

# Quarry County Park Off-Leash Dog Recreation Pilot Program Findings

SAN MATEO COUNTY PARKS DEPARTMENT  
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## **Introduction**

This report documents the findings of the Off-Leash Dog Recreation Pilot Program (“pilot program”) at Quarry County Park. Following a robust, multi-year process that involved stakeholder input and public engagement, policy and ordinance revisions, environmental review, and permitting, the pilot program was approved by the Board of Supervisors in November 2021, and implemented in April 2022 (after a Coastal Development Permit was issued). The pilot program was active for 12-months during which a detailed monitoring program was conducted.

A key component of the pilot program was the implementation of an Adaptive Management Plan (“AMP”), which was created to monitor compliance with pilot program requirements and manage potential effects of off-leash dog recreation in the park. Data was collected from the park throughout the duration of the pilot program and analyzed in 2-month monitoring periods. For each 2-month monitoring period, decisions on additional management actions were made based on observations made. The AMP indicators included:

1. Presence of dog waste
2. Harassment of wildlife
3. Dog entry into sensitive areas
4. Dogs traveling off trail
5. Leash compliance for on-leash trails
6. Interactions between other visitors and dogs
7. Changes in park visitation in response to visitors with off-leash dogs
8. Fecal coliform levels

## **Background**

Over the past 15 years, the County of San Mateo has purchased several properties for the purpose of public recreation and conservation; some of these lands have historically provided opportunities for dog recreation. With this and in consideration of the increase in dog ownership throughout the County, the topic of authorized dog recreation in County parks has been of importance for park visitors. Starting in 2016, a Dog Management Committee (Committee) was formed, and was tasked with advising the Parks Commission on the development of new dog management policies for the San Mateo County Parks Department (Department). The Department also implemented an extensive communication and community engagement process to support the Committee’s work and gather further public input. This effort led to the legalization of on-leash dog recreation on trails designated as appropriate by the Department in 2018.

At the October 23, 2018 Board of Supervisors meeting, the Board directed the Department to prepare a recommendation for an off-leash dog recreation pilot program. To assist in this process, the Department created the San Mateo County Parks Dog Work Group (Work Group), which was comprised of two Parks Commissioners, three park rangers, members of the Midcoast Community Council and Pescadero Municipal

Advisory Council, and representatives from the dog owner, conservationist, equestrian, and mountain bike communities. After the Work Group held monthly public meetings for one year and received extensive public feedback, it presented a series of recommendations to the Department regarding an off-leash dog recreation pilot program structure. Using these recommendations as a guide, the Department developed its own recommendation for an off-leash dog recreation pilot program at Quarry County Park and Pillar Point Bluff County Park for the Board's consideration.

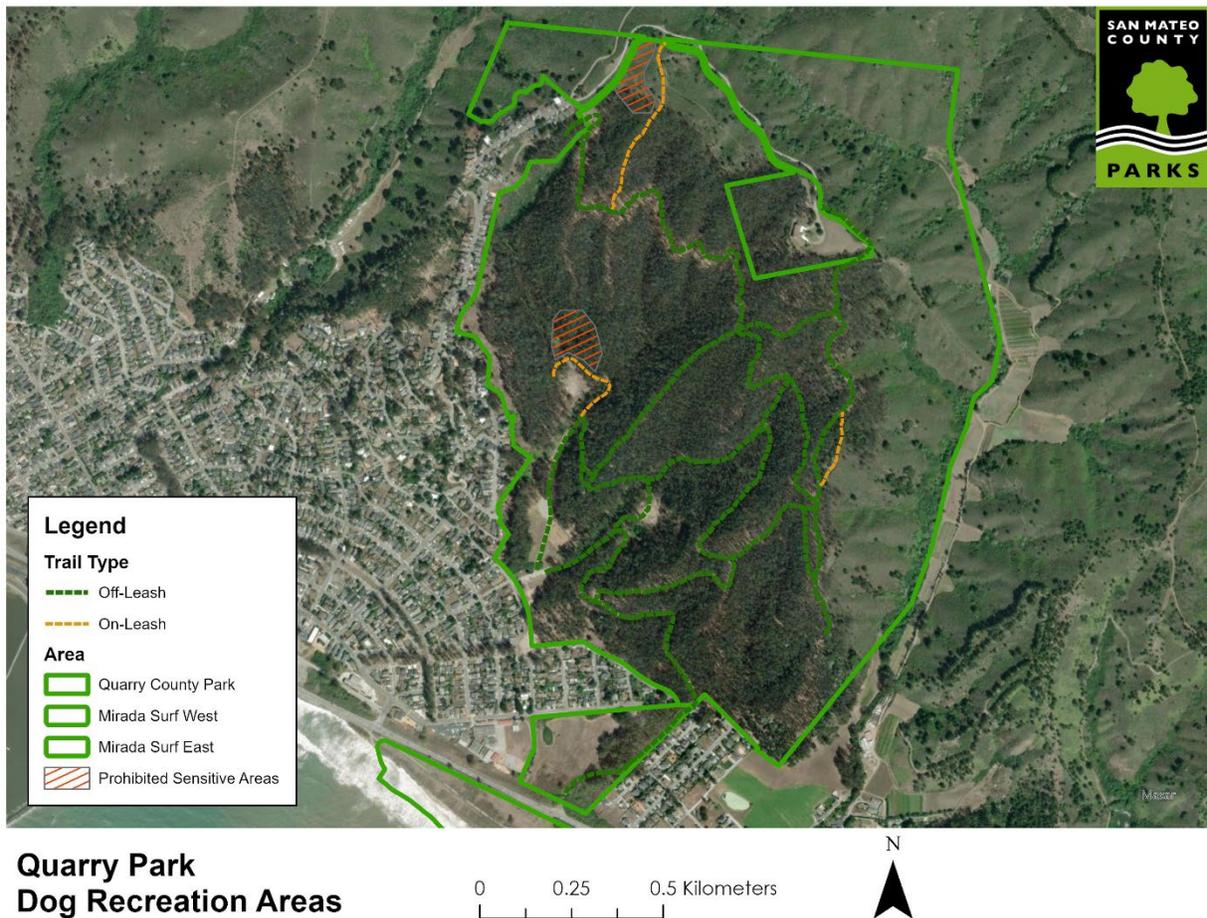
At the November 9, 2021 meeting of the Board of Supervisors, the Board certified the off-leash dog recreation pilot program's Initial Study/Mitigated Negative Declaration ("IS/MND") and authorized the Department to commence the recommended pilot program (pending a Coastal Development Permit). Because the County's Ordinance Code prohibited off-leash dog recreation in County parks, on November 16, 2021, the Board amended Section 3.68.180 of the Ordinance Code to authorize off-leash dog recreation on County park trails that were designated by the Department as appropriate for such use. The amended ordinance also established specific requirements that governed the new activity. The new ordinance pertaining to dog recreation can be found here:

