



ECONOMIC ANALYSIS OF THE
PROPOSED RULE FOR DOG
MANAGEMENT IN THE GOLDEN GATE
NATIONAL RECREATION AREA

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SUMMARY OF ANALYSIS

BACKGROUND AND PURPOSE OF PROPOSED RULE

The National Park Service (NPS) manages the Golden Gate National Recreation Area (GGNRA or park) as a unit of the National Park System. Units of the National Park System are managed under the statutes commonly known as the National Park Service Organic Act of 1916, the General Authorities Act of 1970, and the Redwood Amendments of 1978 which amended the General Authorities Act (codified at 54 U.S.C. 100101 *et. seq.*). As explained in NPS Management Policies 2006, these interrelated authorities express the fundamental purpose of the National Park System which is to conserve park resources and values and to provide for visitor enjoyment of these resources and values. The mandate to protect park resources and values is complemented by a statutory prohibition on the impairment of park resources and values. To avoid impairment, park managers are directed to seek ways to avoid and minimize adverse impacts on park resources and values to the greatest extent practicable. Where there are conflicts between conserving resources and values and providing for enjoyment of them, conservation is to be the predominant goal. To aid in the regulation of visitor activities within units of the National Park System, 54 U.S.C. 100751(a) authorizes the Secretary of the Interior, acting through the NPS, to “prescribe such regulations as the Secretary considers necessary or proper for the use and management of System units.” The National Park Service proposes to amend its special regulations for Golden Gate National Recreation Area regarding dog walking. The rule would apply to 22 locations within the park and would designate areas within these locations for on-leash and regulated (i.e., voice and sight control) off-leash dog walking. Areas in these 22 locations that are not designated as open to dogs would be closed to dogs, except for service animals in accordance with National Park Service regulations. The rule would modify and, in some circumstances, relax the National Park System-wide pet regulations for these 22 locations. To the extent not modified by this rule, dog walking in all NPS-managed areas within the park would continue to be regulated under National Park System-wide pet regulations.

PURPOSE OF ANALYSIS

NPS is proposing to issue a rule that would amend the special regulations for GGNRA to designate areas within the park that would be open to on-leash and voice and sight control dog walking. Key elements of the proposed rule include:

- Defines areas for on-leash dog walking in GGNRA.
- Defines areas for voice and sight control dog walking in GGNRA.
- Requires an annual non-transferable NPS special use permit to walk more than 3 dogs in GGNRA; no more than 6 dogs may be walked by any one person.
- Requires dog walkers walking between 4 and 6 dogs to do so only in designated areas within the assigned site(s), and that such activities be conducted Monday through Friday between 8AM and 5PM.

This report presents a cost-benefit analysis of the proposed rule and its alternatives consistent with Executive Order (E.O.) 12866, “Regulatory Planning and Review.” It also presents an analysis of the potential impacts on small entities, as required by the Regulatory Flexibility Act (RFA), as amended by the 1996 Small Business Regulatory Enforcement Fairness Act (SBREFA) (5 U.S.C. 601 *et seq.*). Below is a summary of the findings of each analysis.

COST AND BENEFITS OF THE PROPOSED RULE

This analysis follows Office of Management and Budget (OMB) guidance to estimate and present costs and benefits of the proposed rule and alternatives, which are measured as changes in producer and consumer surplus. Impacts are analyzed for the study area over a 20-year study period (2016 through 2035).

While the proposed rule would restrict the areas available for off-leash as well as on-leash dog walking to designated areas, it would not prohibit dog walking in the park. The proposed rule also restricts the number of dogs per walker to six, which is both a regional park and typical county norm where the number of dogs walked has been regulated. This limit is, however, higher than is typical for private dog walkers who characteristically walk either one or two dogs at a time. Therefore, the impacts of the rule are anticipated to include benefits to private (as well as commercial) dog walkers in the form of an improved experience with reduced congestion and dog interactions in some areas with smaller groups of dogs rather than much larger groups of dogs.

However, restrictions on use and limits to the number of dogs are anticipated to reduce profitability for commercial dog walkers who typically walk large groups of dogs (i.e. more than 8 dogs at one time), increase costs of permits for those walking more than four dogs at one time, and reduce trip convenience for some private dog walkers, especially in adjacent neighborhoods where off-leash dog walking is already limited. Regardless, even making conservative assumptions (i.e., more likely to overstate than understate potential impacts) about the potential impacts of the rule, this analysis concludes that the proposed rule is not a major rule in terms of economic costs.

Commercial dog walkers. Data on the number and operations of commercial dog walkers operating at GGNRA is limited. The GGNRA interim permit program provides some data on commercial dog walkers. This program is temporary, in place only until a final rule is adopted. While some data was acquired through the interim permit program on the number and characteristics of commercial dog walkers operating at GGNRA, this analysis uses a baseline prior to this temporary program. The commercial dog walkers most affected by the rule include walkers that had been walking more than six dogs per trip to GGNRA prior to the interim permit program, as well as those who offer weekend boarding services including walks in the GGNRA. Effects of the proposed rule are not expected to be uniform across dog walking operations, and would depend on the specifics of the individual operations, including the number of dogs walked per trip, services offered (e.g., weekend boarding), specific park units currently frequented, and the availability of substitute locations. The proposed rule is anticipated to require commercial dog walkers who currently walk more than six dogs per trip to forgo the revenues associated with these trips, travel to alternative dog walking locations, incur higher costs, or raise prices.

Across the 268 affected commercial dog walking operations (i.e., commercial dog walkers walking four or more dogs at one time), the greatest annual revenue impacts are anticipated to be incurred by those who currently walk greater than six dogs at one time. Impacts to commercial dog walkers are conservatively anticipated to range from approximately \$366 per dog walker (128 dog walkers, costs of permits only) to \$77,200 (one dog walker, assuming no price increases). Over 90 percent of costs will be incurred by dog walkers who typically walk more than six dogs at a time. An upper bound of total annualized industry-wide revenue losses, is estimated to range from \$1.5 to \$3.8 million (using a 7 or 3 percent discount rate). Some or most of these costs may be absorbed by industry adjustments to behavior.

Specifically:

- We estimate that 48 percent of commercial dog walkers (approximately 128 commercial dog walkers) are unlikely to be required to change the number of dogs they typically walk due to the rule because they typically walk six dogs or less per walk. These dog walkers would be anticipated to incur minor costs due to the rule related to permitting of approximately \$366 per dog walker. Permitting cost of approximately \$0.1 million would be incurred across all commercial dog walkers walking more than three dogs.
- The remaining 52 percent of affected commercial dog walkers currently operating at GGNRA (approximately 140 commercial dog walkers) typically walk more than six dogs per walk. We assume that these commercial dog walkers will either lose revenues or need to make adjustments to their operations (pricing, number of

walks, location of walks, number of dog walkers, etc.) in response to the proposed rule. If these commercial dog walkers, walking large numbers of dogs above the regional norm, forgo revenues and associated profits for the dogs they can no longer walk, annual revenue losses could be as high as \$3.7 million across all 140 commercial dog walkers currently walking more than six dogs. Because this estimate assumes no active adjustment to current operations to maintain revenues, it likely overstates the costs of the proposed rule to these operations. We note reporting potential revenues changes further overstates the costs of the proposed rule because these losses are not net of the costs of providing the commercial dog walking services; however, data on average profits for commercial dog walking businesses in the study area are not available.

- We also considered whether, rather than forgo revenues or change other aspects of their businesses, these commercial dog walkers could recoup their lost revenues by increasing prices. We found that the required price increase to offset revenue losses due to the six dog limit may be feasible for some commercial operations. Such price increases are estimated to range from \$3 per walk for operations walking seven dogs up to \$27 per walk for operations that walk 14 dogs at one time (an increase of 17 to 133 percent respectively). For those operations currently walking seven to eight dogs per trip (approximately 73 dog walkers), prices would need to increase by \$3.33 to \$6.67 per dog per walk, respectively, in order to offset the revenue losses associated with the six dog limit. These increases appear to be feasible, as they would be comparable to recent increases observed by consumers in the GGNRA following implementation of the interim permit program. Other increases, such that required for the single operation that currently walks 14 dogs per trip, which would need to raise prices by 133 percent to offset losses, appear less feasible in the current market. If dog walkers increase prices up to a maximum of \$6.67 the upper bound estimate of the total revenue losses to the industry would be \$1.4 million. By increasing the price per dog walk, some effects of the rule are transferred to consumers, who incur the higher costs of the dog walks.
- Other options for affected dog walkers include changing the GGNRA locations used, using other substitute locations where limits are higher, changing the number of walks they take each day, or increasing staff to distribute dogs walked among more people. These adjustments would assist in reducing the revenue losses.
- It is also possible that restrictions on the number of dogs walked could lead to a redistribution of demand from dog walkers who walk many dogs to those who currently (i.e., prior to the interim permit program) walk less than six dogs. Increases in demand for added dog walkers and new small businesses to meet this new demand is also a potential market response which could not be adequately evaluated here. If such redistribution occurs, the overall industry losses in revenues could be lower than estimated in this analysis. However, the extent of any redistribution would depend on a number of site-specific factors, including the physical location of clients whose demand for dog walking would no longer be fulfilled by current dog walkers, as well as the capacity and interest of dog walkers currently walking less than six dogs to accommodate increased demand for dog walking. Because the extent of any redistribution is not known, this analysis does not attempt to quantify this potential response.
- The proposed rule may decrease uncontrolled interactions between humans and on- and off-leash dogs as well as between on- and off-leash dogs, outcomes which should improve the safety and enjoyment of commercial dog walking activities for both dogs and commercial dog walkers.

Private dog walkers. The total number of visits to GGNRA with dogs is not known with certainty. We estimate that between 0.9 million and 1.3 million visits to GGNRA occur each year by private dog walkers, out of approximately 14.5 million visitors to the GGNRA in recent years. Effects of the rule on these visitors are expected to vary depending on personal preferences, as the rule will not prohibit dog walking in GGNRA, but instead will serve to

reallocate and limit on and off-leash use to designated areas. While some private dog walkers may enjoy the reduction in dog walking congestion and associated dog interactions in some areas, other visitors may experience decreased enjoyment/satisfaction/convenience associated with reduced opportunities for on-leash as well as off-leash dog walking in their neighborhoods.

- In particular, those private dog walkers who live in areas where current off-leash areas will be reduced (e.g., Ocean Beach) or removed (e.g. Muir Beach), and those unable to walk dogs on-leash into the backcountry (e.g., Rancho) may experience a reduction in satisfaction. These are specific subsets of the total number of dog walkers, often local residents who have come to depend on using the GGNRA as a local park.
- Private dog walkers may also experience increases in enjoyment as a result of less congestion and fewer uncontrolled or intimidating dog interactions. These visitors could also benefit from increased enjoyment associated with reduced degradation of natural and cultural resources.
- The total consumer surplus value associated with private dog walking in GGNRA is estimated to be between \$2.9 million and \$9.6 million annually. As noted above, impacts on private dog walkers are expected to vary from negative to positive, depending on the individual. Because GGNRA will not prohibit dog walking, potential changes in consumer surplus value associated with the rule are not known.

Park visitors that prefer more managed dog walking or no dogs in a national park experience. Although the proposed rule does not prohibit dog walking in any of the 22 locations covered by the plan, it may decrease uncontrolled interactions between humans and on- and off-leash dogs, and should reduce degradation of natural and cultural resources by dogs. These effects may benefit people that prefer to visit GGNRA without the presence of dogs, or with more managed dog walking, though effects will vary according to personal preference. Data from two studies suggest that between 11 and 16 percent of visitors to GGNRA (or approximately 1.6 to 2.3 million visitors annually) may feel that dog walking negatively impacts their experience at GGNRA (see section 2.2.3). These visitors are expected to experience some increased consumer surplus (enjoyment) of GGNRA, under this proposed rule, in locations where on- or off-leash dog walking is precluded; or where dog walking is restricted to particular areas within a location.

Potential GGNRA visitors displaced because of dogs. Because dogs would continue to be present in the park, visitation patterns by people who currently avoid GGNRA because of dogs may be unchanged by the rule. However, because the rule would provide areas within each park location where no dogs are allowed, visitation by people that currently avoid GGNRA due to dog presence has the potential to increase over time.

