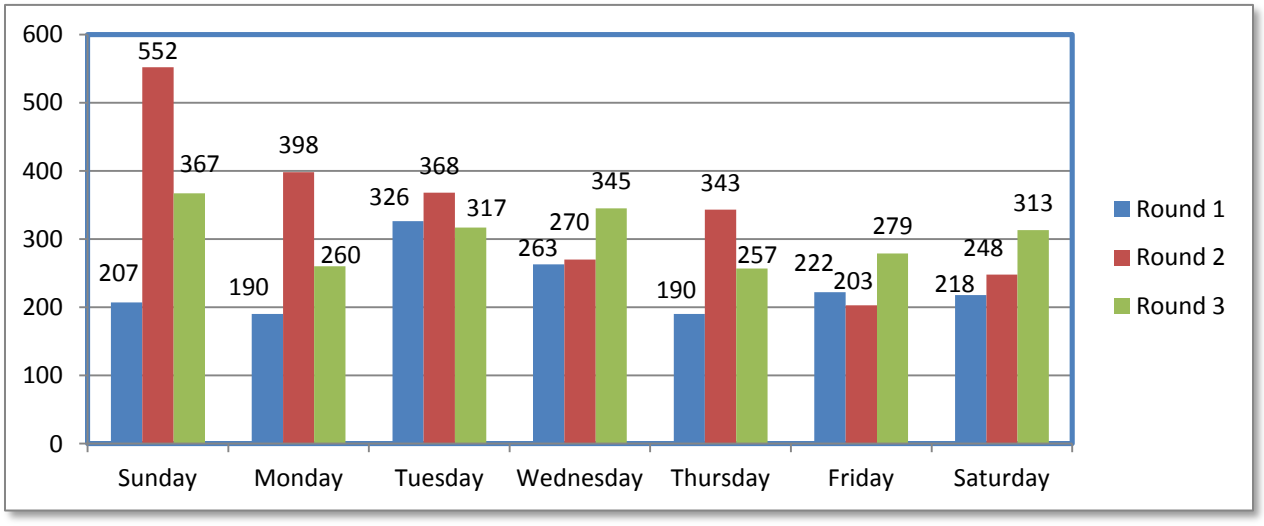
Data was collected continuously for a full week in each round. In Round 1, data was collected 10/12/2011 – 10/19/2011. Round 2 data was collected 4/11/2012 – 4/18/2012. And Round 3 data was collected 10/17/12 – 10/23/12.

Totals by Round

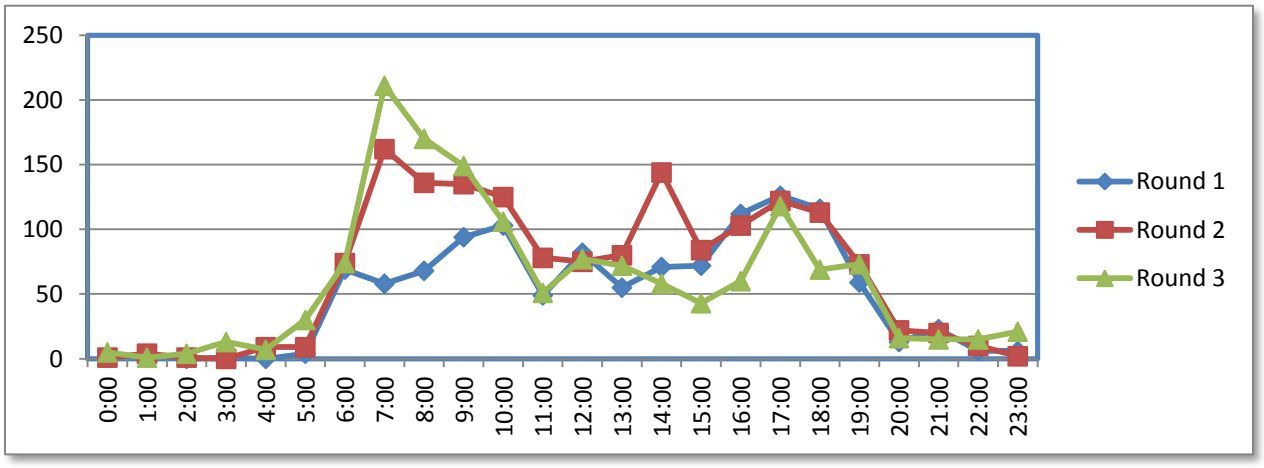
Trail usage on Pueblo Park Trail increased in Round 2 following the media campaign, from 1,616 users to 2,382. After ¼ mile markers were installed usage in Round 3 (n= 2138), declined slightly from Round 2 but was still higher than baseline. This is a similar pattern to overall usage rates on all the trails.



Total Daily Use by Round

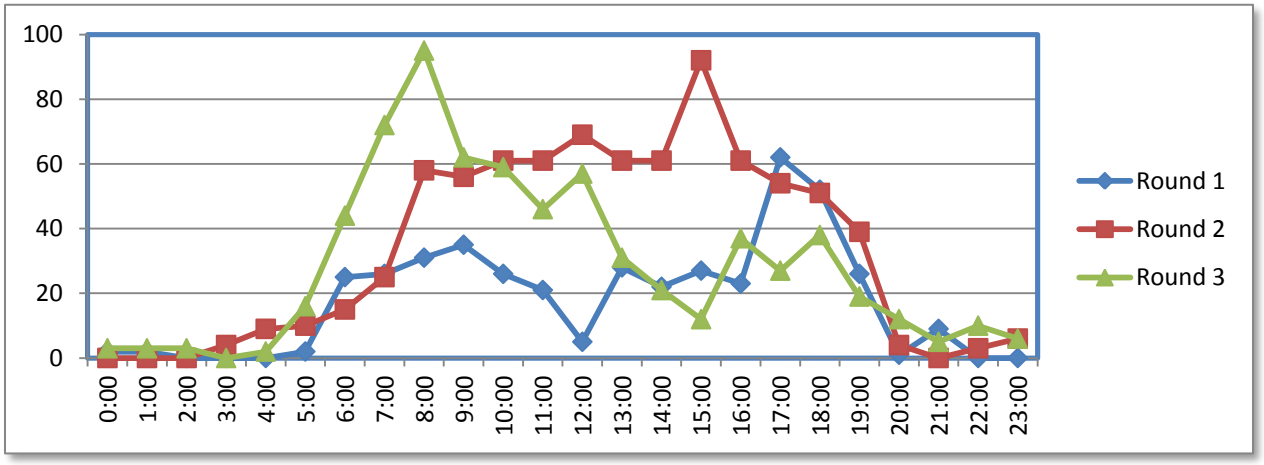


Total Hourly Usage by Round – Weekdays



Peak weekday usage patterns on this trail varied in the mornings. In the second round of data collection, traffic on this trail increased in the morning and remained similar during the evening hours. Evening patterns for all rounds was similar but slightly lower for Round 3.

Total Hourly Usage by Round – Weekends



Between Rounds 1 and 2, this trail saw an increase in weekend traffic over most hours of the day. Round 3 had a spike in usage in the early morning and tapered off throughout the day.