[https://library.municode.com/ca/san\\_mateo\\_county/codes/code\\_of\\_ordinances?nodeId=TIT3PUSAMOWE\\_CH3.68COPAREARRU\\_3.68.180DO](https://library.municode.com/ca/san_mateo_county/codes/code_of_ordinances?nodeId=TIT3PUSAMOWE_CH3.68COPAREARRU_3.68.180DO)

At its April 5, 2022 meeting, the Board of Supervisors issued a Coastal Development Permit for the pilot program at Quarry County Park. It was determined that due to sensitive natural resources present, Pillar Point Bluff would be removed from consideration for the pilot program and would continue to support on-leash dog recreation only.

Quarry Park is both a community park and regional park situated in a coast facing hillside populated largely by a eucalyptus forest. It contains a multitude of recreational uses, such as hiking trails, a pump track, playground and picnic areas, and a community garden. Its environmentally sensitive habitat areas include central coast arroyo willow riparian scrub, perennial ponds, ephemeral streams, intermittent streams, perennial streams, and potential seasonal wetlands.

Map 1. Quarry Park Dog Recreation Areas



## Methods

Monitoring data was collected using two distinct methods. For indicators 1 - 6, visual observations were made and then mapped using a GPS collector device. Observation sessions were standardized using approximately four hour long segments, with visits occurring twice a week. Factors used in determining when to visit included day of week (weekday vs. weekend) and time of day (morning vs. afternoon). Table A1 in the appendix depicts the distribution of these factors throughout all visits to the park, as well as how many visits were made.

This data was later used to create cumulative maps of the observations for the data to be visualized spatially. For indicator 1—presence of dog waste—special attention was given to ensure that data was collected correctly, including knowing the difference between dog waste and that of other animals in the area like foxes, coyotes, or weasels. Duplicate observations were avoided by referencing prior observation points and thorough identification.

For indicator 7 – changes in park visitation in response to visitors with off-leash dogs – observations of the different visitor demographics (i.e. visitors without dogs, visitors with off-leash dogs, and visitors with on-leash dogs) were recorded. These numbers were then used to calculate percentages and further analyze the distributions and changes of these demographics; this data is depicted later Section III (Visitor Demographics) below.

Baseline monitoring data was collected from July 2021 to April 2022 using these methods. The pilot program monitoring occurred between May 2022 and April 2023, for 12-months. The baseline data proved a method of comparison for the pilot program, and to inform the standards for some of the indicators.

For indicator 8, San Mateo Resource Conservation District staff attempted to sample distinct stormwater drainages at Quarry Park. Due to historic drought conditions and low flow in water channels, quality samples were unable to be collected and tested.

## **Results**

### **Overview of Monitoring Results**

Table 1 summarizes the observation data collected for AMP indicators for the off-leash dog recreation pilot program during the baseline monitoring period, 10 months preceding the pilot program. Table 2 summarizes the observation data collected during the 12-month pilot program. Please note, the fecal coliform levels and changes in park visitation are not included in this table as they were measured using different methods.

Table 1. Overall Baseline Dog Monitoring Results, as measured from July 2021 to April 2022

	July – October 2021	October – December 2021	January – February 2022	March – April 2022
Presence of dog waste	41.75 per month	15.66 per month	14.5 per month	25 per month
Harassment of wildlife	0 instances	0 instances	0 instances	0 instances
Dog entry to sensitive areas	0 instances	1 instance	0 instances	0 instances
Dogs traveling off-trail	1 instance	1 instance	1 instance	0 instances
Leash compliance for on-leash trails	5 off leash	80% leash compliance	83.3% leash compliance	71.4% leash compliance
Interactions with dogs and visitors	0 instances	3 instances	0 instances	1 instance

Table 2. Overall Dog Monitoring Results for the Pilot Program at Quarry Park, as measured from May 2022 through April 2023.

	Standards	May and June 2022	July and August 2022	September and October 2022	November and December 2022	January and February 2023	March and April 2023	Average
Presence of dog waste	No more than 20 occurrences in one month	26 instances per month	8 instances per month	58 instances per month	N/A <sup>1</sup>	14 instances per month	18 instances per month	25.2 instances per month
Harassment of wildlife	Dogs observed chasing or harassing wildlife two times over a 60-day period	0 instances	0 instances	0 instances	0 instances	0 instances	0 instances	0 instances per period
Dog entry to sensitive areas	No dogs observed entering Parks defined and signed sensitive areas	0 instances	0 instances	0 instances	0 instances	0 instances	0 instances	0 instances per period
Dogs traveling off-trail	Dogs observed traveling at 10 feet or more off trail	3 instances	2 instances	2 instances	1 instance	0 instances	1 instance	1.5 instances per period
Leash compliance for on-leash trails	70% of parties with dogs will have their dogs on a leash when using an on-leash trail	75% leash compliance	72.2% leash compliance	100% leash compliance	50% leash compliance	100% leash compliance	100% leash compliance	82.9% leash compliance
Interactions with dogs and visitors	Any dog is observed exhibiting unwelcome behavior(s) to other dogs or visitors 10 times per month	0 instances	1 instance	0 instances	1 instance	0 instances	0 instances	0.33 instances per period

<sup>1</sup> The spatial data for waste counts was lost for November and December 2022