NPS. NPS may experience some slight reduction in overall park visitation and associated expenditures by commercial as well as private dog walkers who change their behaviors to avoid GGNRA following the rule. However, the degree to which current visitation patterns will change due to the rule is not known. Further, such reductions in visitation have the potential to be offset by increases in visitation by visitors who prefer more managed dog walking or no dogs, or those who prefer less dog congestion. Short and medium term, transitional costs of both administering the dog management program and implementing a dog management rule with improvements are estimated to range approximately from \$1.6 to \$2.6 million during transition years. A small portion of this cost would be offset by permit fees.

SMALL ENTITY IMPACT ANALYSIS

This analysis was conducted in accordance with the RFA/SBREFA. The analysis concludes that across the 177 affected commercial dog walking operations, annual revenue impacts may range from \$550 per business (84 businesses) to \$117,000 (one business). Approximately 93 small businesses, specifically commercial dog walking operations, would be most affected by the proposed rule because they operate in GGNRA and may walk more than the six dog limit which will be established by the proposed rule. These businesses represent 52 percent of affected operators using the GGNRA. The remaining 84 commercial dog walking businesses operating in the GGNRA would incur minor permit costs of approximately \$550 per year.

Of the 93 businesses expected to experience a reduction in revenue, the median impact is \$15,000 per business (or \$9,700 per dog walker). Because baseline revenues of these dog walking businesses are not reported, and the analysis assumes operation at full capacity, both baseline business revenues and the estimated change in revenues may be overstated. Revenue impacts could be significantly lower if businesses are able to further adjust pricing, the number of walks, walking destination, and/or the number of dog walkers used. Impacts would be expected to vary depending on the size of dog groups currently walked in GGNRA (and hence the extent of changes required).

The upper bound of the total annualized industry-wide revenue losses are estimated to range from \$1.5 to \$3.8 million, and would predominantly affect those commercially walking more than six dogs at one time. **The proposed rule is not expected to have an annual economic effect of \$100 million, to result in a major increase in costs or prices for consumers, individual industries, or geographic regions, or result in significant adverse effects on competition, employment, investment, productivity, innovation, or on the ability of United States-based enterprises to compete with foreign-based enterprises in domestic and export markets.**

KEY UNCERTAINTIES

- **Future visitation.** Since GGNRA is made up of many park locations and does not have a central entrance where visitors can be counted, it is difficult to pinpoint the number of people who visit individual GGNRA locations each year except through official NPS visitor use statistics for the entire park, which generally are not separated by location. Data on dog walking visitors and visits by commercial dog walkers have been estimated at a few of the most popular locations through a small number of studies. We also assume visitation to the park would have been relatively constant under the baseline. To the extent that actual baseline visitation is different from study-based estimates, and if visitation increases for all or a subset of visitors over time, our analysis could understate or overstate potential costs. In addition, public comments indicate some number of people that avoid GGNRA due to dog presence, however, the size of this group of displaced visitors, and whether they would alter their behavior due to the rule, is unknown.
- **Behavioral responses.** The responses of commercial and private visitors to changes in the designation of particular areas within park locations for use by dogs (e.g., from off-leash to on-leash, from on-leash to no dog access, etc.), are not well understood. Our analysis attempts to develop a reasonable upper bound for potential costs associated with possible behavioral changes.
- **Number of dogs per dog walker.** We assume that the number of dogs would not be limited at GGNRA under the baseline. Surrounding County requirements exist that limit the number of dog groups to eight (San Francisco) or six (Marin). [Note: The typical limit in urban parks outside this region is also six]. These other local requirements may already influence the number of dogs in groups brought to GGNRA, which could lead our analysis to overstate impacts.
- **Commercial dog walker practices at GGNRA.** Information on revenues and pricing of commercial dog

walkers visiting, GGNRA is very limited. Information on number of visits and number of dogs per visit before the interim permit program was also not available. Data are also not available on such operating characteristics as the length of commercial dog walking trips or the average amount of time required by commercial dog walkers to pick up and drop off dogs before and after dog walking at GGNRA. Limited interviews, data from the interim permit program, and previous surveys provide some information on these entities. For commercial dog walkers, we assume commercial dog walkers take 9.65 walks per week for 50 weeks of the year. This may overstate current activity by commercial dog walker; as the number of dogs walked per week and percent capacity of dog walkers is likely to vary.

- **Price of Commercial Dog Walking.** This analysis assumes the current price of a dog walk in GGNRA is \$20, which, in the current market, could rise by as little as \$3.33 for dog walkers walking seven dogs at a time to as much as \$6.67 per walk for dog walking eight dogs at a time. Commercial dog walkers interviewed for this analysis indicated that increasing the price charged for each dog walk (rate) is a likely response to the proposed rule for those walking more than six dogs at one time. While the actual price increases across all commercial dog walkers operating at GGNRA is not known, consumers have noted increases in dog walking prices under the interim permit program of up to \$5 per dog per trip.

CHAPTER 1 | INTRODUCTION

1.1 PURPOSE OF THIS ANALYSIS

NPS is proposing to issue a rule that would amend the special regulations for Golden Gate National Recreation Area to designate areas within the park that would be open to on-leash and voice and sight control dog walking.¹ This report presents a regulatory analysis of the impacts of the proposed rule in order to assist NPS in meeting the requirements of E.O. 12866, “Regulatory Planning and Review,” which requires Federal agencies to assess the potential costs and benefits of proposed regulatory actions. It also addresses the requirements of the Regulatory Flexibility Analysis (RFA)/Small Business Regulatory Enforcement Fairness Act (SBREFA), which requires federal agencies to consider the potential impacts of any regulatory actions on small entities.

1.2 STRUCTURE OF THE REPORT

This report is organized as follows:

- Chapter 1 introduces the current policy and NPS’s proposed regulatory changes.
- Chapter 2 discusses baseline park operations and economic conditions to which all costs and benefits are compared thereafter.
- Chapter 3 describes the framework for cost-benefit analysis, and presents the cost-benefit analysis of NPS’s proposed alternatives.
- Appendix A presents our analysis of the potential impacts of the proposed rule on small entities.

1.3 STATEMENT OF NEED FOR THE PROPOSED ACTION

E.O. 12866 indicates that federal agencies should only promulgate regulations that address a compelling public need, such as material failures of private markets to protect or improve the health and safety of the public, the environment, or the well-being of the American people. In this case, NPS has already promulgated national on-leash regulations, however, due to litigation it cannot be enforced within the majority of GGNRA until such time as GGNRA completes its federal rulemaking on dog management. Within GGNRA, NPS is proposing a modified leash policy, as outlined in the proposed rule, which would allow off-leash in some areas, and create additional guidelines and conditions for dog walking.

¹ Proposed Rule.

NPS's mission is to preserve and conserve natural, cultural, and scenic resources and values unimpaired for the enjoyment of future generations. With respect to dog use at GGNRA, NPS seeks to allow both on and off-leash dog walking within GGNRA in a manner that does not compromise its national park mandate to preserve and protect national park resources and values, nor conflict with the enjoyment of such by its broader public." Specifically, NPS states that dog use, and specifically off-leash dog walking, currently results in a number of management challenges for NPS, including but not limited to:

- *Impacts on natural and cultural resources in the park.* Direct disturbance of natural and cultural resources from dog use affects soil and vegetation through trampling, digging, and bed-making, particularly along trails and native dune environments. Deposits of dog waste can alter nutrient distribution, thereby impacting the distribution of vegetation. Dogs may also carry exotic and native plant seeds in their fur, which could lead to deleterious or disproportionate propagation of invasive and/or non-invasive species. Disturbance of soils and vegetation from dogs also impacts wildlife in the park, and dogs can also impact animal populations through harassing wildlife and disturbing nesting or foraging areas.
- *Impacts on threatened and endangered species.* Of particular importance to NPS is the preservation and conservation of federally and state-listed and -proposed plants and animals. With more than 37 federally threatened and endangered species occurring in the park, GGNRA contains the third largest number of federally protected or endangered species in the national park system.² NPS states that direct disturbance or indirect dog-related impacts on host plants and other habitat elements can adversely affect these sensitive species.
- *Impacts to visitor use and experience.* GGNRA visitors' experience can also suffer due to the activities of dogs. Dogs can disrupt tranquil park environments, and the potential for dogs to bite or frighten visitors also detracts from the GGNRA visitor experience and results in health and safety impacts for both dogs and humans.³ Previous surveys have indicated that dog use within the park also presents a potential environmental justice issue, as members of ethnic minority groups, low-income visitors, and visitors with special needs may be more heavily affected by the presence of off-leash dogs.^{4,5}

² Proposed Rule.

³ National Park Service, Golden Gate National Recreation Area, California: Draft Dog Management Plan/SEIS. 2013.

⁴ Northern Arizona University: The Social Research Laboratory. "Public Opinion Research Telephone Survey Regarding Golden Gate National Recreation Area Pet Management Issues: Technical Report," December 2002. Page 27.

⁵ According to one study, respondents who stated dog walking was their primary reason for visiting the locations tended to be wealthier. Source: Tierney, Patrick. "Final Report: Summer-Fall 2008 Phase 1 Visitor Survey and Counts, At Crissy Field, Presidio and Ocean Beach Sites; Golden Gate National Recreation Area," November 2009. Page 54.

- *Employee, visitor, and dog health and safety.* Dogs can transmit disease vectors, with potential to affect both human and dog health as well as the health of wildlife in the park.⁶
- *Visitor noncompliance with regulations; and capacity of law enforcement staff to enforce rules.* Management of, and response to, dog-related issues also demands significant NPS staff time and resources.⁷

1.4 DESCRIPTION OF THE PROPOSED RULE AND ALTERNATIVES

NPS is proposing changes to dog walking practices, and their management, within the GGNRA. As stated above, off-leash dog walking is current practice within certain areas of the park, and has created impacts as noted above and in the GGNRA SEIS. However, the allowance of off-leash dog walking in the GGNRA is unique within the national park system.

Under 36 CFR 2.15(a)(2), dogs that are not controlled by caging or a leash are currently prohibited across the entire national park system, with the exception of GGNRA. This exception is the result of a 2005 decision by the United States District Court for the Northern District of California but has its roots in earlier accommodations by the park. For a more detailed discussion of the history of dog walking in the GGNRA, see Chapter 1 of the draft Dog Management Plan/SEIS.⁸

Alternatives presented in the proposed rule would, to varying degrees, limit access to on- and off-leash dog-walking spaces within the park. For a complete description of the proposed rule and the alternatives considered, please refer to the park's Dog Management Plan website (<http://www.nps.gov/goga/learn/management/dog-management.htm>).

1.5 FRAMEWORK FOR COST-BENEFIT ANALYSIS

Under guidance from the Office of Management and Budget (OMB) and in compliance with E.O. 12866, federal agencies measure changes in economic efficiency in order to understand how society, as a whole, will be affected by a regulatory action. In the context of the proposed regulatory actions, these efficiency effects represent the opportunity cost of resources used or benefits foregone by society as a result of the regulations. OMB defines opportunity cost as “the preferred measure of cost of the resources used, or the benefits foregone, as a result of the regulatory action.”⁹

⁶ National Park Service, Golden Gate National Recreation Area, California: Draft Dog Management Plan/SEIS. 2013.

⁷ National Park Service, Golden Gate National Recreation Area, California: Draft Dog Management Plan/SEIS. 2013.

⁸ National Park Service, Golden Gate National Recreation Area, California: Draft Dog Management Plan/SEIS. 2013.

⁹ U.S. Office of Management and Budget, “Circular A-4,” September 17, 2003, available at <http://www.whitehouse.gov/omb/circulars/a004/a-4.pdf>.

Economists generally characterize opportunity costs in terms of changes in producer and consumer surplus (i.e., social welfare impacts) in affected markets.^{10,11} The objective of cost-benefit analysis is to measure the costs imposed on society (losses in social welfare) and the benefits to society (gains in social welfare).

To compare costs and benefits for a proposed action, costs and benefits will ideally be presented in monetary (i.e., dollar) units. However, E.O. 12866 recognizes that in some cases it may be infeasible to monetize all the potential costs and benefits associated with a proposed regulatory change. In such cases, OMB Circular A-4 allows federal agencies to present relevant quantitative information in physical units or to present information qualitatively.

This analysis also considers the potential distributional impacts of the rule, i.e., whether the proposed action may unduly burden a particular group or economic sector.

The chapters that follow describe the baseline for the analysis, then identify, describe, and where possible, measure, the changes in social welfare associated with the proposed rule and its alternatives as compared to baseline conditions.