Clark County

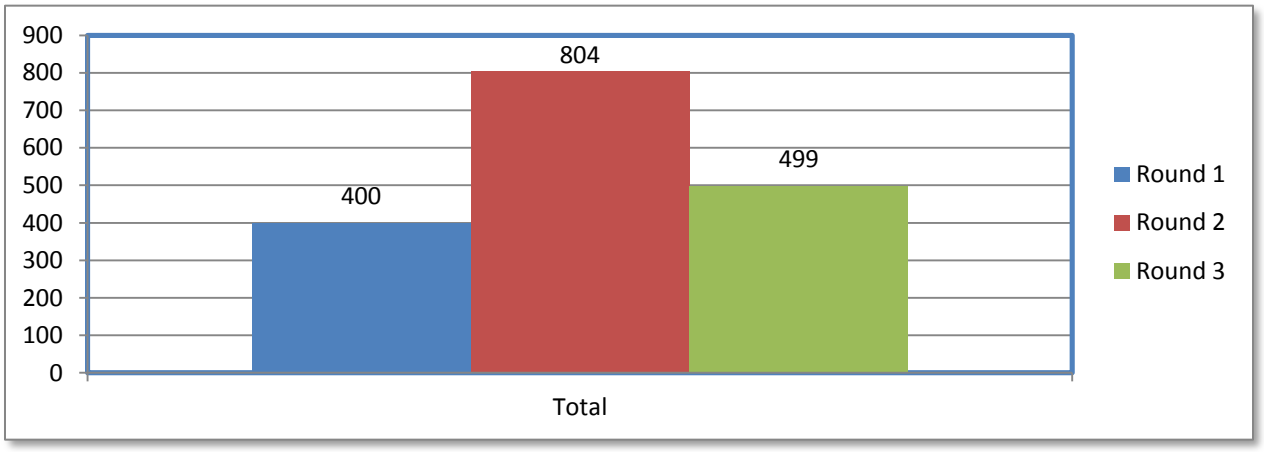
The data collection included three trails in the jurisdiction of Clark County: the 215 East Beltway Trail, the 215 West Beltway Trail, and Flamingo Arroyo Trail. The 215 East Beltway Trail and the Flamingo Arroyo Trail were both selected for implementation of 1/4 mile markers.

215 East Beltway Trail

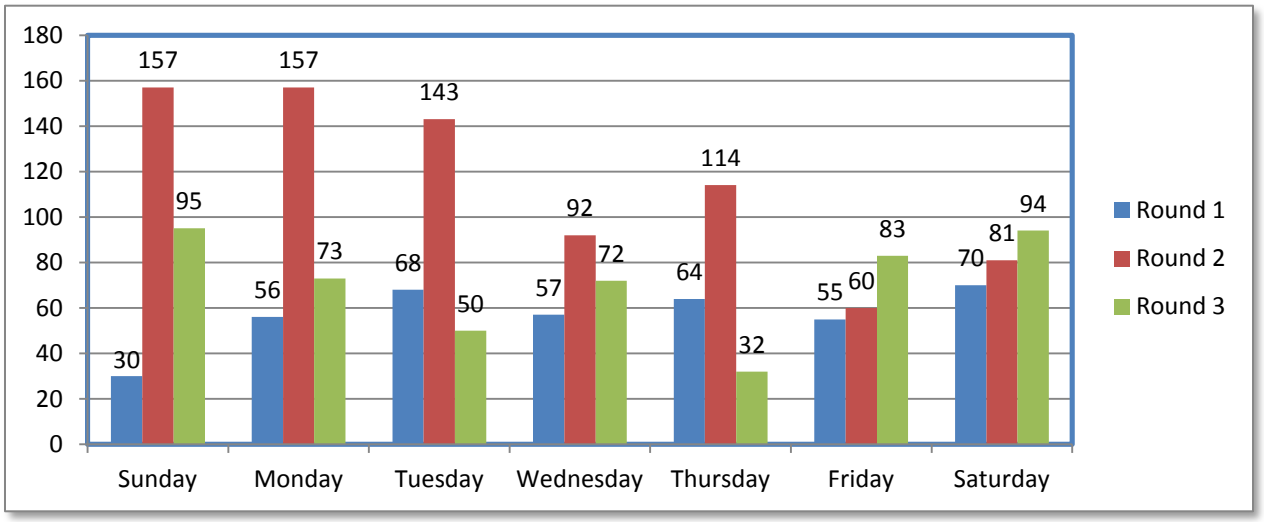
Data was collected continuously for a full week in each round. In Round 1, data was collected 11/2/2011 – 11/9/2011. Round 2 data was collected 4/11/2012 – 4/18/2012. And Round 3 data was collected on 11/3/12 – 11-9-12.

Totals by Round

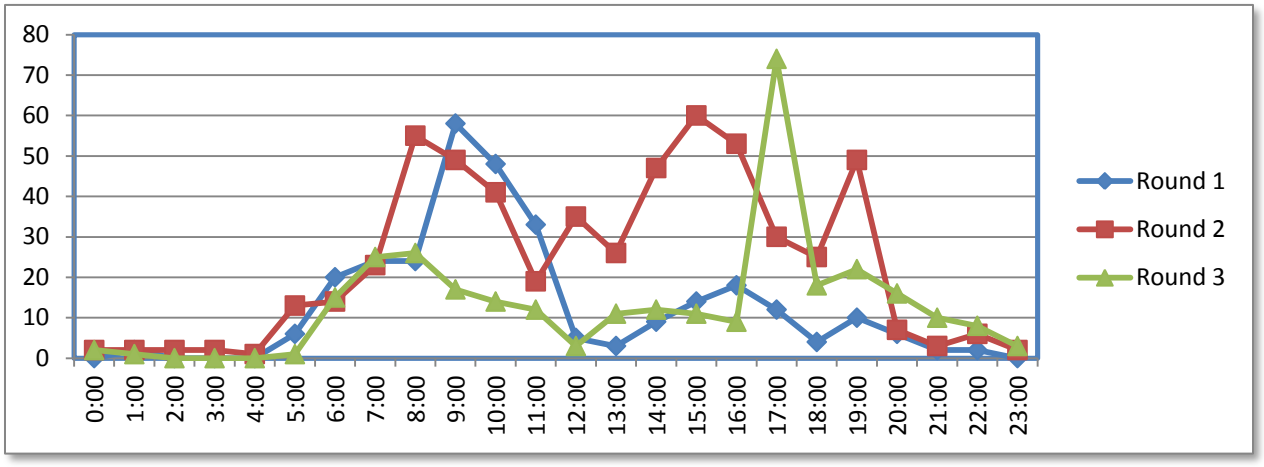
Trail usage on the 215 East Beltway Trail increased in Round 2 following the media campaign, from 400 users to 804. After ¼ mile markers were installed usage in Round 3 (n= 499), declined from Round 2 but was still higher than baseline. This is a similar pattern to overall usage rates on all the trails.



Total Daily Use by Round

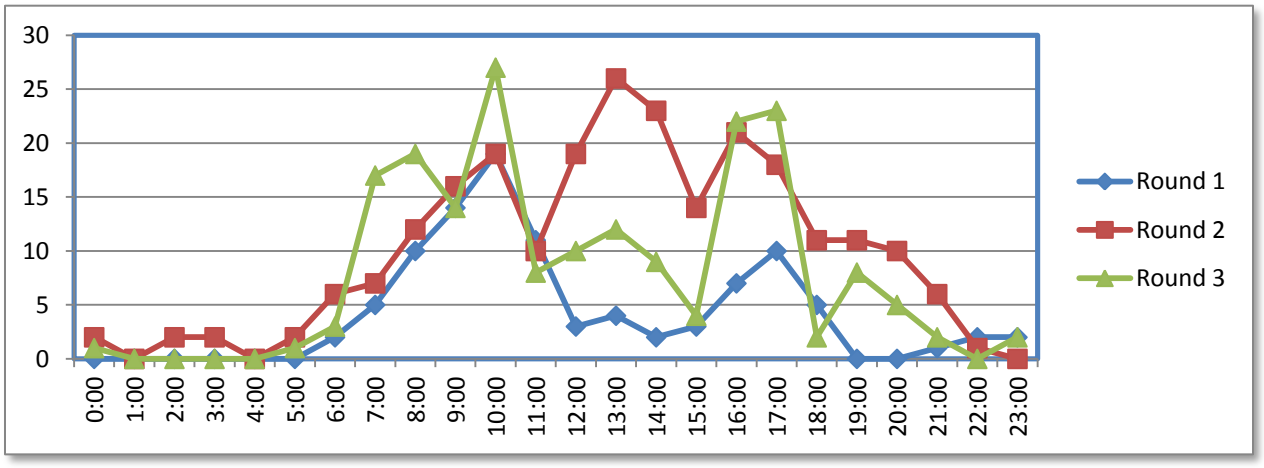


Total Hourly Usage by Round – Weekdays



Peak usage times on weekdays remained similar between Rounds 1 and 2, but volume increases for Round 2 emerged in the afternoon and evening. Round 3 showed a spike in usage in the evening.