## Presence of Dog Waste

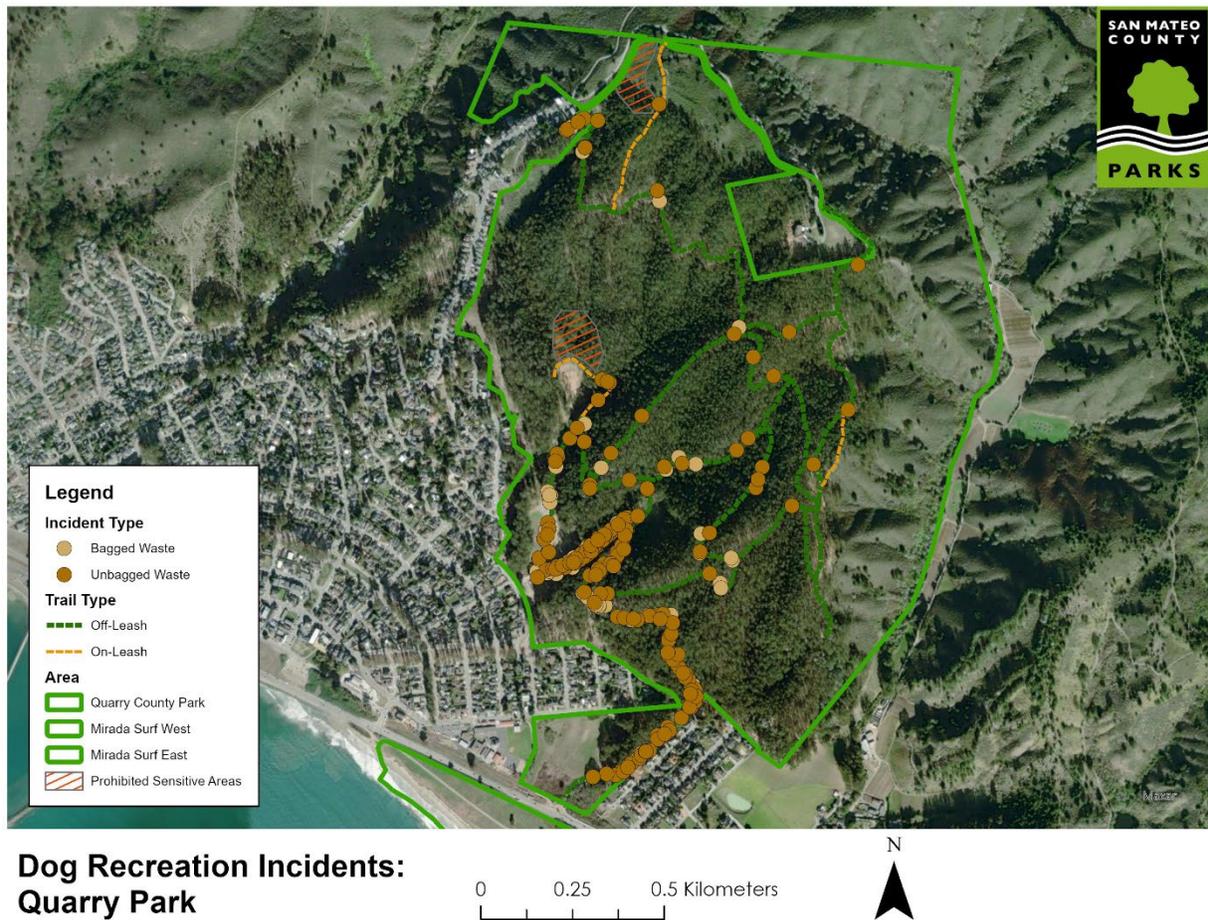
Observations of uncollected dog waste exceeding the indicator standard (no more than 20 pieces of dog waste per month) occurred twice during the pilot program—during the May to June 2022 monitoring period and September to October 2022 monitoring period. As a result of the standard not being met for these two monitoring periods, the Department implemented additional management strategies to improve compliance. These efforts are discussed further in the Adaptive Management Actions section below. While the standard for uncollected dog waste was set at 20 pieces of dog waste observed per month, on average, dog waste observations averaged 25.2 pieces of waste per month. When comparing the pilot program monitoring data to the baseline monitoring data (see appendix Table A2), dog waste observations decreased slightly during the pilot. The number of dog waste observations made during the baseline monitoring period, prior to the start of the pilot program, was on average 29.3 pieces observed per month.

Table 3. Presence of Dog Waste Monitoring Results for the Pilot Program, measured from May 2022 through April 2023

	Standards	May - June 2022	July - August 2022	September - October 2022	November-December 2022	January-February 2023	March - April 2023	Average
Presence of dog waste	No more than 20 occurrences in one month	26 per month	8 per month	58 per month	N/A <sup>2</sup>	14 per month	18 per month	25.2 per month

<sup>2</sup> The spatial data for waste counts was lost for November and December 2022

Map 2. Dog Waste at Quarry Park, as measured from May 2022 through April 2023.



### Fecal Coliform Levels

During the winter of 2022 and 2023, San Mateo Resource Conservation District staff attempted to sample distinct stormwater drainages at Quarry Park. Drainages were intermittently flowing and often with insufficient flow for reliable water quality sampling. RCD staff did collect samples from a stagnant pool which did contain dog MST markers and *E. coli* concentrations above the water quality standard of 320 MPN/100 mL. However, stagnant pools are not representative of the parks potential impact on water quality downstream. Since it is unknown how long stagnant water has been standing at a given location, there may be higher concentrations of bacteria present that would be present than by sampling flowing water. Quarry Park has hydrologic constraints where there were few locations where flowing water could be reliably located throughout the year to conduct sufficient sampling for this indicator.