Key information sources for this analysis include the following:

- The proposed rule;
- The fall 2013 Draft Dog Management Plan/SEIS;
- Data on commercial dog walkers in the study area provided by NPS;
- Interviews with a number of active and former GGNRA commercial dog walkers;
- Communications with local animal care and control offices;
- Published surveys and economic valuation literature related to GGNRA visitation and value of dog walking;
- NPS statistics from the Interim Permit Program and GGNRA park visitation; and
- Communications with NPS.

¹⁰ For additional information on the definition of "surplus" and an explanation of consumer and producer surplus in the context of regulatory analysis, see: Gramlich, Edward M., *A Guide to Benefit-Cost Analysis* (2nd Ed.), Prospect Heights, Illinois: Waveland Press, Inc., 1990; and U.S. Environmental Protection Agency, *Guidelines for Preparing Economic Analyses*, EPA 240-R-00-003, September 2000, available at <http://yosemite.epa.gov/ee/epa/eed.nsf/webpages/Guidelines.html>.

¹¹ Producer surplus is an economic term that represents the difference between the amount that a producer (in this case, a commercial dog walker) receives for a good or service (in this case, the service of dog walking at GGNRA) and the minimum amount that he or she is willing to accept for that good or service. The difference, also referred to as the surplus amount or profit margin, is the benefit that the producer receives for selling his or her good or service in the market.

CHAPTER 2 | BASELINE CONDITIONS

This chapter describes the baseline economic setting for the cost-benefit analysis presented in Chapter 3. This section describes the baseline conditions for activities in and current uses of the park. OMB defines “baseline” as the “best assessment of the way the world would look absent the proposed action.”¹² In other words, the baseline includes the existing regulatory and socio-economic burden already imposed on entities that may be affected by the proposed rule.¹³ In this case, these entities are dog walkers, both private and commercial, visitors and potential visitors who would prefer no dogs at GGNRA, as well as NPS. For the purpose of this analysis, all users of the park are assumed to be in compliance with existing federal and state regulations affecting their activities. The baseline, however, does not include NPS’ interim permit program, effective June 2, 2014, which is a temporary program designed to remain in effect only until NPS issues a final rule addressing dog use in the GGNRA.

2.1 STUDY AREA FOR ANALYSIS

The GGNRA, established by NPS in 1972, spans more than 80,000 acres in Marin, San Francisco, and San Mateo Counties, CA.¹⁴ Of this 80,000 acres, NPS directly manages approximately 18,500 acres.¹⁵ These areas include coastal and inland areas, spread across several non-contiguous sites located in the three counties.¹⁶ GGNRA provides recreational access to hiking trails, campgrounds, historic sites and structures, and miles of shoreline and beaches to a diverse population. More specifically, the areas covered under the proposed rule include approximately 8.6 miles of beaches and approximately 137 miles of trails.

¹² U.S. Office of Management and Budget, “Circular A-4,” September 17, 2003, accessed at <http://www.whitehouse.gov/omb/circulars/a004/a-4.pdf>.

¹³ Relevant to the Draft Dog Management Plan/SEIS, the baseline is represented by the “No Action Alternative” (Alternative A).

¹⁴ National Park Service. “Golden Gate National Recreation Area Park Statistics,” accessed on June 25, 2014, at <http://www.nps.gov/goga/parkmgmt/statistics.htm>.

¹⁵ National Park Service. *Golden Gate National Recreation Area, Draft Dog Management Plan/Supplemental Environmental Impact Statement*. Fall 2013. Page 3.

¹⁶ National Park Service. “Golden Gate National Recreation Area Park Statistics,” accessed on June 25, 2014, at <http://www.nps.gov/goga/parkmgmt/statistics.htm>; Proposed Rule, p. 3.

A range of 12.6 to 15.9 million people visited the GGNRA each year between 1992 and 2012 (14.5 million in 2012-2014) in areas addressed by this plan.¹⁷ While visitation can change based on weather and daylight, park-wide visitation is generally stable year round, with only a slight increase during summer months and a slight decrease from October through December.¹⁸ The park also supports more than 1,200 plant and animal species (many of which have threatened, endangered or other special status) and significant historical and cultural resources.¹⁹ Exhibit 2-1 presents a general map depicting the 22 NPS-managed locations within GGNRA subject to the proposed rule.

2.1.1 TOTAL VISITS BY NPS DOG MANAGEMENT PLAN SITE

Since GGNRA is made up of many park locations and does not have a central entrance where visitors can be counted, it is difficult to pinpoint the number of people who visit individual GGNRA locations each year other than Muir Woods and Alcatraz where there are entrance stations. NPS uses traffic and trail counters, among other methods, placed at entrances to certain GGNRA locations, to estimate visitation to the park. However, less than half of the 22 locations subject to the proposed rule currently have traffic counters.²⁰ Periodic visitation surveys, nonetheless, provide supplementary data upon which standard NPS visitation factors are developed and used for an order of magnitude estimate of total visitation. Therefore, it is not possible to definitively report the level of visitation at each site using this data alone. For purposes of this analysis, we focus on estimating the total number of visits for affected user groups to the GGNRA rather than site-specific estimates. The methods we use to develop these estimates are described below for each user group.

¹⁷ National Park Service, Golden Gate National Recreation Area, California: Draft Dog Management Plan/SEIS. 2013; NPS written communication, 2015. NPS reports that 17.7 million visitors entered the park in 2015, including sites not addressed by the dog plan such as Muir Woods, Alcatraz, and Tennessee Valley.

¹⁸ National Park Service, Golden Gate National Recreation Area, California: Draft Dog Management Plan/SEIS. 2013.

¹⁹ National Park Service. "Golden Gate National Recreation Area Park Statistics," accessed on June 25, 2014, at <http://www.nps.gov/goga/parkmgmt/statistics.htm>; National Park Service. Annual Visitation, Golden Gate National Recreation Area. Accessed on June 25, 2014, at [https://irma.nps.gov/Stats/SSRSReports/National%20Reports/Five%20Year%20Annual%20Recreation%20Visitation%20By%20Park%20\(1979%20-%20Last%20Calendar%20Year\)](https://irma.nps.gov/Stats/SSRSReports/National%20Reports/Five%20Year%20Annual%20Recreation%20Visitation%20By%20Park%20(1979%20-%20Last%20Calendar%20Year))

²⁰ National Park Service. Golden Gate National Recreation Area: Traffic Counts at Selected Sites, 1996-2014. [https://irma.nps.gov/Stats/SSRSReports/Park Specific Reports/Traffic Counts?Park=GOGA](https://irma.nps.gov/Stats/SSRSReports/Park%20Specific%20Reports/Traffic%20Counts?Park=GOGA).

EXHIBIT 2-1. MAP OF GGNRA LANDS THAT ARE MANAGED BY NPS



Source: Draft Dog Management Plan/SEIS.

2.2 POTENTIALLY AFFECTED USER GROUPS

This section describes the users of GGNRA resources who may potentially be affected by the proposed rule. They are broadly divided into two user groups, each of which can be further broken down into two sub-categories:

(1) **Visitors Who Would Prefer to Walk Dogs in GGNRA** consist of patrons who typically use GGNRA for dog walking and who prefer to visit areas with access to beaches, shorelines and some trails. This user group can be further broken down into two sub-categories:

- **Private (i.e., non-commercial) dog walkers**, who are users that bring their own dogs to GGNRA for walks; and
- **Commercial dog walkers**, who are individuals and businesses who earn income from walking dogs and who use GGNRA for special uses.

(2) **Visitors Who Would Prefer More Managed Dog Walking or Not to Have Dog Walking in GGNRA** include patrons who express concern about uncontrolled interactions with dogs both on- and off-leash and would prefer no dogs be present within the park or that they be limited to certain separated areas. For purposes of this analysis, we further break down this user group into two sub-categories:

- people who currently visit GGNRA locations; and,
- people who currently do not visit the park or specific GGNRA locations due to the presence of dogs.²¹

In the following sections, we describe the current and expected baseline conditions for each user category in more detail, specifically: private dog walkers, commercial dog walkers, people who currently visit GGNRA but prefer not to have dog walking or desire more limited dog walking in GGNRA and people who currently do not visit GGNRA due to the presence of dogs. Chapter 3 of this analysis evaluates potential costs and benefits of proposed dog management alternatives on these four affected user categories.²²

2.2.1 PRIVATE DOG WALKERS

Activities conducted by private dog walkers in the GGNRA include on-leash, off-leash as well as a combination of on- and off-leash dog walking. Surveys have found that dog walkers value on- and off-leash dog walking as an opportunity both for exercise and social interactions for their dogs and themselves.²³ Changes in the manner in which dog walking activities are regulated within the GGNRA may therefore impact some of these users.

²¹ Visitors who have not expressed a preference regarding dog walking are not addressed in the analysis because such users should not be affected by the dog management plans proposed (Dog Management Plan/SEIS, p. 1056).

²² This analysis also evaluates costs and benefits borne by NPS staff in Chapter 3.

²³ See for example: RTI. Draft Report: Economic Analysis for Golden Gate National Recreation Area Dog Management Plan/EIS Phase II. RTI Project Number 0209917.001. January, 2006.

The 2002 NAU survey asked respondents about their opinions about the then enforced NPS-wide regulations which “allow for walking dogs on-leash at most GGNRA locations and prohibit any off-leash dog walking”.²⁴ The majority of respondents in the four-county region (71 percent) indicated support for the then current NPS-wide regulation, with 45 percent “strongly supporting” it.²⁵ *Just over one-half of the dog owners (51 percent) (or 15 percent of total respondents) in this survey said that they supported off-leash dog walking in GGNRA locations, while 45 percent of dog owners (13 percent of total respondents) opposed off-leash dog walking in GGNRA locations.*²⁶

Number of Dog-Owners and Dogs in the Study Area

The number of people and/or households that own dogs in counties within and adjacent to the GGNRA is not known with certainty. A random telephone survey of 1,600 residents in San Francisco, Marin, San Mateo and Alameda Counties conducted in 2002 by Northern Arizona University (NAU) found that 22 percent of all respondents *owned or cared for* one dog, and an additional seven percent of respondents *owned or cared for* more than one dog.²⁷ The NAU study also asked respondents residing in San Francisco how many dogs they owned; the vast majority of San Francisco respondents reported owning one dog (81 percent), followed by two dogs at 16 percent and three dog households accounting for only three percent. A more recent survey conducted by the American Veterinary Medical Association (AVMA) estimates the national percentage of households with dogs at 36.5 percent.²⁸ The AVMA also estimates the average number of dogs owned per household at 1.6, as compared to the weighted average estimated by the 2002 NAU study of 1.2 dogs per household in San Francisco.

Similarly, data on the number of dogs is not known with certainty. While most counties and cities in the area require dogs to be licensed, many dogs go unlicensed each year. For example, San Francisco issued only 10,000 dog licenses in 2012, although it is county law to license your dog in San Francisco and document that each dog has a current rabies vaccination.²⁹ The Friends of Animal Care Control, a volunteer-based non-profit which raises funds for San Francisco Animal Care and Control, estimated the dog population in San Francisco at approximately 120,000 in 2015, suggesting a dog licensing rate of only

²⁴ Northern Arizona University: The Social Research Laboratory. “Public Opinion Research Telephone Survey Regarding Golden Gate National Recreation Area Pet Management Issues: Technical Report,” December 2002.

²⁵ Northern Arizona University: The Social Research Laboratory. “Public Opinion Research Telephone Survey Regarding Golden Gate National Recreation Area Pet Management Issues: Technical Report,” December 2002.

²⁶ Northern Arizona University: The Social Research Laboratory. “Public Opinion Research Telephone Survey Regarding Golden Gate National Recreation Area Pet Management Issues: Technical Report,” December 2002.

²⁷ Northern Arizona University: The Social Research Laboratory. “Public Opinion Research Telephone Survey Regarding Golden Gate National Recreation Area Pet Management Issues: Technical Report,” December 2002.

²⁸ AVMA. 2012 U.S. Pet Ownership Statistics. Accessed January 13, 2016 online at: <https://www.avma.org/KB/Resources/Statistics/Pages/Market-research-statistics-US-pet-ownership.aspx>.