Total Hourly Usage by Round – Weekends



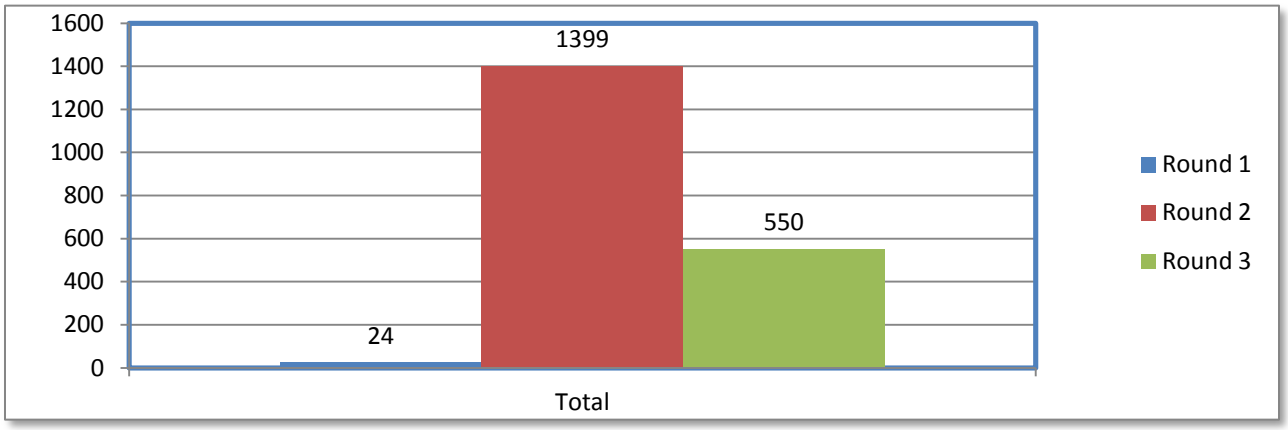
Total usage of this trail was lower on weekends than on weekdays. The usage patterns varied between rounds on this trail during the weekends. Note the differences in scale between the charts.

215 West Beltway Trail

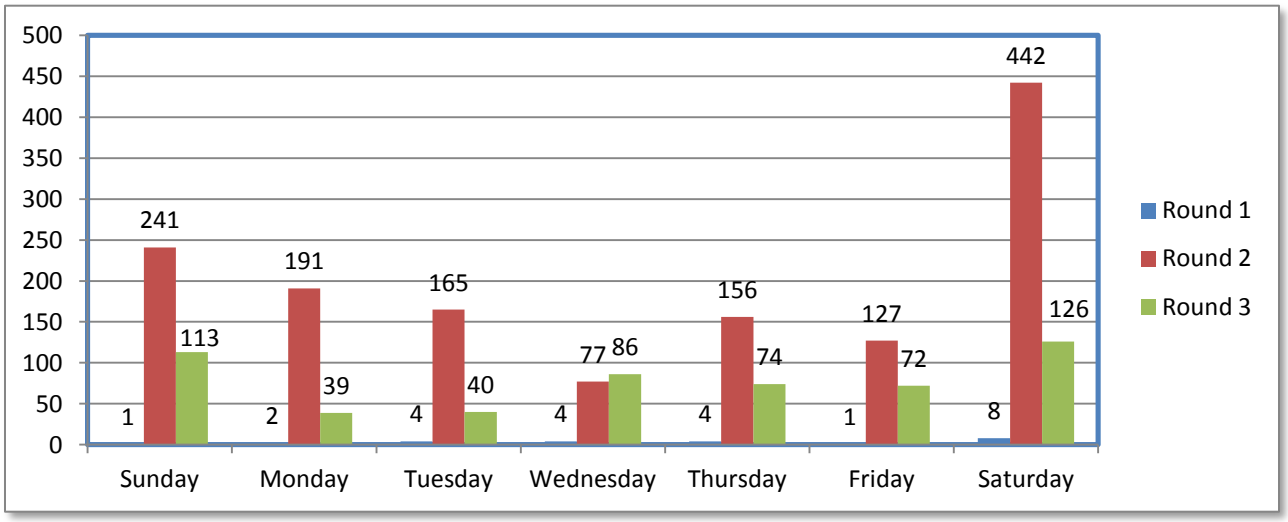
Data was collected continuously for a full week in each round. In Round 1, data was collected 11/2/2011 – 11/9/2011. In Round 2, data was collected 4/20/2012 – 4/27/2012. And Round 3 data was collected 10/17/12 – 10/23/12.

Totals by Round

Trail usage on the 215 West Beltway Trail increased in Round 2 following the media campaign, from 24 users to 1399. After ¼ mile markers were installed usage in Round 3 (n= 550), declined from Round 2 but was still higher than baseline. This is a similar pattern to overall usage rates on all the trails.