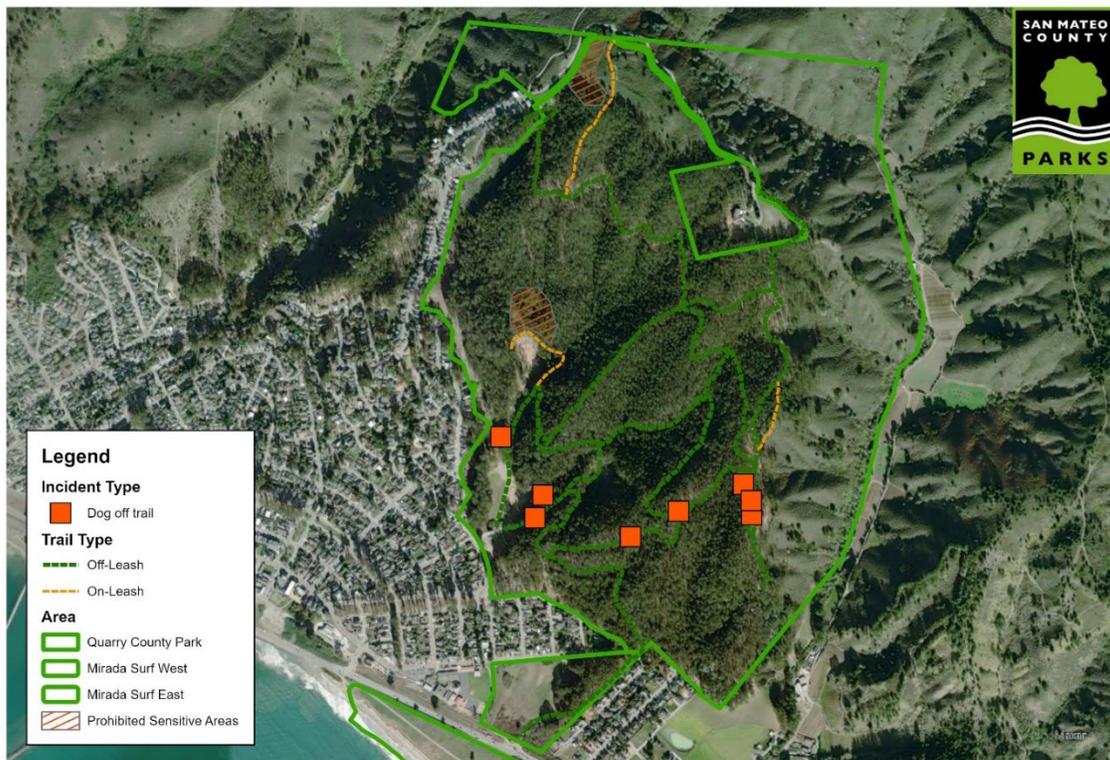
## Dogs Traveling Off Trail

Dogs were observed off trail approximately 1.5 instances per 60-day monitoring period. For the purpose of park management and enforcement of rules, the low number of dogs observed off trail during the pilot program is an indication that overall compliance with this indicator is high. See appendix Table A5 Dogs Traveling Off Trail Results for the baseline monitoring period.

Table 6. Dogs Traveling Off Trail Results for the Pilot Program, measured from May 2022 through April 2023

	Standards	May and June 2022	July and August 2022	September and October 2022	November and December 2022	January and February 2023	March and April 2023	Average
Dogs traveling off trail	Dogs observed traveling at 10 feet or more off trail	3 instances	2 instances	2 instances	1 instance	0 instances	1 instance	1.5 instances per period

Map 3. Dogs Off-trail at Quarry Park, as measured from May 2022 through April 2023.



**Dog Recreation Incidents:  
Quarry Park**

0 0.25 0.5 Kilometers



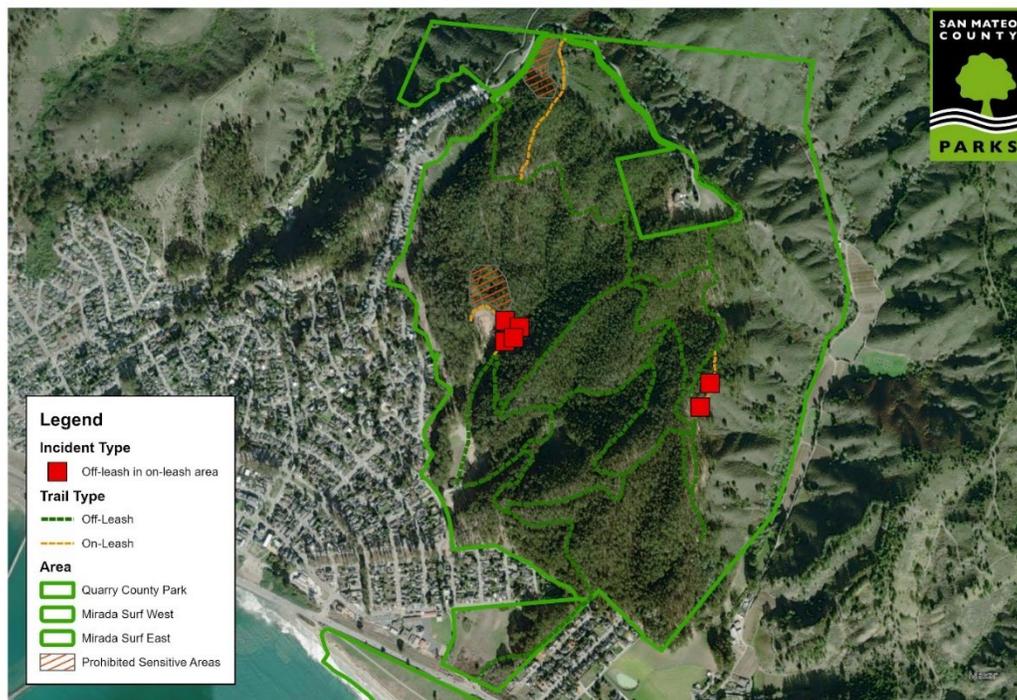
## Leash Compliance for On-leash Trails

The leash compliance standard was largely met during the pilot program; while on trails designated and signed as on-leash only, on average, 83% of dogs observed were on leash. Leash compliance did not meet the 70% standard during one monitoring period, during the months of November and December 2022. See appendix Table A6 Leash Compliance for On-leash Trails Results for the Baseline monitoring period.