²⁹ Email and personal communication with San Francisco Department of Animal Care and Control on July 18, 2015.

eight percent of the total estimated dog population.³⁰ The dog licensing rate in San Mateo County is similar, with an estimated 15 percent of dogs licensed (i.e., 30,000 dogs licensed out of an estimated total population of approximately 200,000 dogs).^{31,32}

Use of GGNRA by Dog Walkers

Many dog owners in the Bay Area utilize the GGNRA for dog-walking activities. In fact, of the dog-owning or temporary care providers including commercial dog walker respondents to the 2002 NAU telephone survey (14 percent of all respondents), half of them reported taking their dog(s) for walks at GGNRA. Of this subgroup, 39 percent (5.5 percent of total respondents) reported walking their dogs at GGNRA daily or weekly.³³

According to a 2009 study by Tierney at three GGNRA locations in San Francisco (Ocean Beach, the portion of the Presidio subject to the NPS dog management plan at Baker Beach (Area A), and Crissy Field), dog walking was the primary reason for visiting those park locations for between 7 and 13 percent of visitors, depending on the park location.³⁴ Specifically, 13 percent of visitors to Crissy Field cited dog walking as the primary reason for visiting the park. This number was 6.7 percent for visitors at Ocean Beach, and 10.8 percent for visitors at the Presidio area managed by NPS (Area A).³⁵ The study did not distinguish between private and commercial dog walkers.

Two additional sources of detailed data on visitation at GGNRA locations exist: a report on baseline shoreline use estimates for the *Cosco Busan* Oil Spill Damage Assessment (IEc 2010) which included data on several park locations,³⁶ and a second study that focused on characterizing visitor activities at six locations within the park (IEc 2011).³⁷ These studies also help to characterize park site visitation, including visitation by dog walkers, at these locations.

To estimate the level of dog walking at the GGNRA locations, on-site visitor count studies were conducted over a four-day period in 2008 (IEc 2010) and 2011 (IEc 2011), categorizing visitors individually according to “whether or not he or she was

³⁰ Friends of Animal Care and Control. Why Should You Get Your Dog Licensed? Accessed on August 26, 2015 online at: http://www.helpacc.org/acc_licensing.html.

³¹ Personal communication between NPS and San Mateo Animal Control and Licensing on January 7, 2016.

³² Readily available data on the number of licensed dogs and the estimated population of dogs in Marin County were unavailable.

³³ Northern Arizona University: The Social Research Laboratory. “Public Opinion Research Telephone Survey Regarding Golden Gate National Recreation Area Pet Management Issues: Technical Report,” December 2002.

³⁴ Tierney, Patrick. “Final Report: Summer-Fall 2008 Phase 1 Visitor Survey and Counts, At Crissy Field, Presidio and Ocean Beach Sites; Golden Gate National Recreation Area,” November 2009.

³⁵ Tierney, Patrick. “Final Report: Summer-Fall 2008 Phase 1 Visitor Survey and Counts, At Crissy Field, Presidio and Ocean Beach Sites; Golden Gate National Recreation Area,” November 2009.

³⁶ Industrial Economics, Inc. “Baseline Shoreline Use Estimates for the *Cosco Busan* Oil Spill Damage Assessment.” December 30, 2010.

³⁷ Industrial Economics, Inc. “Assessment of Visitor Activities at Six Sites Within Golden Gate National Recreation Area.” December 20, 2011.

accompanied by a dog.” Field personnel did not record whether dogs were on or off-leash.³⁸ Based on this categorization, the proportion of dog walkers was calculated for each of the locations over each four-day period. These data were then combined with data from NPS vehicle counters on the number of vehicles that entered GGNRA on those same days to develop a ratio of visitors to vehicles observed during the on-site survey.

As presented in Exhibit 2-2, IEC 2011 suggests that the proportion of dog walkers to overall visitors varies significantly by site, ranging from 5.5 percent at Muir Beach to 62 percent at Fort Funston.³⁹ Crissy Field, Ocean Beach and Fort Funston were found to be the most popular locations for dog-walking. The 2011 study extrapolated the number of dog walkers observed during the four-day on-site visitor counts to annual estimates of visitation for five of the six locations.⁴⁰

In Exhibit 2-2, we estimate the total number of private dog walking visits to GGNRA sites in recent years. For the six sites for which survey data is available, we present data on the total visitation and percent of visitors with dogs. To assist in gaining a general understanding of total visitation by dog walkers to non-surveyed locations, NPS provided field estimates of current weekly visitation to these locations by total as well as commercial dog walkers.⁴¹ To estimate the number of private dog-walking visits to all sites, we subtract the commercial visit estimates from the estimates of total dog-walking visits for each site. Finally, we sum estimates for all locations in order to arrive at a total estimate of visitation by dog walkers under the baseline. The outcome of these calculations is presented in Exhibit 2-2. These estimates should be considered ballpark figures used for purposes of understanding the general scale of impacts rather than a precise estimate of visitation. These estimates are used as the basis for understanding future visitation in the GGNRA by private dog walkers. We do not impose any limits on the number of dogs that could have been walked under the baseline for analysis.

³⁸ Industrial Economics, Inc. “Assessment of Visitor Activities at Six Sites Within Golden Gate National Recreation Area.” December 20, 2011.

³⁹ Tierney (2009) estimated that 13 percent of visitors to Crissy Field had dog walking as their primary purpose; IEC 2010 estimated 24 percent of visitors had dogs with them. Tierney (2009) estimated that 6.7 percent of visitors to Ocean Beach had dog walking as their primary purpose; IEC 2010 estimated that 9.4 percent of visitors had dogs with them. The two studies used different methodologies and are not directly comparable, as discussed in IEC (2011).

⁴⁰ The 2010 and 2011 IEC studies were limited by their geographic coverage (six locations). In addition, on-site visitor counts occurred over four-day periods at each site, which is a small portion of the year; visitation at other points in the year could vary. Thus, annual estimates from these estimates should be used with caution.

⁴¹ Written communication with NPS, September 14, 2015.

EXHIBIT 2-2. ESTIMATED ANNUAL DOG-WALKING VISITS TO GGNRA, BY SITE

BEACH	VEHICLE TRAFFIC COUNTED	RATIO OF VISITORS PER VEHICLE ¹	ESTIMATED NUMBER OF VISITS ¹	PERCENT OF ANNUAL VISITS WITH DOGS ²	ESTIMATED ANNUAL NUMBER OF VISITS WITH DOGS ²	ESTIMATED NUMBER OF COMMERCIAL VISITS ⁴	ESTIMATED ANNUAL NUMBER OF PRIVATE DOG WALKING VISITS (EXCLUDING COMMERCIAL)
Muir Beach	145,442	1.80	261,317	5.5%	14,370	0	14,400
Crissy Field ²	833,664	2.05	3,199,692	13% to 24.0%	415,960 to 767,930	109,900 to 203,000	306,000 to 565,000
Baker Beach ³	270,784	1.60	494,089	6.9%	34,090	10,200	23,900
Ocean Beach ²	1,406,085	3.41	2,767,877	6.7% to 9.4%	185,450 to 260,180	3,600 to 5,000	181,900 to 255,200
Fort Funston	396,272	1.38	545,586	62.1%	338,810	108,400 to 230,400	230,400
Rodeo Beach ⁵	N/A	N/A	315,602	8.1%	25,560	1,800 to 23,700	23,700
All other sites ⁶	N/A	N/A	N/A	N/A	76,700	67,200	67,200 to 187,500
Total	N/A	N/A	N/A	N/A	1,090,940 to 1,655,700	243,400 to 355,700	847,500 to 1,300,000

Sources: Industrial Economics, Inc. "Assessment of Visitor Activities at Six Sites Within Golden Gate National Recreation Area." December 20, 2011; Industrial Economics, Inc. "Baseline Shoreline Use Estimates for the *Cosco Busan* Oil Spill Damage Assessment." December 30, 2010; Tierney, Patrick. "Final Report: Summer-Fall 2008 Phase 1 Visitor Survey and Counts, At Crissy Field, Presidio and Ocean Beach Sites; Golden Gate National Recreation Area," November 2009; Written communication with NPS, September 14, 2015.

Notes: These estimates should be considered ballpark figures used for purposes of understanding the general scale of impacts rather than a precise estimate of visitation. Numbers may not sum to do exhibit rounding.

1. Visitation estimates were developed by multiplying monthly vehicle counts by the ratio of visitors to vehicles observed during an on-site survey across a four-day period. Observations at Rodeo Beach, Crissy Field, Baker Beach, and Ocean Beach are from November 2008. Observations at Muir Beach and Fort Funston are from August 2011.
2. This site uses estimates of percent visitors with dogs as reported in IEC 2011 and Tierney (2009). Tierney (2009) estimated that 13 percent of visitors to Crissy Field and 6.7 percent to Ocean Beach had dog walking as their primary purpose. The two studies used different methodologies and at different times of the year, as discussed in IEC (2011).
3. This ratio represents only visitors to Baker Beach Parking Lot, not Baker Beach Sand Ladder. Baker Beach Sand Ladder site does not have a vehicle counter. Source: IEC. 2011. "Assessment of Visitor Activities at Six Sites Within Golden Gate National Recreation Area." Prepared for NPS, GGNRA. December 20. p. 33.
4. NPS provided field estimates of the percent of visits to each site that are commercial dog-walking visits. These are subtracted from the estimates of total dog-walking visits for each location to obtain the estimates of private dog-walking visits reported here. For reference, the IEC 2011 study provided an estimate of commercial dog walking visits at Fort Funston (142,000), which falls within the range of visits estimated above.
5. Visitation and dog-walking visits for the other locations were developed from field estimates provided by NPS.
6. Because IEC (2011) did not develop annual visitation and dog walking estimates for Rodeo Beach, estimates of baseline visits to the site were adapted from IEC (2010) in order to estimate an annual number of visitors for this site in 2009

Availability of Substitute Locations

Although the GGNRA extends beyond the City, the park represents a large, convenient, and high quality area for walking dogs in the City of San Francisco. The Trust for Public Land (TPL) periodically issues a report, known as City Park Facts, analyzing various attributes of parklands in cities and municipalities across the country. In the 2014 edition of City Park Facts, TPL estimates the number off-leash dog parks in the City of San Francisco at 3.3 per 100,000 residents (in total, 27 off-leash, city/county dog parks). TPL ranked the City of San Francisco among cities with the most off-leash dog parks per capita in the U.S.⁴² Thus, relative to other parts of the country, San Francisco has a relatively large number of parks that allow off-leash dog walking.

In Marin County, Marin County Open Space provides a total of 155.5 miles of trails and fire roads for on-leash dog walking, of which 92.5 miles are also open to off-leash dog walking.⁴³ Marin Municipal Water District provides 21,000 acres and 130 additional miles for on-leash dog walking. In San Mateo County, off-leash dog walking by county ordinance is not permitted in public, only private or commercially enclosed areas. Exhibit 2-3, on the following page, further summarizes the areas managed by jurisdictions near to the GGNRA for on-leash and off-leash dog walking activities, as well as areas where dogs are prohibited.

In response to public comments related to the potential redistributive effects of managing and restricting dog walking at GGNRA, NPS conducted a survey in the summer of 2012, the *GGNRA Dog Walking Satisfaction Visitor Study*. The survey reached out to 7,000 individuals through postcards and emails, and received 897 responses.⁴⁴ Among other questions, respondents were asked to identify alternate, nearby locations for dog walking. Based on the survey results, NPS created a list of potential alternative dog walking areas for each GGNRA location. Exhibit 2-5 describes the alternative locations considered by NPS in the draft plan/SEIS. The locations identified consist of locations that were (1) ranked by users as being highly likely to visit, or (2) which are located immediately adjacent to GGNRA locations and users identified as offering a similar dog walking experience. Other parks that allow dog walking near GGNRA locations are not included in Exhibit 2-4 because these parks were not identified by survey respondents as alternative locations they would visit, or were only identified by one or two respondents.⁴⁵

⁴² Source: The Trust for Public Land. *2014 City Park Facts*. Accessed on June 25, 2014, at http://www.tpl.org/sites/default/files/files_upload/2014_CityParkFacts.pdf.

⁴³ Email communication between NPS and Marin County Parks on January 13, 2016.

⁴⁴ NPS's *GGNRA Dog Walking Satisfaction Visitor Study*, as identified in National Park Service, Golden Gate National Recreation Area, California: Draft Dog Management Plan/SEIS. 2013.

⁴⁵ For more information and description of each site, see the draft plan/SEIS, p. 339. This table only reflects locations chosen by respondents rather than being a comprehensive list of all locations.