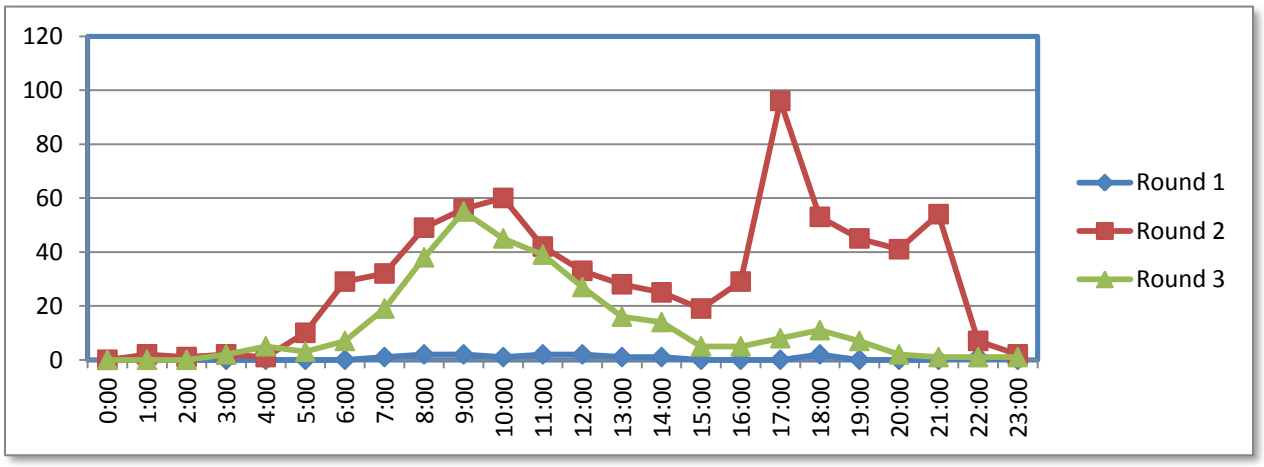


Total Daily Use by Round



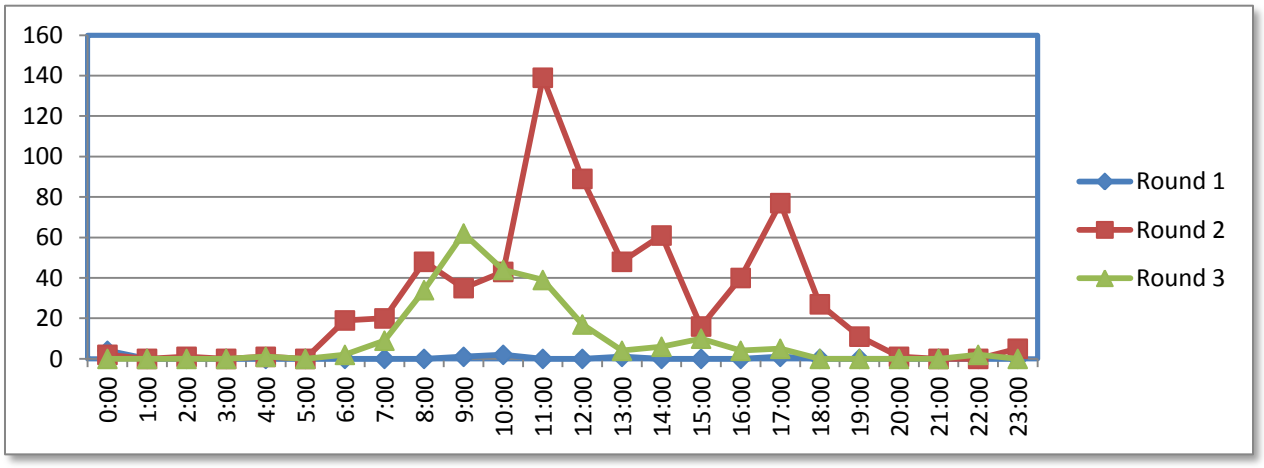
While a wide discrepancy in counts for this trail was documented, it is important to note that in both rounds, the electronic counts collected agreed with the manual counts which were collected to ensure accuracy. Round 2 on Saturday indicate very high usage for that day.

Total Hourly Usage by Round – Weekdays



Round 2 and Round 3 have similar usage patterns in the day but the pattern drastically changes in the evening.

Total Hourly Usage by Round – Weekends



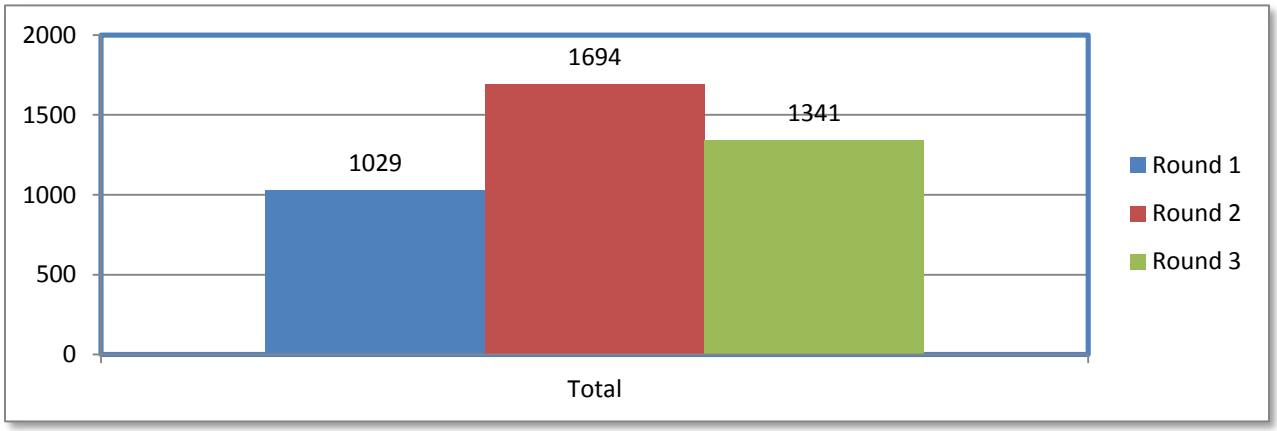
Weekend usage increased in Round 2, with peaks occurring in mid-morning and late afternoon. While Round 3 peaks in the morning and then slowly decreased over time. Peak weekend usage on the 215 West Beltway Trail exceeded peak weekday usage, which is a unique characteristic for this trail.

Flamingo Arroyo Trail

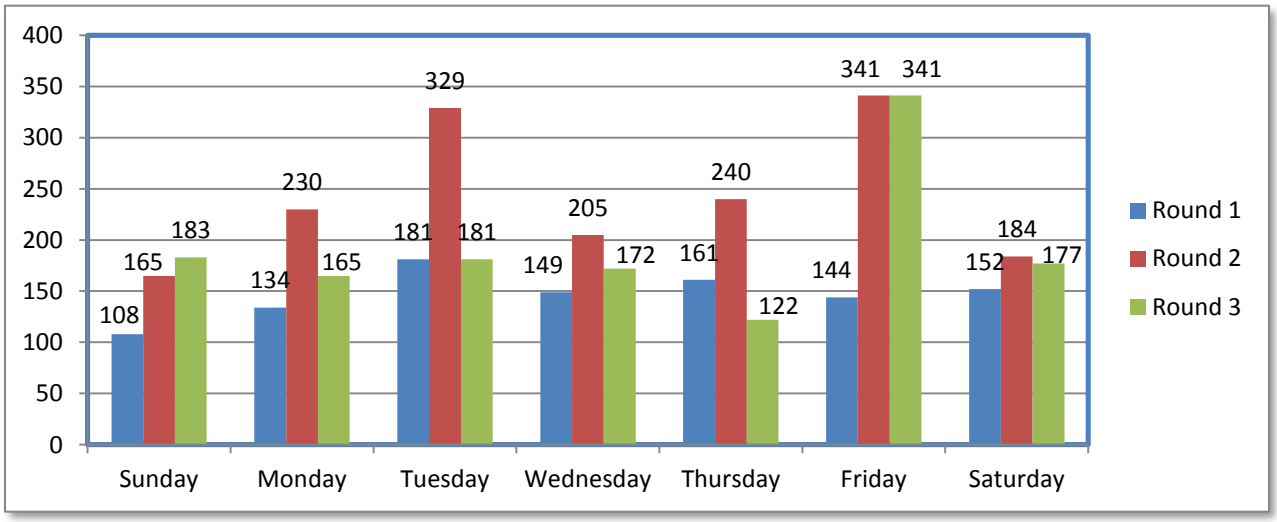
Data was collected continuously for a full week in each round. In Round 1, data was collected 9/27/2011 – 10/4/2011. Round 2, data was collected 5/1/2012 – 5/8/2012. And Round 3 data was collected 11/2/12 – 11/8/12.

Totals by Round

Trail usage on the Flamingo Arroyo Trail increased in Round 2 following the media campaign, from 1,029 users to 1,694. After ¼ mile markers were installed usage in Round 3 (n= 1341), declined from Round 2 but was still higher than baseline. This is a similar pattern to overall usage rates on all the trails.