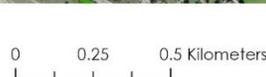
Table 7. Leash Compliance for On-leash Trails Results for the Pilot Program, measured from May 2022 through April 2023

	Standards	May and June 2022	July and August 2022	September and October 2022	November and December 2022	January and February 2023	March and April 2023	Average
Leash compliance for on-leash trails	70% of parties with dogs will have their dogs on a leash when using an on-leash trail	75%	72.2%	100%	50%	100%	100%	82.9% leash compliance

Map 4. Dogs Off-leash in On-leash Areas at Quarry Park, as measured from May 2022 through April 2023.



**Dog Recreation Incidents:  
Quarry Park**



## Interactions Between Other Visitors and Dogs

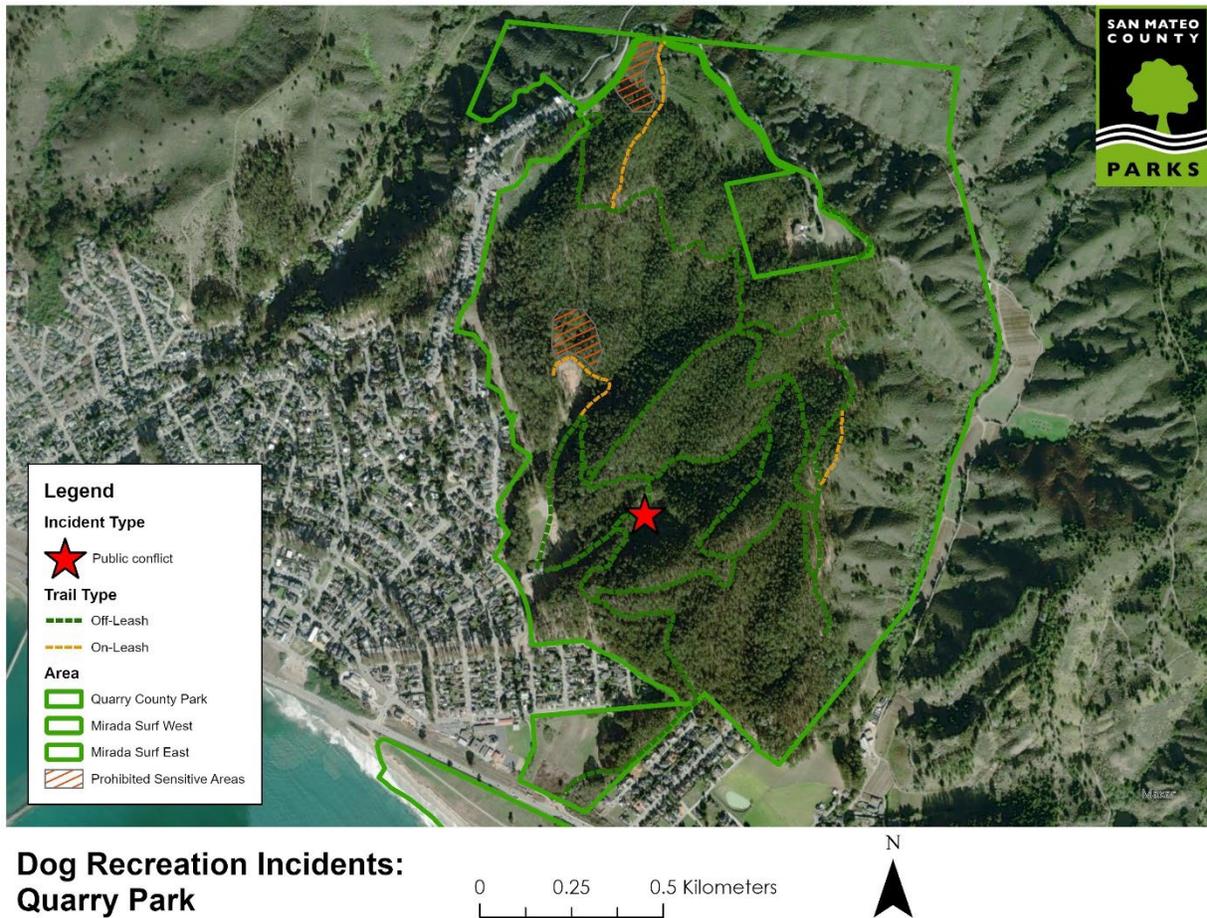
Instances of dogs or dog owners having a negative interaction with other visitors or other dogs were only observed twice over the course of the 12-month pilot program, once in the July and August 2022 monitoring period and once in the November and December 2022 monitoring period. Compared with the baseline data, average public conflicts involving dogs decreased from an average of 1 public conflict per 60-day monitoring period to an average of 0.33 conflicts per 60-day monitoring period.

See appendix Table A7 Interactions Between Other Visitors and Dogs Results for the baseline monitoring period.

Table 8. Interactions Between Other visitors and Dogs Results for the Pilot Program, measured from May 2022 through April 2023

	Standards	May and June 2022	July and August 2022	September and October 2022	November and December 2022	January and February 2023	March and April 2023	Average
Interactions with dogs and visitors	Any dog is observed exhibiting unwelcome behavior(s) to other dogs or visitors 10 times per month	0	1	0	1	0	0	0.33

Map 5. Public Conflicts at Quarry Park, as measured from May 2022 through April 2023<sup>3</sup>.



### Visitor Demographics

During the development of the pilot program, it was expressed that by authorizing off-leash dog recreation at Quarry Park, those without dogs would be discouraged from visiting the park. Baseline data (see appendix Table A8-9) indicates that before commencement of the pilot program, 56.4% of observed visitors to Quarry Park recreated without dogs while 43.6% of visitors to Quarry Park recreated with dogs. Throughout the course of the pilot program (see appendix Table A10-11), on average, 66.1% of observed visitors did not have dogs while 33.9% were recreating with dogs. These figures indicate that authorizing off-leash dog recreation at Quarry Park did not discourage people without dogs from visiting the park. Moreover, the pilot program showed that at Quarry Park, the various uses (i.e. dog recreation, mountain bike riding, pump track, playground, and equestrian) can be balanced in the right environment and setting.