EXHIBIT 2-3. DOG MANAGEMENT AREAS BY JURISDICTION

	CITY/ COUNTY OF SAN FRANCISCO	SAN MATEO COUNTY	MARIN COUNTY PARKS	MARIN COUNTY OPEN SPACE	MARIN WATER DISTRICT	POINT REYES NATIONAL SEASHORE	CALIFORNIA STATE PARKS	MID- PENINSULA REGIONAL OPEN SPACE	EAST BAY REGIONAL PARKS	SAN FRANCISCO WATERSHED
Area of Managed Land	3,500 acres ¹	17,000 acres, 190 miles of trails ²	Approx. 1,850 acres ³	Approx. 16,000 acres; 249 miles of trail ⁴	21,000 acres, 130 miles of road and trail ⁵	71,000 acres, ⁶ 150 miles of trail ⁷	Approx. 12,000 acres near / adjacent to GGNRA	Approx. 60,000 acres, 220 miles of trail ⁸	Approx. 119,893 acres and 1,250 miles of trails ⁹	Approx. 61,000 acres ¹⁰ (No public access)
Areas where dogs permitted on-leash	3,500 acres minus athletic fields/ courts; playgrounds; sensitive habitat areas ¹¹	Approx. 10.6 miles of trails ¹²	Approx. 1,636 acres (incl. sensitive areas dogs are excluded from) ¹³	Approx. 155.5 miles of trails and fire roads ¹⁴	130 miles of road and trail ¹⁵	Approx. 14 miles of beach ¹⁶ , and 1.2 miles of trail ¹⁷	Parking lots, paved roads only. - No beaches and trails ¹⁸	57.1 miles of trail, 17.5 acres. ¹⁹	102,797 acres and 1,133 miles of trails ²⁰	None
Areas where dogs permitted off-leash	117.7 acres; 0.2 miles of trails ²¹	None ²²	None ²³	92.5 miles of (primarily) fire protection road ²⁴	None	None ²⁵	None ²⁶	17.5 acres ²⁷	23 acres, 2.5 miles of trail ²⁸	None
Areas where dogs prohibited	Athletic fields/ courts; playgrounds; sensitive habitat areas	Approx. 16,000 acres, 179.4 miles of trails	Playground or play areas (enclosed or unenclosed), marshes, tide pools, ponds, or other sensitive wildlife areas ²⁹	Approx. 15,800 acres (all areas except trails and fire roads) ³⁰	21,000 acres	All undeveloped areas, most beaches and trails	All areas except parking lots and paved roads	Approx. 59,983 acres and 163 miles of trail	17,096 acres and 117 miles of trail	61,000 acres

Sources:

- 1 <http://sfrecpark.org/parks-open-spaces/natural-areas-program/natural-areas-faqs/>
- 2 <http://parks.smcgov.org/>
- 3 <http://www.marincounty.org/depts/pk/activities>
- 4 <http://www.marincountyparks.org/depts/pk/divisions/open-space/main/info>
- 5 <http://www.marinwater.org/189/Biking-Dog-Walking-Hiking-Riding-Picnick>
- 6 http://www.nps.gov/pore/learn/news/upload/newspaper_visitorguide_2012.pdf
- 7 http://www.nps.gov/pore/planyourvisit/hiking_guide.htm

- 8 <http://www.openspace.org/sites/default/files/DistrictFactSheet.pdf>
- 9 <http://www.ebparcs.org/parks>
- 10 <http://www.sfwater.org/index.aspx?page=134>
- 11 <http://sfrecpark.org/parks-open-spaces/natural-areas-program/natural-areas-faqs/>
- 12 <http://parks.smcgov.org/dog-friendly-recreation-etiquette>
- 13 <http://www.marincounty.org/depts/pk/activities>
- 14 <http://www.marincountyparks.org/depts/pk/divisions/open-space/main/info>
<http://www.marinwater.org/189/Biking-Dog-Walking-Hiking-Riding-Picnick>

	CITY/ COUNTY OF SAN FRANCISCO	SAN MATEO COUNTY	MARIN COUNTY PARKS	MARIN COUNTY OPEN SPACE	MARIN WATER DISTRICT	POINT REYES NATIONAL SEASHORE	CALIFORNIA STATE PARKS	MID- PENINSULA REGIONAL OPEN SPACE	EAST BAY REGIONAL PARKS	SAN FRANCISCO WATERSHED	
Sources (continued)											
15	http://www.nps.gov/pore/planyourvisit/beaches.htm					22	http://www.marincounty.org/depts/pk/divisions/parks/main/dogs				
16	http://www.nps.gov/pore/planyourvisit/upload/sitebulletin_dogs.pdf					23	Personal communication between NPS and Marin County Parks January 13, 2016				
17	http://www.parks.ca.gov/?page_id=22542					24	http://www.nps.gov/pore/planyourvisit/pets.htm				
18	http://www.openspace.org/what-to-do/activities/dogs					25	http://ohv.parks.ca.gov/pages/1140/files/14%20ccr%20sec%204312.pdf				
19	http://www.ebparks.org/activities/dogs					26	http://www.openspace.org/preserves/pulgas-ridge				
20	http://sfrecpark.org/about/publications/dog-play-area-master-planning/					27	http://www.ebparks.org/parks/pt_isabel				
21	Personal communication between NPS and Animal Care and Control Program Manager, San Mateo County Health Services, San Mateo county ordinance: 6.04.070					28	http://www.marincounty.org/depts/pk/divisions/parks/main/dogs				
						29	http://www.marincounty.org/depts/pk/divisions/open-space/main/dogs				

EXHIBIT 2-4. KEY NEARBY DOG WALKING AREAS IDENTIFIED BY SURVEY PARTICIPANTS AS ALTERNATIVE LOCATIONS IN THE GGNRA DOG WALKING SATISFACTION VISITOR STUDY^{1,2}

COUNTY	NAME	PARK MANAGEMENT	LOCATION	SIZE OF PARK ²	NOTES
Marin	Upton Beach	Marin County	Adjacent to Stinson Beach	4 acres	Beach is on-leash dog walking only, but off-leash dog walking may occur here.
	Camino Alto Open Space Preserve	Marin County	Mill Valley; Escalon Rd.	170 acres	Dogs on leash on all trails; dogs off-leash on all fire roads under voice command.
	Blithedale Summit Open Space Preserve	Marin County	Mill Valley; Glen Dr.	899 acres	Dogs on leash on all trails; dogs off-leash on all fire roads under voice command.
	Mt. Tamalpais State Park	CDPR	Mill Valley	6,300 acres	Dogs on leash only in picnic areas and camping areas. No dogs allowed on trails, fire roads, or undeveloped areas.
	Bolinas Beach	Marin County and Private Lands	Olema Bolinas Road, off Highway 1	Unknown	Dogs allowed off leash.
San Francisco	Pine Lake/Stern Grove	SFRPD	Wawona neighborhood; Stern Grove is at 19th Ave. and Wawona; Pine Lake at Wawona Way and Crestlake	3.3 acres (Pine Lake DPA); 0.20 mile trail; 0.7-acre (Stern Grove DPA)	Off-leash areas in two DPAs and along the 0.2 mile Stern Grove Trail; this trail connects Pine Lake Meadow to Stern Grove on the north side of the park.
	Golden Gate Park (all areas)	SFRPD	Sunset neighborhood; between Sunset and Richmond	1,017 acres; 8.6 acres off-leash DPAs	There are four distinct DPA areas in the park (southeast, northeast, south central, and north central) where dogs are allowed off leash. Outside of the DPAs, dogs are allowed on leash, and can be walked on trails at the site.
	McLaren Park	SFRPD	Bayview neighborhood; Shelly Dr. and Mansell St	59.9 acres off-leash DPA	Two separate DPAs: (1) 59-acre area bounded by Shelly Drive with fence along roadway (2) 0.9 acre adjacent to natural area with fence along roadway. Off-leash allowed in DPAs.
	Alta Plaza Park	SFRPD	Pacific Heights neighborhood; between Scott and Steiner St.	0.5 acres off-leash DPA	Leash rule: Off-leash in DPA, on leash in the park. Park is a large sloping expanse of grass with some landscaped plantings.

COUNTY	NAME	PARK MANAGEMENT	LOCATION	SIZE OF PARK ²	NOTES
	Glen Canyon Park	SFRPD	Glen Park neighborhood; Bosworth St. and Diamond Heights Blvd.	70 acres	While respondents identified this as a desirable alternate dog walking site, the park's regulations officially prohibit off-leash dog walking.
	Bernal Heights	SFRPD	Bernal Heights neighborhood; Bernal Heights and Esmeralda	21 acres off-leash DPA	DPA located within Bernal Heights Natural Area.
	The Presidio (Area B - managed by the Presidio Trust)	The Presidio Trust	Northwest tip of the San Francisco Peninsula; south of Mason St. and east of Lincoln Blvd.	Area B is approximately 1,170 acres	Dogs on leash where allowed in Presidio Area B.
San Mateo ³	Montara State Beach (includes McNee Ranch)	CDPR	Montara	Unknown	Dogs allowed on a leash, six feet or shorter.
	Quarry Park, El Granada	San Mateo County of Department of Parks	El Granada; corner of Santa Maria Ave. and Columbus St.	40 acres	Dogs allowed on a leash
	Half Moon Bay (Surfer's Beach)	CDPR	El Granada, along Highway 1	Unknown	
	Sharp Park	SFRPD	Pacifica, along Highway 1	Unknown	
	Pacifica State Beach (at Linda Mar)	City of Pacifica	Pacifica, along Highway 1	Unknown	Dogs allowed on a leash on the beach.

Source: National Park Service, Golden Gate National Recreation Area, California: Draft Dog Management Plan/SEIS. 2013; as identified in NPS's *GGNRA Dog Walking Satisfaction Visitor Study*.

Notes:

1. This exhibit does not include all nearby locations, only the subset identified by survey respondents as alternative locations they would visit. Nearby locations not identified by survey respondents as alternative locations or were only identified by one or two respondents were excluded.
2. SFRPD = San Francisco Recreation and Parks Department; DPA = dog play area; CDPR = State of California Department of Parks and Recreation.
3. In San Mateo County, off-leash dog walking by county ordinance is not permitted in public, only private or commercially enclosed areas.

2.2.2 COMMERCIAL DOG WALKERS

Unlike private dog walkers, commercial dog walkers consist of individuals and businesses who earn income from walking dogs. As with private dog walking activities, changes in the manner in which dog walking activities are regulated within the GGNRA may provide both positive and negative impacts for this previously-unregulated, user group.

Many residents of the San Francisco Bay Area rely on commercial dog walkers to provide exercise and socializing opportunities for their dogs, but the number of annual visits to GGNRA by commercial dog walkers is not known with certainty. Respondents to the 2002 NAU telephone survey indicated that 20 percent of dog-owning residents (or five percent of total residents) have had someone else take their dog for a walk in the GGNRA. Twenty percent of this population subset (*one percent of all respondents*) reported having had their dog taken to a GGNRA site by a commercial dog walker.⁴⁶ According to NPS staff, commercial dog walking activities are most common at four locations: Alta Trail in Marin County, and Fort Funston, Crissy Field and Baker Beach in San Francisco.⁴⁷

Number of Commercial Dog Walking Businesses Operating in GGNRA

Information on the number of registered dog walking businesses are compiled by the U.S. Census under NAICS Code 812910, pet care services (other than veterinary services), which includes all establishments that provide boarding, grooming, sitting, and pet training services. The U.S. Census reported 969 pet service businesses, including 134 establishments, and 835 non-employers (sole proprietors) in Marin, San Francisco, and San Mateo Counties combined in 2013.⁴⁸ Commercial dog walking businesses represent a subset of this total, but the specific number is not reported.

The total number of entities (i.e., individuals and businesses) engaged in commercial dog walking activities at GGNRA is also not known with certainty, but the numbers appear to be increasing over time. As of January 2006, there were 68 commercial dog-walking businesses registered in the City and County of San Francisco and 216 registered in the San Francisco Bay Area.⁴⁹ In October 2015, there were 263 commercial dog-walking businesses registered in the City and County of San Francisco, and 24 registered businesses in Marin County. San Mateo County does not issue commercial licenses for dog walking; however, there may be some limited unregulated use.⁵⁰ In 2013, GGNRA implemented an interim permit program for commercial dog walkers in San Francisco and Marin Counties. Between June 1, 2014, when NPS first began issuing permits, and

⁴⁶ Northern Arizona University: The Social Research Laboratory. "Public Opinion Research Telephone Survey Regarding Golden Gate National Recreation Area Pet Management Issues: Technical Report," December 2002.

⁴⁷ National Park Service, Golden Gate National Recreation Area, California: Draft Dog Management Plan/SEIS. 2013.

⁴⁸ U.S. Census Bureau, 2013 County Business Patterns; U.S. Census Bureau, EWD, 2013 Nonemployer Statistics.