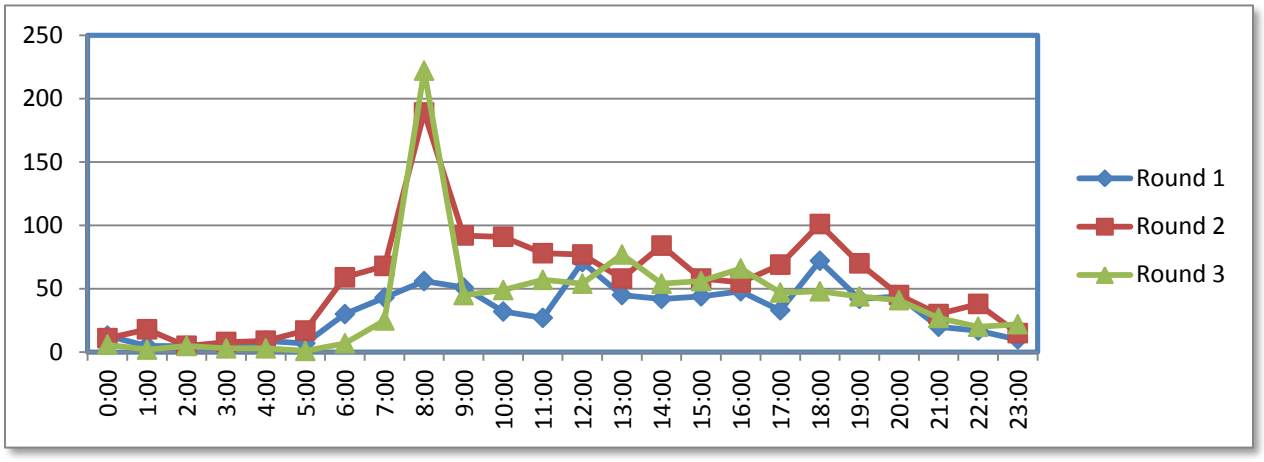


Total Daily Use by Round



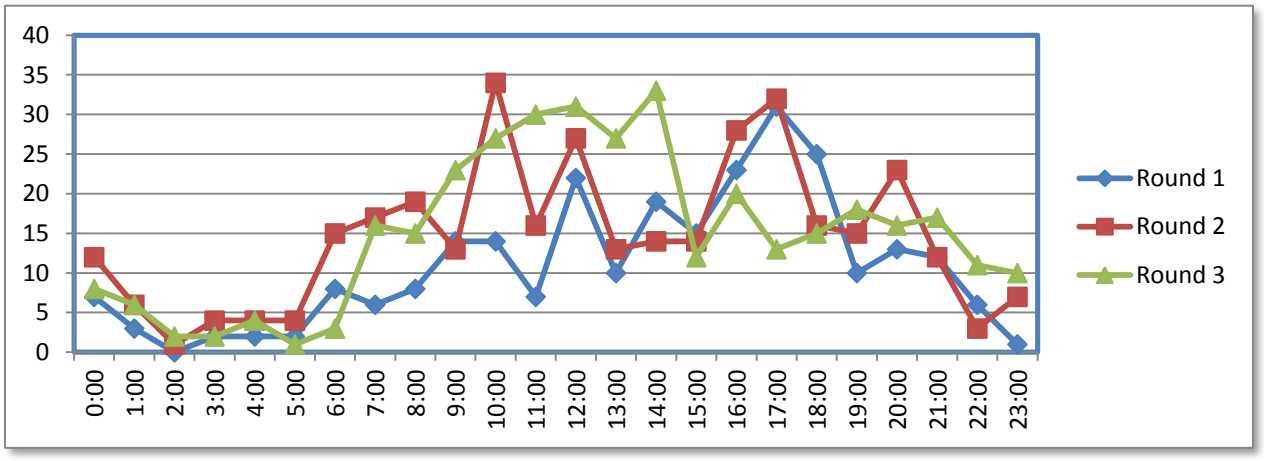
It is important to note that during the second round of data collection, construction activities were taking place near this trail. Because of our method of data collection, we are unable to determine how much of the increase in trail traffic is attributable to the construction. The observed increases are consistent with increases on other local trails which were not under construction.

Total Hourly Usage by Round – Weekdays



Peak usage times on weekdays remained similar between Rounds , except for a large increase in traffic during the morning peak for Rounds 2 and 3.

Total Hourly Usage by Round – Weekends



Total usage of this trail was lower on weekends than weekdays. Weekend usage patterns varied between rounds. Note the differences in scale between the charts. Other than the weekday morning spike discussed above, usage patterns remained fairly similar between the rounds.

City of Henderson

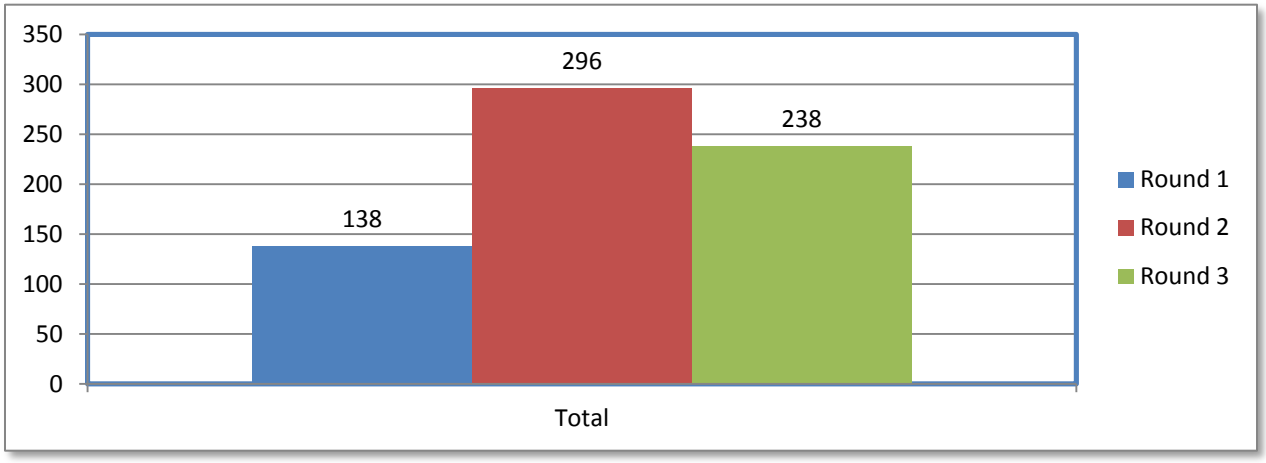
Data collection included three trails in the jurisdiction of the City of Henderson: Amargosa Trail, Cactus Wren Trail, and Pittman Wash Trail. Pittman Wash Trail was closed for construction during the second and third round of data collection, so only baseline data for that trail is presented below.

Amargosa Trail

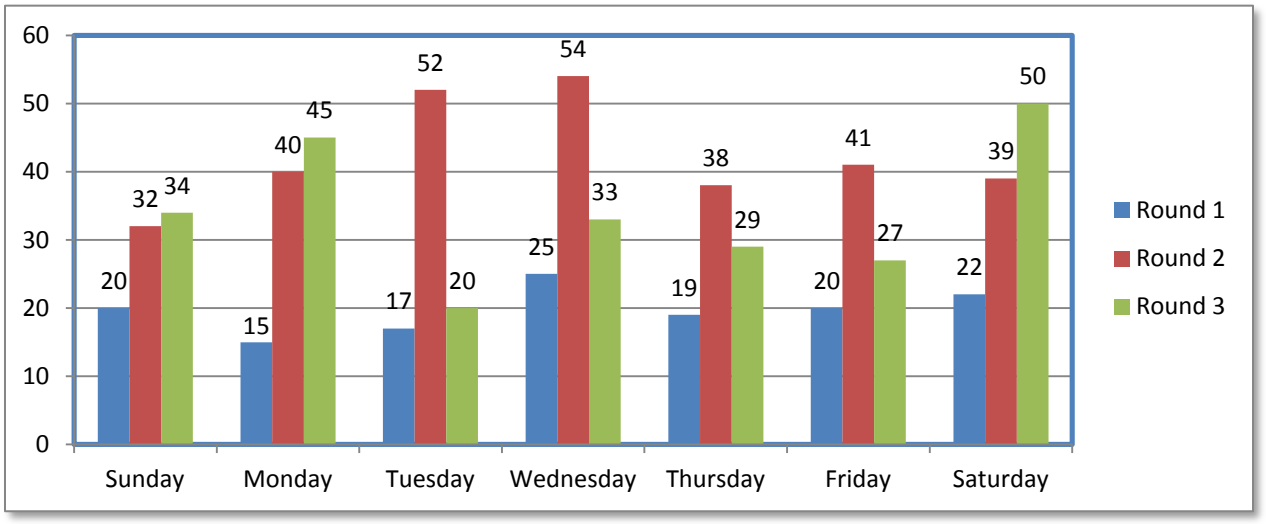
Data was collected continuously for a full week in each round. In Round 1, data was collected 11/2/2011 – 11/9/2011. Round 2, data was collected 4/20/2012 – 4/27/2012. And Round 3 data was collected 10/14/12 – 10/20/12.