<sup>3</sup> Only one of the spatial data points for public conflicts is shown because of spatial data was lost for November and December 2022

Chart 1. Visitor Demographics With and Without Dogs Baseline and Pilot Data.

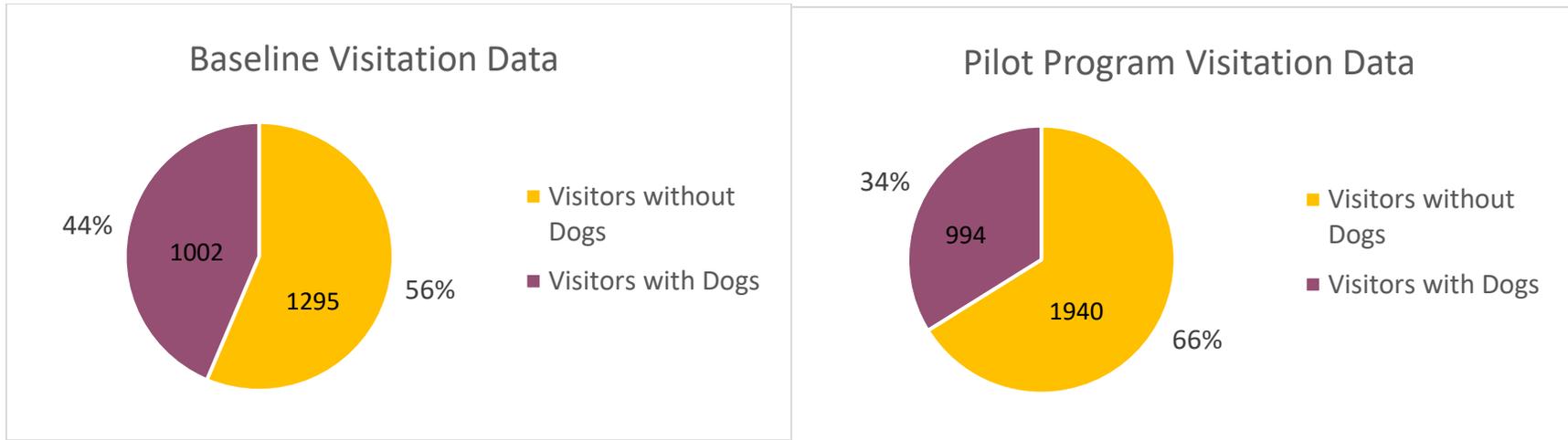
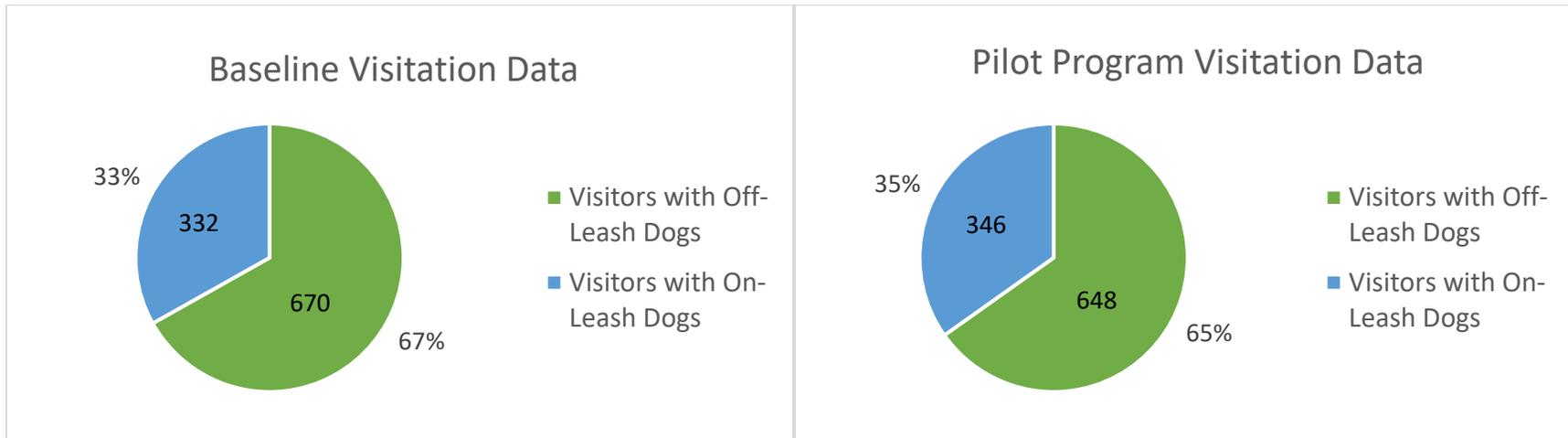


Chart 2. Visitor Demographics with On-leash vs Off-leash Dogs Baseline and Pilot Data.



Over the course of the pilot program, the percentage of visitors recreating with dogs off-leash and on-leash stayed relatively consistent with 65.3% of visitors with dogs choosing to walk their dogs off-leash and 34.7% preferring to keep their dogs on leash.

## **Adaptive Management Actions**

During the pilot program, an adaptive management plan was used so the Department could adjust its management strategies to increase compliance and mitigate adverse effects. Adaptive management strategies included pilot program notification signs and the addition of dog waste stations at key locations in the park as well as information included in the dog monitoring reports available online. The Department installed two additional dog waste stations at Mirada Surf East when dog waste was outside of compliance with the standard and posted the following sign.

# Quarry Park Off-Leash Dog Pilot is Underway!

San Mateo County Parks is conducting a one-year pilot program to explore allowing dogs and their owners to enjoy off-leash use of most trails in Quarry Park.

## **Not Disposing of Dog Waste Can Impact Off-Leash Pilot Success**

For two consecutive monitoring periods the amount of dog waste left on trails has exceeded the pilot standard. For the pilot to succeed and for off-leash recreation to continue, dog waste must be picked up, bagged, and disposed of in a trash can.