⁴⁹ National Park Service, Golden Gate National Recreation Area, California: Draft Dog Management Plan/SEIS. 2013.

⁵⁰ National Park Service, Written communication, November 2, 2015.

July 29, 2014, 177 commercial dog walking businesses, representing 268 commercial dog walkers, applied for permits.⁵¹

Existing Commercial Dog-walking Regulations

In response to the increased presence of commercial dog-walking activities on City and County-owned lands in the region, some local governments have instituted regulations for commercial dog walking activities. Exhibit 2-5 provides a summary of current commercial dog walking regulations in the study area by jurisdictions other than NPS GGNRA.

While these regulations do not apply to Federal lands, commercial dog walkers must comply with these rules on City and County-owned lands. There are some minor differences in numbers of dogs allowed, for example, San Francisco allows up to eight dogs. However, the norm set by the other adjacent jurisdictions allows six or fewer dogs, as noted below. Additionally, GGNRA's Negotiated Rulemaking Committee for the dog management planning effort found by consensus agreement that commercial dog walkers should not be able to walk more than six dogs at one time. GGNRA's limits generally align with these jurisdictions, as well as the limits set by other jurisdictions outside the Bay area.

2.2.3 VISITORS WHO WOULD PREFER LIMITING DOG WALKING OR NOT HAVING DOG WALKING IN GGNRA

Current Park Visitors

Some park visitors would prefer to experience GGNRA without the presence of dogs. This group is comprised of people who currently visit GGNRA locations but who would prefer an experience with no dogs, or fewer dogs present. These users are distinct from the displaced users described below, who are people who choose not to visit GGNRA because of the presence of dogs.

⁵¹ Personal communication with NPS on July 29, 2014. The number of commercial dog walkers registered through the interim permit program (268) represents the best available information NPS has on the number of commercial dog walkers walking more than 4 dogs, and serves as a proxy for the pre-interim permit program baseline. This number includes up to ten commercial dog walking permits for Presidio Trust lands, which are not part of this proposed rule, and as such could slightly overstate the number of commercial dog walkers of this size operating in GGNRA prior to the interim permit program. However, it is also possible that a small number of commercial dog walkers may no longer walk on GGNRA lands due to the interim permit program. Because this is unknown, NPS has erred on the side of over-stating the number of (and therefore the impacts to) commercial dog walkers to account for possible variations between the pre-rule baseline and data available from the interim permit program. This number of permitted businesses does not include commercial dog walkers walking less than three dogs per walk.

EXHIBIT 2-5. COMMERCIAL DOG-WALKING REGULATIONS IN THE BAY AREA (NON-FEDERAL LANDS)

JURISDICTION	STATUTE	TOTAL DOGS ALLOWED	TOTAL OFF-LEASH DOGS ALLOWED	INSURANCE REQUIRED?	TRAINING REQUIRED?	PRICE OF PERMIT
San Francisco ¹	San Francisco City and County Code § 3907	8	No Specified Limit	✓	✓	\$250 one-time initial fee; \$100 annual fee ^a
Marin County ²	Marin County Open Space District Code § 02.05.010	6	3	✓	✓	\$150
San Mateo County ³	San Mateo County Ordinances § 6.04.070	No Specified Limit	Not allowed in public by county regulation; only in private or commercially-fenced or enclosed areas	No county permitting requirement ⁴		
East Bay Regional Park District ⁵	East Bay Regional Park District Ordinance 38	6	No Specified Limit	✓	✓	\$350 annual fee
<p>Notes:</p> <p>a. In San Francisco, no permit is required for commercial dog walkers with 3 or fewer dogs. Additionally, no permit is required for commercial dog walkers operating on city sidewalks.</p> <p>b. These City and County regulations to not apply to Federal lands.</p> <p>Sources:</p> <p>¹ City & County Code of San Francisco. Sec. 3907. Accessed on June 24, 2014, at http://www.sfgov2.org/index.aspx?page=3869; City & County of San Francisco. "Application for Commercial Dog Walker Permit," accessed on June 27, 2014, at http://www.sfgov2.org/Modules/ShowDocument.aspx?documentid=1400.</p> <p>² Marin County Code. Sec. 02.05.010. Accessed on June 24, 2014, at http://www.marincountyparks.org/depts/pk/divisions/open-space/main/-/media/Files/Departments/PK/Open%20Space/2014/1PermitCommercialDogWalkerGuidelinesFinal2.pdf</p> <p>³ Animal Legal and Historical Center. County of San Mateo, CA, Ordinances. Accessed on June 24, 2014, at http://www.animallaw.info/local/louiscasanmateo.htm.</p> <p>⁴ Personal communications with the San Mateo County Animal Control and Licensing and the Peninsula Human Society & SPCA on January 13, 2016. While a county-wide permitting requirement does not exist, cities may impose permitting requirements independent of county ordinances. For example, the city of Pacifica maintains a commercial dog walking permit requirement; as of January 2016, the City of Pacifica Finance Department has issued four commercial dog licenses. (Personal communication between NPS and the City of Pacific Finance Department on January 13, 2016).</p> <p>⁵ East Bay Regional Park District. Ordinance 38. Accessed on June 24, 2014, at http://www.ebparks.org/activities/ord38; East Bay Regional Park District. "Permits," accessed on June 27, 2014, on http://www.ebparks.org/activities/permits.</p>						

A 2007 SFSU study (Roberts 2007) of under-represented populations in GGNRA visitation, also revealed that the presence of dogs in a park area was a serious deterrent to visiting those areas for the study populations.⁵² According to a 2008 PRI/SFSU survey (Solop 2010), which included follow up interviews for survey participants who visited GGNRA, participants identified dogs off-leash as the third largest problem associated with visitor experience after litter and lack of available information about the site's fragile habitats. *Overall, 16 percent reported off-leash dogs as representing a moderate or serious problem associated with their park experience.*⁵³

According to the 2002 NAU telephone survey, 52 percent of visitors to GGNRA reported seeing a dog allowed off-leash by another visitor at a GGNRA site. For these visitors, dog walking negatively impacted the GGNRA visitor experience of 22 percent.⁵⁴

These surveys suggest that between 11 percent and 16 percent of visitors to GGNRA report that dog walking negatively impacted their experience at GGNRA. This would equate to approximately 1.6 million to 2.3 million visitors annually.

Park Visitors Currently Displaced Due to Dog Presence

Displaced users include users who would visit the GGNRA but for the presence of dogs. This group differs from the previous user group in that these visitors avoid and do not enter the park, or avoid certain locations within the park; it is, therefore, very difficult to estimate the size of this user group. The 2002 NAU survey did not explicitly ask whether potential visitors avoid GGNRA because of the presence of dogs.

If those who said that they would strongly support further limitations to on-leash dog walking and strongly oppose off-leash dog walking in the GGNRA (19 percent and 36 percent respectively of respondents) specifically avoid the GGNRA due to dog presence, this would equate to a large percentage of residents in this area.⁵⁵ The actual number of residents that avoid the GGNRA due to dog presence, however, is not known.

⁵² Roberts, N.S. 2007. *Visitor/Non-Visitor Use Constraints: Exploring Ethnic Minority Experiences and Perspectives*. Final Report, Golden Gate National Recreation Area, National Park Service. San Francisco State University. March 2007.

⁵³ Solop, F.I. 2010 *Golden Gate Visitor Survey Follow-Up Interviews*. Prepared by Public Research Institute (PRI) and San Francisco State University. April. 125 pp.

⁵⁴ Nearly half (51 percent) of respondents who have seen dogs off-leash in a GGNRA site reported that dogs off-leash had an impact on their experience. Northern Arizona University: The Social Research Laboratory. "Public Opinion Research Telephone Survey Regarding Golden Gate National Recreation Area Pet Management Issues: Technical Report," December 2002.

⁵⁵ The NAU findings are further corroborated by a 2007 SFSU study (Roberts 2007) where focus groups identified "uncontrolled dogs," and "dog feces" left by dog walkers as obstacles to their visiting some GGNRA locations. Collectively, the findings from the 2002 NAU and 2007 SFSU study provide an initial understanding of the potential displacement of visitors due to dog presence. To develop a quantitative estimate of displaced visitors, however, requires additional study that is outside the scope of this effort.

CHAPTER 3 | COST-BENEFIT ANALYSIS OF THE PROPOSED RULE AND ALTERNATIVES

The proposed rule would limit on- and off-leash dog walking within the GGNRA. This section presents analysis of the potential costs and benefits likely to result from the proposed rule and its alternatives. As directed by OMB, this analysis focuses on estimating costs and benefits of the proposed rule, as measured by changes in producer and consumer surplus. The analysis assesses potential costs and benefits to five groups of entities that would likely be affected by the proposed rule:

- Commercial dog walkers;
- Private dog walkers;
- Current park visitors that prefer no dogs;
- Park visitors displaced due to dog presence; and
- NPS.

For each group of potentially affected users, we analyze the effects of the proposed rule and its alternatives over a 20-year study period. This 20-year study period balances the need for capturing the longer-term effects of the proposed rule with the limitations of forecasting future conditions using current data and assumptions. In addition to these groups, some benefits of the rule may be common to all users. These are discussed separately.

3.1 COSTS AND BENEFITS TO COMMERCIAL DOG WALKERS

As discussed in Chapter 2, commercial dog walking activities currently occur in many areas throughout the GGNRA. Elements of the proposed rule that may change the behavior of commercial dog walking activities within the study area include:

- Establishment of a special use permit system for individuals walking between four and six dogs at any one time in the park;
- Prohibition of walking more than six dogs in the park;
- Restriction on walking between four and six dogs to weekdays (Monday through Friday) between 8 AM and 5 PM; and
- Restriction of dog walking activities to areas within designated on-leash areas and under “voice and sight control.”

The following sections describe the potential effects of key elements of the proposed rule on commercial dog walking activities in more detail.

3.1.1 POTENTIAL COSTS TO COMMERCIAL DOG WALKERS

As stated elsewhere in this analysis, we focus on estimating producer and consumer surplus impacts of the rule. Ideally, this analysis would calculate the impact to commercial dog walking operations in terms of a reduction in profit, which is defined as the revenues net of operational costs. Measuring the change in profit would take into account the effects of the reduction in dogs walked on both the companies' revenues (the total amount of money the companies receive for its services), as well as on their operational costs (the total amount it costs the company to conduct its business).

The profit margin for commercial dog walking operations are influenced by many factors, such as the skill of the walker(s), the demand for dog walking in a particular geographic area, the number of dogs walked, whether the dog walker has any employees, the number of walks per week, customer rates, and the price of fuel. Businesses that provide commercial dog walking services often provide a mix of different types of dog walking as well as other related services, including neighborhood dog walking, off-leash dog walking, on-leash dog-walking, private dog walking, pet sitting, pet boarding, and dog training. As a result, returns are likely to vary.

Publically available data on the typical return (profits) for businesses that engage in commercial dog walking within the study area are not available. Absent this data, this analysis reports impacts to these businesses in terms of potential changes in annual revenues. To the extent that the rule reduces operational costs of running the business as well as revenues, presenting impacts in terms of changes in revenues may overstate the financial impact on these businesses (e.g., if a business walks fewer dogs, they may make less money but also spend less money).

Potential Impacts of the Proposed Rule on Operations

Depending on the characteristics of a commercial dog walkers' business, commercial dog walkers may adjust their operations in response to the proposed rule in any number of ways. *In particular, dog walkers that currently walk more than six dogs per visit to GGNRA, and those who offer evening or weekend boarding services that include walks in the GGNRA, may need to change their operations.*⁵⁶ Examples of potential responses of commercial dog walkers walking more than six dogs to the proposed rule may include, but are not necessarily limited to:

1. **Increasing customer prices.** Commercial dog walkers we interviewed indicated that increasing the price charged for each dog walk (rate) would be an action that could be taken in response to the proposed rule.⁵⁷ The feasibility for a commercial dog walker to increase its prices would be expected to vary based on

⁵⁶ Some commercial dog walkers may also experience some changes in the availability and/or mix of on-leash and off-leash dog walking within current locations that they frequent.

⁵⁷ Several dog walkers indicated that they had raised rates in response to the interim permit program, which temporarily established 0061 cap on the number of dogs per walker of six dogs. Price increases cited by commercial dog walkers ranged from \$2 to \$5 per dog per walk, which represents an increase of approximately 10 to 25 percent over existing rates.

a business' existing prices, its history of past price changes,⁵⁸ as well as other market conditions (e.g., rates offered by other dog walkers in same area and the ability of its customers to pay higher costs). In circumstances where commercial dog walkers have previously walked large groups of dogs at one time, increasing rates may be one way of mitigating producer surplus loss by transferring the burden to the consumers.