Totals by Round

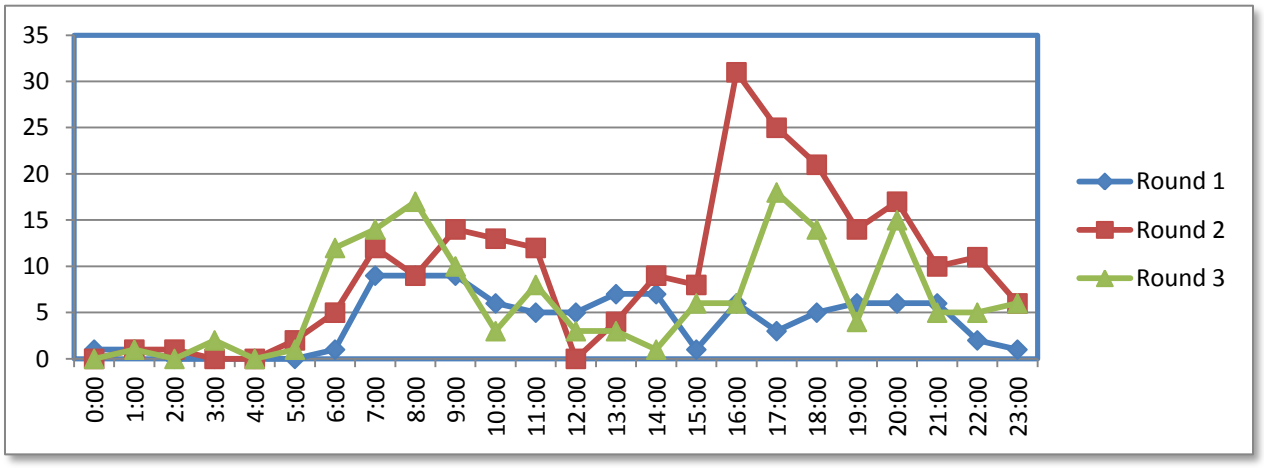
Trail usage on the Amargosa Trail increased in Round 2 following the media campaign, from 138 users to 296. After ¼ mile markers were installed usage in Round 3 (n= 238), declined slightly from Round 2 but was still higher than baseline. This is a similar pattern to overall usage rates on all the trails.



Total Daily Use by Round

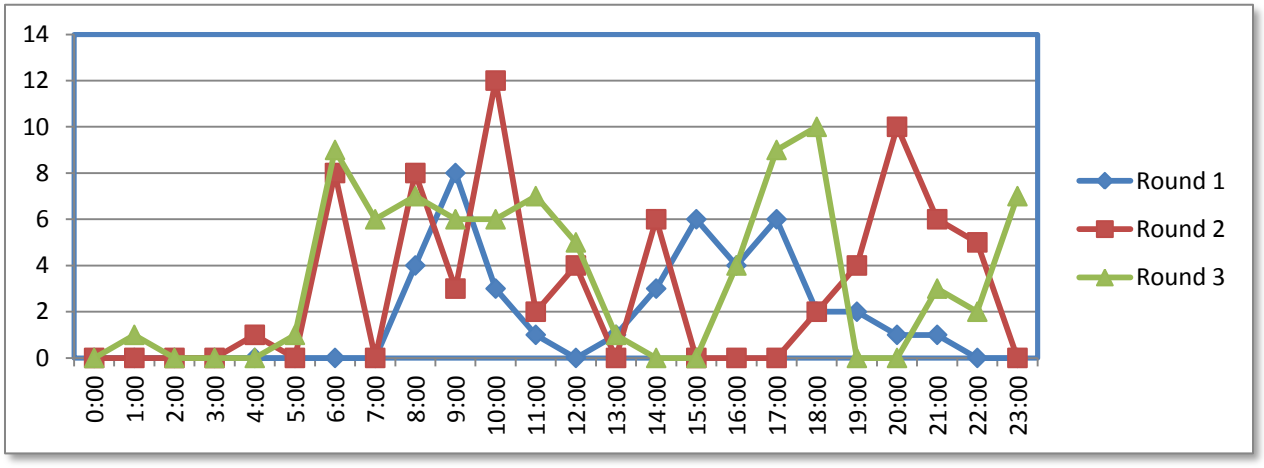


Total Hourly Usage by Round – Weekdays



Round 1 usage was pretty consistent except for a small decline in the early evening. And Round 2 and 3 usage patterns were similar to each other.

Total Hourly Usage by Round – Weekends



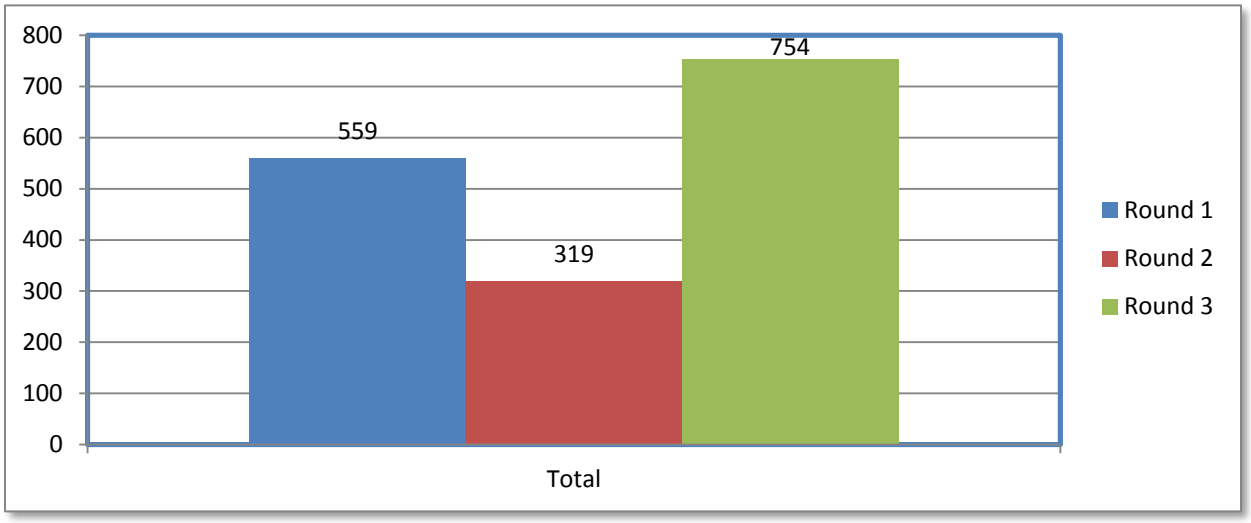
Total usage of this trail was lower on weekends than weekdays. Note the differences in scale between the charts. Weekend usage showed more variation between rounds.