Also remember:

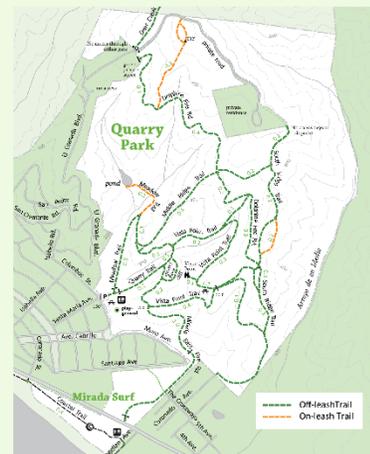
- Keep dogs on trails and out of sensitive habitat.
- No more than three dogs per person (with a leash for each dog) and no more than two off leash.
- Keep dog(s) within 25' and under voice/sight control.

Let's all work together to keep off-leash dog recreation in the park!



**Learn more about the Pilot Program**  
<https://www.smcgov.org/parks/leash-dog-pilot-program-quarry-park>

## **Leash Your Dog in Designated Areas**



Look for signs:



Off-leash dogs OK



Dogs on leash OK



No dogs

Included in the online dog monitoring reports for each period was the flow chart below explaining the adaptive management plan employed by the Department.

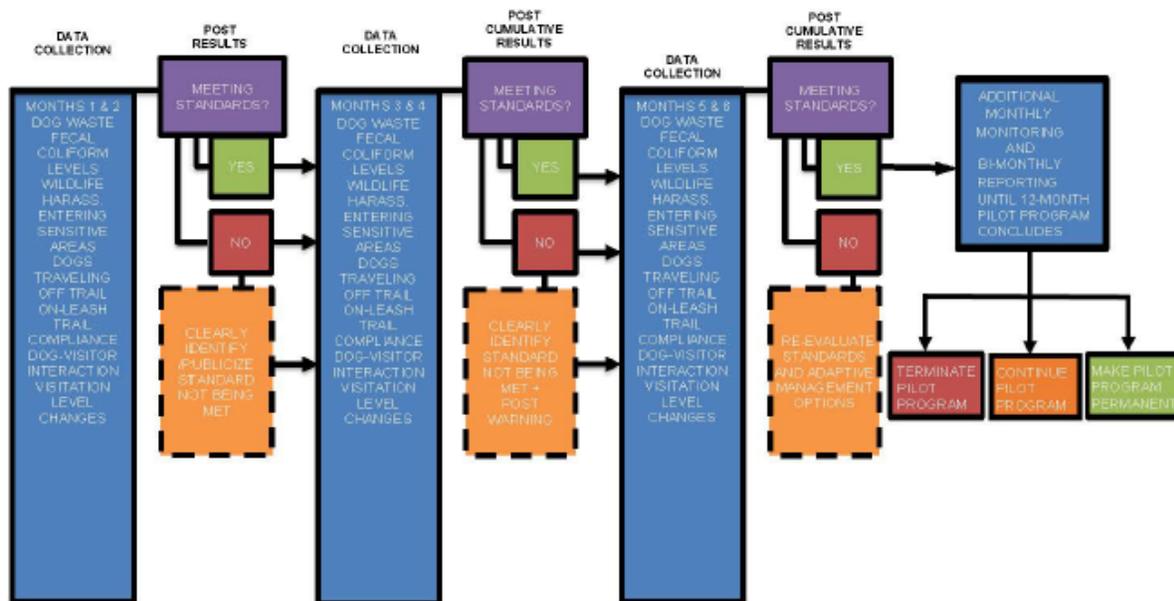


Figure 4. Adaptive Management Decision Flow Chart

## Summary of Findings

The 12-month pilot program was an opportunity for the Department to observe demand for off-leash dog recreation experiences in County parks as well as compliance with off-leash dog recreation rules and regulations. It also allowed the Department to understand the potential environmental impacts that off-leash dog recreation may have at the park. Pursuant to the CEQA environmental review and resulting Initial Study/Mitigated Negative Declaration, it was determined that possible environmental impacts that may occur during the pilot could be mitigated through the implementation of the pilot program’s AMP.

Bi-monthly monitoring reports were published on the Department’s website throughout the duration of the pilot program. This report summarizes all of the monitoring data collected throughout the 12-month pilot program, as well as for the 10-month baseline monitoring period immediately preceding the pilot to provide a means of comparison.

Aside from two monitoring periods where uncollected dog waste was observed above the AMP indicator standard of no more than 20 pieces of waste per month set forth in the AMP, and one monitoring period where leash compliance for on-leash trails was below the 70% compliance standard, the monitoring observations showed high levels of user compliance.

Prior to approval of the pilot program, the Department heard concerns that introducing off-leash dog recreation at Quarry Park would make the park less desirable for hikers, mountain bikers, and equestrians. With the opening of the pump track in July of 2022, this created an additional draw to the park for mountain bikers. This, along with the observations that on average, two-thirds of park visitors still prefer to visit the park without a dog, indicates to the Department that there is no conflict between off-leash dog recreation and desire for other uses of the park.

Additionally, the Department heard concerns that conflicts between dog and other park users, dogs and other dogs, or dogs and wildlife would be difficult to manage. Observations made during the pilot program indicate that these instances of conflict were very low to non-existent. Compliance with rules and regulations, including keeping dogs on-leash in specified areas, keeping dogs from travelling off trail, and keeping dogs out of sensitive habitat areas were also complied with well throughout the pilot program.

Given the findings detailed in this report, and understanding that residents of this County desire a place to hike with their dogs off-leash, the Department will pursue all necessary approvals to make off-leash dog recreation at Quarry County Park a permissible use pursuant to the requirements of Section 3.68.180 of the San Mateo County Ordinance Code. Please note, should park users fail to comply with the County Ordinance Code, the Department reserves the right to restrict or prohibit off-leash dog recreation at Quarry Park.