2. **Increasing the number of walks per day to the GGNRA.**⁵⁹ In order to maintain revenue levels for commercial operations walking more than six dogs at one time, commercial dog walking operations may be able to increase the number of walks they take to GGNRA per day. This response, however, would be limited by the number of walks a dog walker already undertakes each day.⁶⁰ The feasibility of adding an additional walk (or trip) would also depend on the locations of commercial dog walkers' clients; in some cases, it may not be possible to add another trip depending on the time required to drive to client locations to pick up and drop off dogs. In addition, some commercial dog walkers expressed concern about the physical demands of walking dogs three times per day, as compared to two times per day.
3. **Increasing the number of dogs walked.** It is also possible that restrictions on the number of dogs walked per trip could lead to a redistribution of demand from dog walkers who walk many dogs to those who currently (i.e., prior to the interim permit program) walk less than six dogs. However, the extent of any redistribution would depend on a number of site-specific factors, including the physical location of clients whose demand for dog walking would no longer be fulfilled by current dog walkers, as well as the capacity and interest of dog walkers currently walking less than six dogs to accommodate increased demand for dog walking. Because the extent of any redistribution is not known, this analysis does not attempt to quantify this potential response.

⁵⁸ All else being equal, it may be more feasible for a business without a recent history of rate increases to increase its dog walking rates in response to the Proposed Rule. Many commercial dog walkers express concern at client's ability to absorb additional rate increases.

⁵⁹ The above discussion focuses on the potential behavioral responses by dog walkers walking more than six dogs prior to the proposed rule. It is possible that restrictions on the number of dogs walked could also lead to a redistribution of demand from dog walkers who walk many dogs to those who currently walk less than six dogs. If such redistribution occurs, the overall losses in revenues could be lower. However, the extent of any redistribution would depend on a number of site-specific factors, including the physical location of clients whose demand for dog walking would no longer be fulfilled by current dog walkers, as well as the capacity and interest of dog walkers currently walking less than six dogs to accommodate increased demand for dog walking. Because the extent of any redistribution is not known, this analysis does not attempt to quantify this potential response.

⁶⁰ For example, commercial dog walkers that currently (i.e., prior to the interim permit program) undertake three walks per day (morning, afternoon, and evening) are unlikely to be able to add a fourth walk within normal business hours (i.e., weekdays between 8 a.m. and to 5 p.m.). In contrast, commercial dog walkers that currently undertake two walks per day (morning and afternoon), which consist of the majority of commercial dog walkers according to data from the interim permit program, may be able to add a third walk within normal business hours.

4. **Walking dogs at an alternate (non-GGNRA) location.** Some dog walkers may be able to replace GGNRA walks with walks at alternative locations. This response, however, would depend on the location of a business' dog walking services. For example, commercial dog walkers in San Francisco County indicate that, for businesses whose clients are located in North and Northeast portions of the City, near Crissy Field (e.g., North Beach, Cow Hollow and Pacific Heights), alternative off-leash dog walking parks are limited. In contrast, commercial dog walkers who operate in the vicinity of Fort Funston identified possible alternatives such as Stern Grove and McLaren Park.^{61,62}
5. **Adding employees.** Another option for dog walkers would be to add additional dog walkers (employees). Such a response may allow a business to maintain the same level of revenue, although adding additional staff also generates a new stream of labor and fuel costs. With 77 percent of GGNRA commercial dog walkers operating as single dog walkers (i.e., sole proprietors) in 2015, it is possible that these businesses could expand to include more employees depending on prevailing market conditions.
6. **Diversifying services.** As previously noted, the services provided by businesses engaged in commercial dog walking activities varies significantly from exclusively offering dog walking services to other related services, such as dog training, overnight board and care, and private dog walking. However, offering new services is not without cost. Businesses may also incur costs during the time required to find and develop a sufficient client base for any such alternate services.

Quantifying Impacts

As described in the examples above, there are many possible changes or combinations of changes commercial dog walkers walking more than six dogs may make to their operations in response to the proposed rule. Ideally, this analysis would develop and use an economic model of commercial dog walking in the San Francisco Bay Area region to predict how commercial dog walking activities would change as the result of the

⁶¹ The non-GGNRA off-leash area closest to Crissy Field is Alta Plaza Park, which is run by the San Francisco Recreation and Parks Department. While off-leash dog walking is technically allowed at Alta Plaza Park, the park is geographically small (0.5 acres), occurs on a sloped hill and is surrounded on all sides by streets. According to discussions with San Francisco commercial dog walkers, walking multiple dogs off-leash at one time at Alta Plaza Park is not practical and, more importantly, could be unsafe for both dogs and other park users. However, the proposed rule would continue to allow substantial off-leash use at Crissy Field, and thus it is unclear to what extent dog walkers would alter their behaviors from this site.

⁶² According to discussions with commercial dog walkers in San Francisco County, alternative non-GGNRA off-leash dog walking locations in other parts of the City may exist. Alternative locations for off-leash dog walking identified during discussions with commercial dog walkers include Stern Grove/Pine Lake, McLaren Park, Glen Canyon Park and Bernal Heights. To the extent that commercial dog walkers shift all or a portion of their dog walking services to these locations, producer surpluses may be lower, depending on the added cost (i.e., fuel and time) of traveling to these alternate locations as well as the cost of maintaining permits with both NPS and the City of San Francisco. According to discussions with commercial dog walkers, the quality of non-GGNRA off-leash dog walking areas is lower as compared to GGNRA. Of the non-GGNRA areas cited, McLaren Park is one of the larger non-GGNRA off-leash dog areas (approximately 60 acres).

proposed rule. However, because primary research is beyond the scope of this effort, this analysis draws upon existing site-specific data and discussions with commercial dog walkers operating in GGNRA to develop an estimate of the potential upper bound impacts to commercial dog walking from the proposed rule requirements. Specifically, this analysis employs the following four step process to estimate the potential costs to commercial dog walkers due to the six dog limit:⁶³

Step 1: Estimate the number of commercial dog walkers that will be operating in the GGNRA;

Step 2: Estimate the number of commercial dog walkers that walk more than six dogs at any one time;

Step 3: Estimate the number of dogs currently walked by commercial businesses in excess of the proposed rule's six dog limitation; and

Step 4: To bound the potential high-end costs of the six dog limit, estimate revenue under two scenarios. As an upper bound, we estimate the potential revenue losses associated with dogs that would have been walked in exceedance of the six-dog limit imposed by the proposed rule. In an alternate scenario of the potential upper bound costs of the six dog limit, we then estimate the potential revenue losses assuming that some revenue losses could be offset by increases in consumer prices. We also discuss the potential for redistribution of demand from those walking large numbers of dogs to those walking less than six dogs to reduce the estimated costs of the six dog limit.

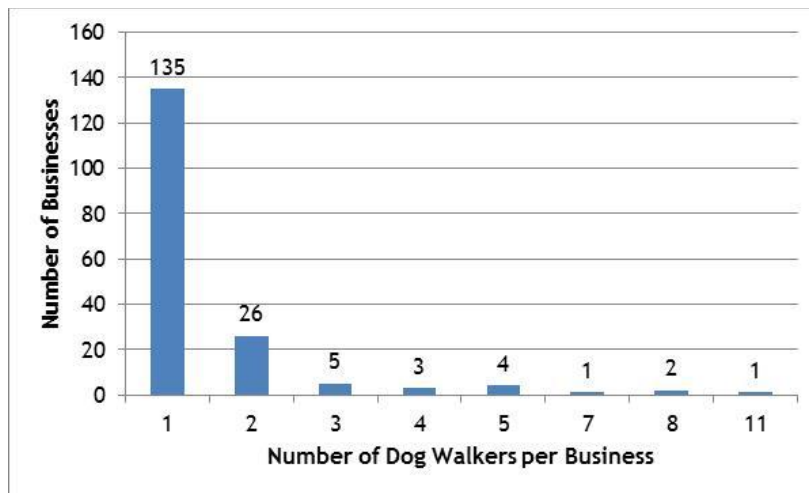
In the following sections, we describe each step in more detail.

Step 1: Estimate the number of commercial dog walkers operating in the GGNRA. As discussed in Chapter 2, the total number of entities (i.e., individuals and businesses) engaged in commercial dog walking activities at the GGNRA is uncertain. NPS' interim commercial dog walking permit requirement provides the most recent estimate available of the number of entities engaged in commercial dog walking in the GGNRA. Between June 1, 2014, when NPS first began issuing permits, and September 9, 2015, 177 commercial dog walking businesses, representing 268 dog walkers, have applied for permits.⁶⁴ As shown in Exhibit 3-1 below, 77 percent of these businesses (135 businesses) participating in NPS' interim permit program are sole proprietorships, with only one dog walker. These permit numbers do not include dog walkers who walk three or fewer dogs per walk, as such operators are not required to obtain a permit for dog walking under the interim permit program.

⁶³ The permit costs associated with this rule, which affects commercial dog walkers walking four or more dogs, is estimated in the subsequent section.

⁶⁴ Personal communication with NPS on September 9, 2015.

EXHIBIT 3-1. NUMBER OF EMPLOYEES BY COMMERCIAL DOG WALKING BUSINESSES PARTICIPATING IN THE NPS GGNRA INTERIM PERMIT PROGRAM AS OF SEPTEMBER 9, 2015



Source: NPS. Interim Permit Program Participation Data. As of September 9, 2015.

Step 2: Number of Commercial Dog Walkers that Walk More than Six Dogs per Trip.

The six-dog limit in the proposed rule would affect the behavior of businesses that walk more than six dogs per trip. The number of dogs walked by commercial dog walkers operating within GGNRA prior to the 2014 interim permit program, however, is not known; such data were not then regularly collected by NPS or any of the local authorities that manage and oversee commercial dog walking operations in the San Francisco Bay Region.

A search of the literature identified only IEc 2011 as having examined the number of dogs per dog walker within the GGNRA; this study included an on-site survey at Fort Funston.⁶⁵ This study classified the number of dogs observed per person at Fort Funston on weekdays. The 2011 study found that approximately 38 percent of the dogs observed on weekdays at Fort Funston in groups of three or more (considered likely to be commercial) were in groups of more than six dogs.⁶⁶ The distribution of the dog groups by size are presented in Exhibit 3-2.

In the absence of other site- specific data on the number of dogs walked per dog walker, this analysis uses the distribution of dog group sizes at Fort Funston as a proxy for all commercial dog walking operations in the GGNRA. Thus, of the 268 commercial dog walkers estimated to operate in the GGNRA, we assume that 140 dog walkers (52

⁶⁵ Industrial Economics, Inc. "Assessment of Visitor Activities at Six Sites Within Golden Gate National Recreation Area." December 20, 2011.

⁶⁶ Estimates conservatively assume that dog groups with three or more dogs represent commercial dog walking activities; that is, estimates exclude commercial operations which walk dogs one at a time or in groups consisting of no more than two dogs.

percent) typically walk dogs in groups larger than six. Of these, 128 (48 percent) are assumed to walk between four and six dogs at once, 73 (52 percent) are assumed to walk dogs in groups of seven to eight dogs, while only two dog walkers walk 13 to 14 dogs (less than one percent). Dog walkers who walk fewer than six dogs at a time are not anticipated to incur cost beyond those associated with permitting.

Because NPS has observed that Fort Funston is among the most popular locations for commercial dog walking activities in GGNRA, relying on the Fort Funston distribution for all locations may overstate the number of dog walkers that walk more than six dogs per trip. According to data from the interim permit program, Fort Funston accounts for nearly half (i.e., 42 percent) of the total number of commercial dog walking trips occurring across GGNRA.⁶⁷ Nonetheless, to the extent that the dog group size of commercial dog walking activities are distributed differently in other parts of the GGNRA as compared to Fort Funston (e.g., some GGNRA locations never have visits from dog groups larger than eight), this analysis may over- or under-state revenue changes caused by the rule.

Step 3: Number of Dogs Potentially Not Walked due to the Proposed Rule.