Cactus Wren Trail

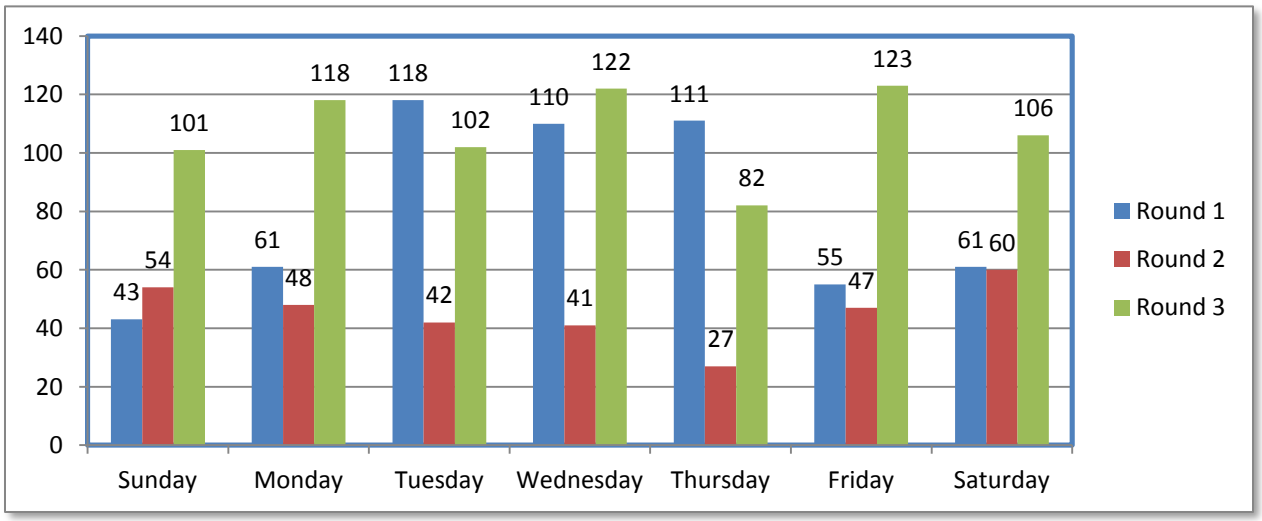
Data was collected continuously for a full week in each round. In Round 1, data was collected 11/15/2011 – 11/22/2011. Round 2, data was collected 4/20/2012 – 4/27/2012. And Round 3 data was collected 11/19/12 – 11/25/12.

Totals by Round

Trail usage on the Cactus Wren Trail dropped slightly during Round 2 (n= 319) and increased significantly in Round 3 (n =754) to show a higher than baseline total.

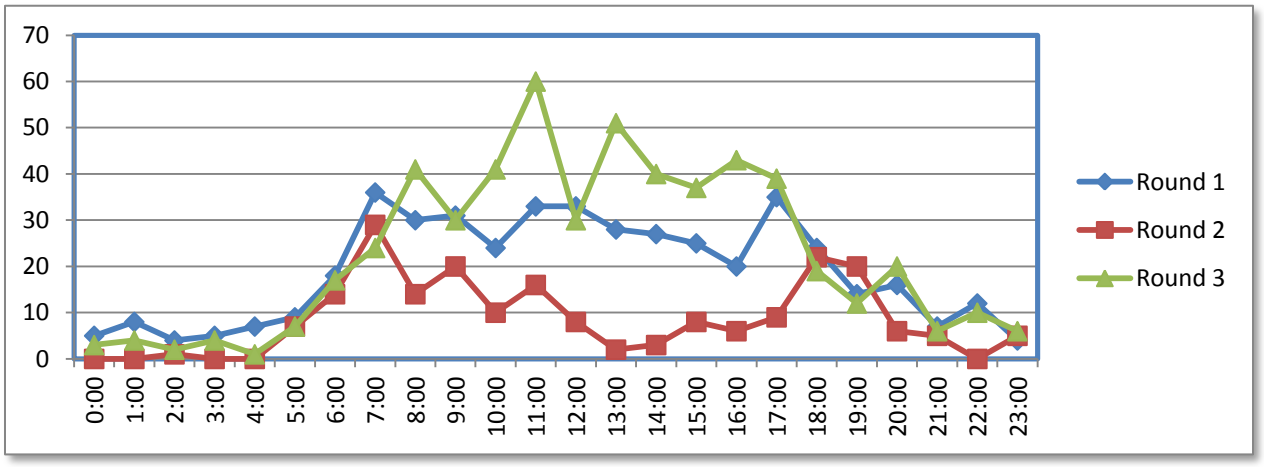


Total Daily Use by Round



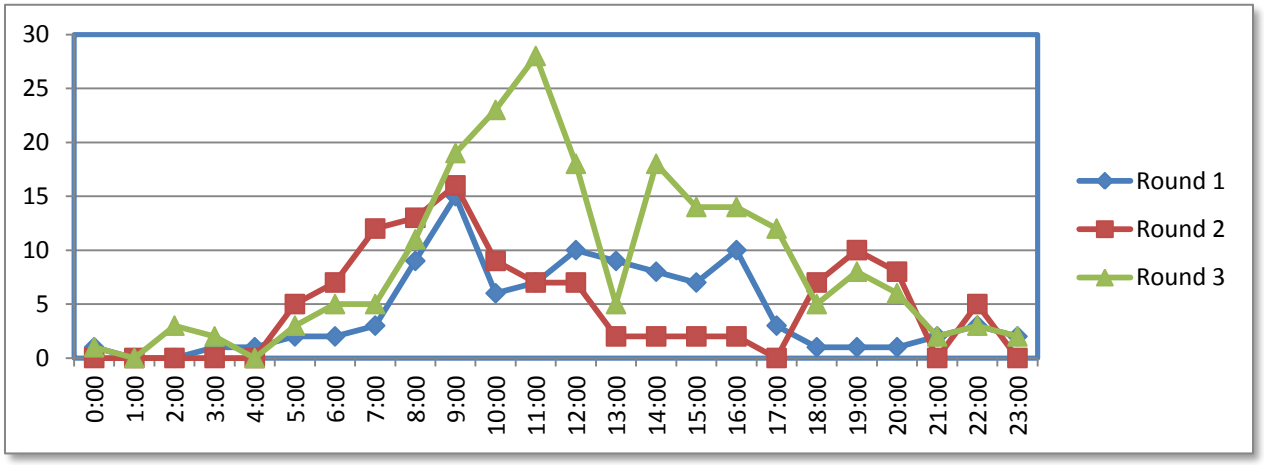
Trail usage on Cactus Wren Trail dropped during the second round of data collection, from 559 users to 319 but showed a dramatic increase in the third round of data collection.

Total Hourly Usage by Round – Weekdays



Round 1 and 2 usage patterns were very similar in the day with differences in the evening. Round 3 had various spikes during the morning and early afternoon.