## Appendix A

Table A1. Quarry Park Monitoring

<b>Baseline</b>			
July-October 2021	Tuesday – Thursday	Friday – Saturday	Total
Morning	4 days	4 days	8 days
Afternoon	4 days	3 days	7 days
Total	8 days	7 days	15 days (64.5 hours)
October- December 2021	Tuesday – Thursday	Friday – Saturday	Total
Morning	4 days	3 days	7 days
Afternoon	5 days	4 days	9 days
Total	9 days	7 days	16 days (50 hours)
January- February 2022	Tuesday – Thursday	Friday – Saturday	Total
Morning	4 days	3 days	7 days
Afternoon	4 days	4 days	8 days
Total	8 days	7 days	15 days (45 hours)
March-April 2022	Tuesday – Thursday	Friday – Saturday	Total
Morning	4 days	5 days	9 days
Afternoon	5 days	3 days	8 days
Total	9 days	8 days	17 days (51 hours)
<b>PILOT PROGRAM BEGINS</b>			
May-June 2022	Tuesday – Thursday	Friday – Saturday	Total
Morning	4 days	3 days	7 days
Afternoon	4 days	3 days	7 days
Total	8 days	6 days	14 days (42 hours)
July-August 2022	Tuesday – Thursday	Friday – Saturday	Total
Morning	2 days	3 days	5 days
Afternoon	4 days	3 days	7 days
Total	6 days	6 days	12 days (36 hours)

September – October 2022	Monday – Thursday	Friday – Sunday	Total
Morning	4 days	5 days	9 days
Afternoon	5 days	4 days	9 days
Total	9 days	9 days	18 days (54 hours)
November – December 2022	Monday – Thursday	Friday – Sunday	Total
Morning	4 days	4 days	8 days
Afternoon	3 days	2 days	5 days
Total	7 days	6 days	13 days (39 hours)
January – February 2023	Monday – Thursday	Friday – Sunday	Total
Morning	3 days	3 days	6 days
Afternoon	3 days	3 days	6 days
Total	6 days	6 days	12 days (36 hours)
March – April 2023	Monday – Thursday	Friday – Sunday	Total
Morning	2 days	4 days	6 days
Afternoon	5 days	1 days	6 days
Total	7 days	5 days	12 days (36 hours)
GRAND TOTAL			144 days (453.5 hours)

Table A2. Presence of Dog Waste Monitoring Results for the baseline monitoring period, measured from July 2021 through April 2022

	July – October 2021	October – December 2021	January – February 2022	March – April 2022
Presence of dog waste	41.75 per month	15.66 per month	14.5 per month	25 per month

Table A3. Harassment of Wildlife Results for the baseline monitoring period, measured from July 2021 through April 2022

	July – October 2021	October – December 2021	January – February 2022	March – April 2022
Harassment of wildlife	0 instances	0 instances	0 instances	0 instances

Table A4. Dog Entry into Sensitive Areas Results for the baseline monitoring period, measured from July 2021 through April 2022

	July – October 2021	October – December 2021	January – February 2022	March – April 2022
Dog entry to sensitive areas	0 instances	1 instance	0 instances	0 instances

Table A5. Dogs Traveling Off Trail Results for the baseline monitoring period, measured from July 2021 through April 2022

	July – October 2021	October – December 2021	January – February 2022	March – April 2022
Dogs traveling off trail	1 instance	1 instance	1 instance	0 instances

Table A6. Leash Compliance for On-leash Trails Results for the baseline monitoring period, measured from July 2021 through April 2022

	July – October 2021	October – December 2021	January – February 2022	March – April 2022
Leash compliance for on-leash trails	5 off leash	80% leash compliance	83.3% leash compliance	71.4% leash compliance

Table A7. Interactions Between Other Visitors and Dogs Results for the baseline monitoring period, measured from July 2021 through April 2022

	July – October 2021	October – December 2021	January – February 2022	March – April 2022
Interactions with dogs and visitors	0 instances	3 instances	0 instances	1 instance

Table A8. Visitor Demographics at Quarry Park during baseline, as measured from July 2021 through April 2022

	July – October 2021	October – December 2021	January – February 2022	March – April 2022
Visitors without dogs	338	306	334	317
Visitors with dogs	251	240	227	284
Total visitors overall	589	546	561	601

	July – October 2021	October – December 2021	January – February 2022	March – April 2022
Visitors without dogs	57.4%	56%	59.5%	52.7%
Visitors with dogs	42.6%	44%	40.5%	47.3%

Table A9. Demographics of Visitors with Dogs at Quarry Park during baseline, as measured from July 2021 through April 2022

	July – October 2021	October – December 2021	January – February 2022	March – April 2022
Visitors with off-leash dogs	166	163	153	188
Visitors with on-leash dogs	85	77	74	96
Total visitors with dogs	251	240	227	284

	July – October 2021	October – December 2021	January – February 2022	March – April 2022
Visitors with off-leash dogs	66.1%	67.9%	67.4%	66.2%
Visitors with on-leash dogs	33.9%	32.1%	32.6%	33.8%

Table A10. Visitor Demographics at Quarry Park, as measured from May 2022 to April 2023.

	May and June 2022	July and August 2022	September and October 2022	November and December 2022	January and February 2023	March and April 2023	Average
Visitors without dogs	293	236	514	419	202	276	323.33
Visitors with dogs	216	156	191	169	143	119	165.66
Total visitors overall	509	392	705	588	345	395	489

	May and June 2022	July and August 2022	September and October 2022	November and December 2022	January and February 2023	March and April 2023	Average
Visitors without dogs	57.6%	60.2%	73%	71.3%	59%	70%	65.2%
Visitors with dogs	42.4%	39.8%	27%	28.7%	41%	30%	34.8%

Table A11. Demographics of Visitors with Dogs at Quarry Park, as measured from May 2022 to April 2023.

	May and June 2022	July and August 2022	September and October 2022	November and December 2022	January and February 2023	March and April 2023	Average
Visitors with off-leash dogs	132	106	123	113	103	71	108
Visitors with on-leash dogs	84	50	68	56	40	48	57.66
Total visitors with dogs	216	156	191	169	143	119	165.66

	May and June 2022	July and August 2022	September and October 2022	November and December 2022	January and February 2023	March and April 2023	Average
Visitors with off-leash dogs	61.1%	67.9%	64%	66.9%	72%	60%	65.32%
Visitors with on-leash dogs	38.9%	32.1%	36%	33.1%	28%	40%	34.68%