Total Hourly Usage by Round – Weekends

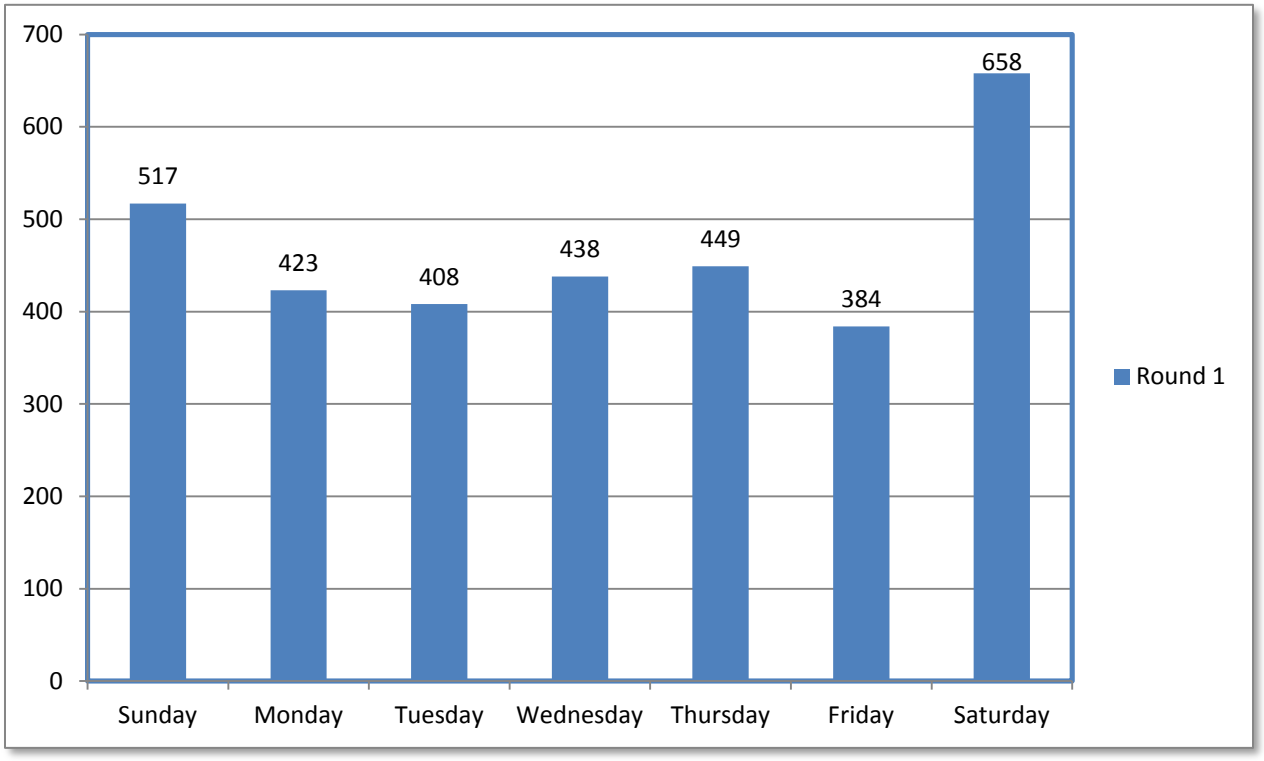


Total usage of this trail was lower on weekends than weekdays. Again, consistent traffic throughout the day in Round 1 was replaced by morning and evening peaks in Round 2.Note the differences in scale between the charts.

Pittman Wash Trail

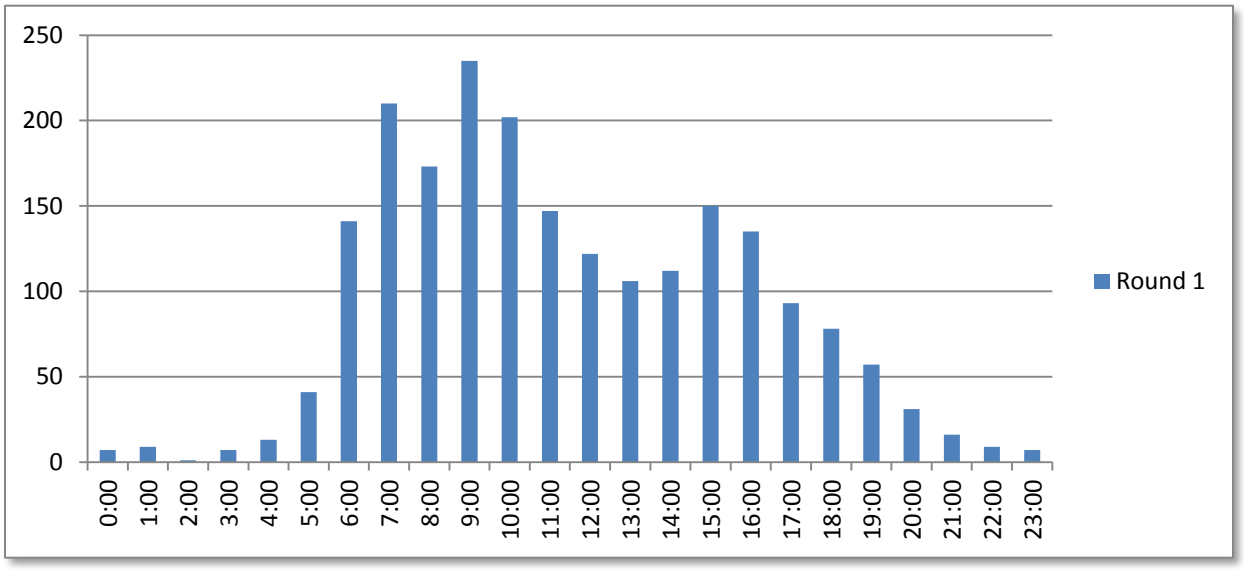
In Round 1, data was collected 11/15/2011 – 11/22/2011. Due to construction on this trail additional collection rounds were not able to be completed. This trail data was not included in the overall trail report results.

Total Daily Use



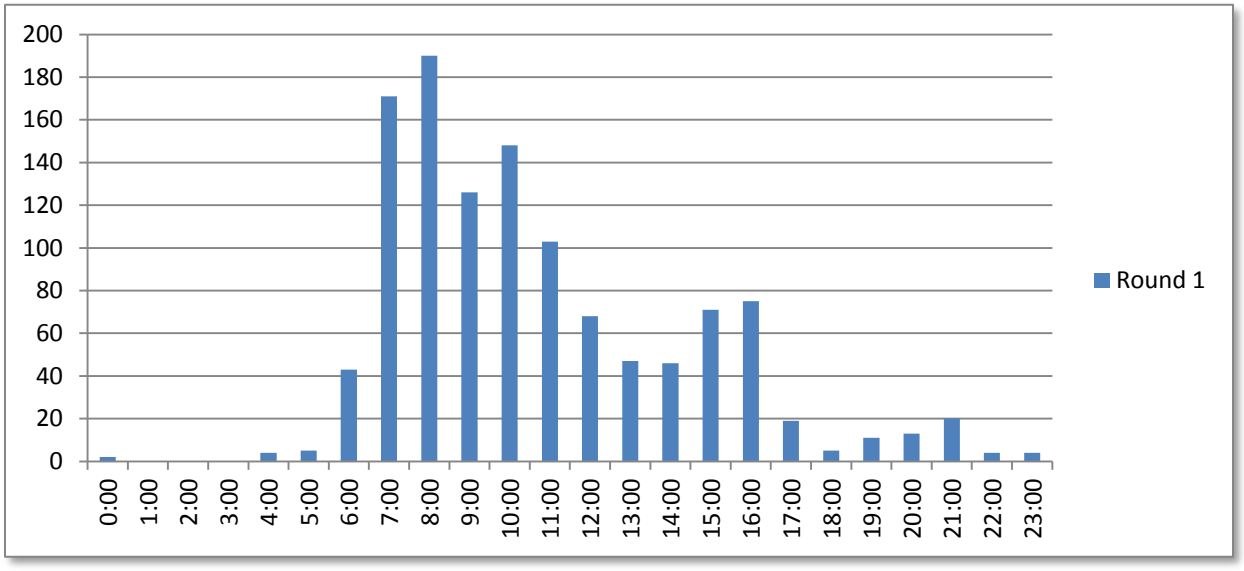
Total trail use for Pittman Wash in Round 1 was 3,277. The highest usage was recorded on Saturday.

Total Hourly Usage – Weekdays



On weekdays in Round 1, Pittman Wash traffic levels showed a pattern of morning and evening peaks, which is typical for local trails.

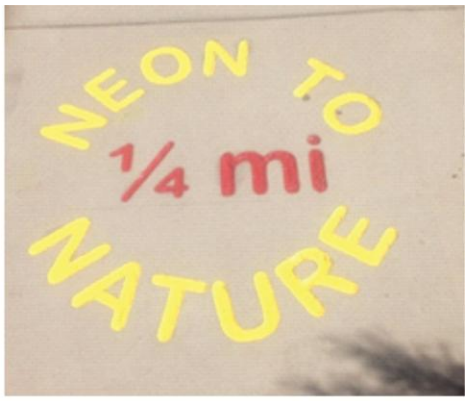
Total Hourly Usage – Weekends



In Round 1, the weekend morning peak on Pittman Wash Trail showed the highest usage levels for the day.

Appendix A

Asphalt Trail Marking



Concrete Trail Marking

Natural Surface Trail Marker

Way-finding Signage