Next, we estimate the number of dogs currently walked above the six dog limit per year prior the interim permit program. Conservatively (i.e., more likely to overstate than understate the number of dogs walked in groups larger than six) assuming dog walkers walk 9.65 times per week (based on interim permit program data), 50 weeks per year, we estimate 186,300 dogs are walked in groups larger than six dogs each year at GGNRA (Exhibit 3-3).⁶⁸

⁶⁷ According to data from the interim permit program, Fort Funston is the most popular location for commercial dog walking accounting for 41 percent of all commercial dog walking trips, followed by Crissy Field at 20 percent and the Presidio at 18 percent. Alta, Rodeo Beach, Marin collectively account for nine percent. Commercial dog walking activities is lowest at Baker Beach with seven percent, Ocean Beach at four percent and Fort Mason at one percent. Distributional information on the number of dogs walked at these other locations, however, is not available.

⁶⁸ GGNRA Interim Permit Program Data, provided by NPS on November 5, 2015.

EXHIBIT 3-2. NUMBER OF DOGS BY GROUP SIZE ON WEEKDAYS AT FORT FUNSTON (2011)^a AND ESTIMATED AFFECTED NUMBER OF GGNRA COMMERCIAL DOG WALKERS BY GROUP SIZE

SIZE OF COMMERCIAL DOG GROUP ^b	PERCENT OF COMMERCIAL GROUPS OBSERVED ^c	ESTIMATED NUMBER OF AFFECTED GGNRA COMMERCIAL DOG WALKERS ^d
4 Dogs	11.5%	31
5 Dogs	17.7%	47
6 Dogs	18.5%	50
7 Dogs ^e	15.6%	42
8 Dogs	11.5%	31
9 Dogs	5.8%	15
10 Dogs	12.3%	33
11 dogs	4.5%	12
12 dogs	1.6%	4
13 dogs	0.4%	1
14 dogs	0.4%	1
Commercial operations walking 7 or more dogs at one time	52.3%	140
Total number of affected commercial dog walkers	100.0%	268

Notes: Totals may not sum due to rounding.

a Weekday observations were from August 18-19, 2011 at Fort Funston.

b Estimates exclude dog groups consisting of one, two and three dogs.

c This column presents the percent of all dog groups observed in each dog group size (IEc 2011) who walked four or more dogs.

d This column presents the estimated current number of GGNRA commercial dog walkers utilizing GGNRA by dog group size, based on the number of interim permit applicants. For example, 17.7% of the estimated 268 commercial dog walkers walking more than four dogs in GGNRA (47dog walkers) walk five dogs at a time. Numbers are rounded. To the extent that large or small-group commercial dog walking activities are distributed differently from Fort Funston in other parts of the GGNRA (e.g., some GGNRA locations never have visits from dog groups larger than ten), this analysis may over- or under-state costs. Anecdotal observations suggest that fewer large dog groups (>ten) may occur at sites other than Fort Funston, which would result in our analysis overestimating the number of dogs walkers walking that many dogs in the GGNRA.

e Based on the data available on commercial dog walking activity at Fort Funston, seven dogs is the median commercial dog size group for the estimated 268 affected commercial dog walkers walking between four and 14 dogs in one group pre-interim regulation.

Sources: IEc. 2011. "Assessment of Visitor Activities at Six Sites Within Golden Gate National Recreation Area." Prepared for NPS, GGNRA. December 20. p.15; Written communication with NPS, September 9, 2015.

EXHIBIT 3-3. ESTIMATED BASELINE NUMBER OF DOGS WALKED ABOVE SIX DOGS PER YEAR

[A]	[B] = [A] - 6	[C]	[D] = [B] * [C]	[E]	[F] = [D] * [E]
SIZE OF DOG GROUP ²	NUMBER OF DOGS OVER SIX DOG LIMIT PER WALK	ESTIMATED NUMBER OF WALKS PER YEAR PER WALKER ¹	NUMBER OF DOGS OVER SIX WALKED PER YEAR PER WALKER	NUMBER OF COMMERCIAL DOG WALKERS UTILIZING GGNRA (2015) ²	NUMBER OF DOGS ABOVE SIX WALKED PER YEAR
6 or fewer Dogs	0	482.5	0	0	0
7 Dogs	1	482.5	482.5	42	20,200
8 Dogs	2	482.5	965	31	29,800
9 Dogs	3	482.5	1,448	15	22,300
10 Dogs	4	482.5	1,930	33	63,900
11 dogs	5	482.5	2,413	12	29,200
12 dogs	6	482.5	2,895	4	12,800
13 dogs	7	482.5	3,378	1	3,700
14 dogs	8	482.5	3,860	1	4,300
Total				140	186,300

Notes:

¹ Based on recent data from the interim permit program, we assume 9.65 walks per week and 50 weeks per year (i.e., 9.65 * 50). We assume that vast majority of commercial dog walking businesses take two weeks per year for holidays / vacations / illness / other unspecified personal reasons.

² See previous exhibit. To the extent that large or small-group commercial dog walking activities are distributed differently from Fort Funston in other parts of the GGNRA (e.g., some GGNRA locations never have visits from dog groups larger than ten), this analysis may over- or under-state costs.

³ Note that these estimates assume commercial dog walkers operate at full capacity. To the extent that operators do not always take the maximum number of dogs in their group, these estimates will overstate the number of dog walks taken.

Sources: IEc Analysis; NPS Interim Permit Program; Industrial Economics, Inc. "Assessment of Visitor Activities at Six Sites Within Golden Gate National Recreation Area." December 20, 2011; GGNRA Interim Permit Program Data, provided by NPS on November 5, 2015.

Note: Totals may not sum due to rounding.

Step 4: Bounding the Potential Costs to Commercial Dog Walkers Due to Six Dog Limit

As previously discussed, it is not possible to predict with certainty how commercial operations that walk more than six dogs at a time will change their behavior in response to the proposed rule. Approximately 140 commercial dog walkers walked more than six dogs per walk prior to the interim permit program, and as such, would need to alter their

behavior to accommodate the six dog limit imposed by the rule. In order to provide an estimate of potential upper bound impacts to the commercial dog walkers from the proposed rule's limitation on the number of dogs per trip, this analysis estimates the total foregone revenue that would be associated with dog walks that commercial dog walkers could not take due to the rule without altering their behavior.⁶⁹ Assuming such an inflexible response is likely to overstate costs. Under this scenario, the lost revenues to commercial dog walkers are equal to the estimated number of dogs currently walked over the six dog limit (Step 2) multiplied by an estimate of the existing price per dog per walk (\$20 per dog per walk).

Exhibit 3-4 presents the estimated impacts. As previously discussed, the number of dogs walked per person per trip is uncertain. The only data available on the size of dog groups is from a 2011 study conducted at Fort Funston. According to this study, approximately 38 percent of dogs at Fort Funston in groups of three or more (considered likely to be commercial) were observed in groups with more than six dogs. We rely on the 2011 Fort Funston data to estimate the number of dog walking businesses that likely walk more than six dogs per walk in GGNRA. This assumption, however, likely overstates the number of dog walking businesses that walk more than six dogs. According to discussions with park staff, Fort Funston is one of the more popular locations in GGNRA, with a sub-population of commercial dog walkers that tend to walk dogs in larger group sizes. Furthermore, according to data from the interim permit program, Fort Funston accounts for less than half (i.e., 42 percent) of the total number of commercial dog walking trips occurring across GGNRA. To the extent that dog group size of commercial dog walking activities are distributed differently in other parts of the GGNRA as compared to Fort Funston (e.g., some GGNRA locations may never have visits from dog groups larger than either), this analysis may over- or under-state costs.

As part of this upper bound limit, we also considered whether, rather than forego revenues or change other aspects of their businesses, the estimated 140 commercial dog walkers who currently walk more than six dogs at a time could recoup all or some of their lost revenues by increasing prices. The feasibility of price increases, however, naturally varies based on the baseline number of dogs walked by dog walkers. *Based on our interviews with commercial dog walkers and feedback from the interim permit program, we find that an offsetting price increase of \$3.33 to \$6.67 per dog walk is likely to be feasible for affected commercial dog walkers who currently walk seven to eight dogs per trip.* This group is estimated to include approximately 73 commercial dog walkers, or more than half of the estimated 140 commercial dog walkers estimated to be affected by the proposed rule.

However, we found that the price increase necessary to completely recoup lost income for dog walkers walking more than eight dogs is not likely to be feasible (increases would range from \$10 to \$27 per walk, depending on the number of dogs currently walked). Assuming a base price of \$20 per walk, this increase would range from 50 percent for

⁶⁹ Such businesses may have recently raised rates or may already be taking the maximum number of trips per day based on the locations of his/her customers and the GGNRA site currently relied upon.

dog walkers who currently walk nine dogs (approximately six percent of all GGNRA commercial dog walkers, or 15 dog walkers) to 133 percent for dog walkers who currently walk 14 dogs per walk (less than one percent of all GGNRA commercial dog walkers, or one dog walker). However, we also consider an option under which a price increase of up to \$6.67 would be feasible across all dog walkers where needed to offset revenue losses, i.e., a price increase of \$3.33 would be implemented for dog walkers walking seven dogs and a price increase of \$6.67 would be implemented for dog walkers walking more than seven dogs at one time; based on this assumption, the upper bound estimate of the total annual revenue losses to commercial dog walkers associated with the six dog limit would be approximately \$1.4 million. Under this scenario, however, these price impacts would be borne by consumers rather than commercial dog walkers. We also note that the resulting differential higher prices may discourage some customers from utilizing the larger dog walking groups and could have other impacts on demand that are not captured here.

Besides price increases, other options for commercial dog walkers walking seven or more dogs would include changing the location of their activities to other areas outside of GGNRA, changing the number of walks they take each day, or increasing staff to distribute dogs walked among more people. These adjustments would also reduce revenue losses. Some combination of increased prices and other changes in operations would reduce estimated revenue losses.⁷⁰

Permitting Costs

Permit fees represent a cost to commercial dog walkers, although the funds are transferred to NPS. These costs would be applied to commercial dog walkers walking four or more dogs at a time. While the potential fee to obtain a permit is uncertain at this time, NPS staff indicates that permit costs under the proposed rule are likely to be similar to the annual permit cost under the current interim permit program, which consists of a \$75 application fee and a \$300 fee per individual dog walker.⁷¹ Assuming 177 dog walking businesses and 268 individual dog walkers walk four or more dogs, annualized costs of the proposed permit program are forecast to be \$93,675 (2015 dollars) annually, using either a seven or three percent discount rate.

In addition to the cost of the permit itself, the proposed rule also requires for those walking four or more dogs at a time:

⁷⁰ We note that it is possible that restrictions on the number of dogs walked could also lead to a redistribution of demand from dog walkers who walk more than six dogs to those who currently walk less than six dogs. If such redistribution occurs, the overall losses in revenues could be lower. However, the extent of any redistribution would depend on a number of site-specific factors, including the physical location of clients whose demand for dog walking would no longer be fulfilled by current dog walkers, as well as the capacity and interest of dog walkers currently walking less than six dogs to accommodate increased demand for dog walking. Because the extent of any redistribution is not known, this analysis does not attempt to quantify this potential response.

⁷¹ Permit fees under the interim permit program are based on NPS' estimate of NPS' costs to implement the interim permit program. To the extent that implementation of the Proposed Rule is greater, or changes over time, NPS may adjust permit fees accordingly. Email communication with NPS on February 24, 2015.

- Evidence of liability insurance; and
- Evidence of dog-handling training approved by the respective county in which the dog walker operates.

As baseline conditions assume compliance with existing regulations, liability insurance and dog handling training are not expected to change commercial dog walking operations as both elements are already required under existing dog walking regulations in San Francisco and Marin counties.

Discussions with commercial dog walkers indicate that adding NPS as an additional insured (in response to the interim permit program) resulted in an annual cost of \$25 per business. Assuming these costs are representative of the incremental cost to add NPS as an additional insured under existing liability insurance policies for each commercial dog walking business, total annual costs for all businesses walking more than four dogs at time would be \$4,425 (i.e., \$25 per business multiplied by 177 businesses). When these increased insurance costs are added to the estimated annual permit costs, the total annualized costs of the proposed permit program are forecast to be \$98,100 (2015 dollars), using either a seven or three percent discount rate.

EXHIBIT 3-4. SUMMARY AND COMPARISON OF POTENTIAL ANNUAL COSTS TO COMMERCIAL DOG WALKERS DUE TO THE PROPOSED RULE

	PRE-RULE (BASELINE) SIZE OF DOG GROUP								SUBTOTAL
	7 DOGS	8 DOGS	9 DOGS	10 DOGS	11 DOGS	12 DOGS	13 DOGS	14 DOGS	
Estimated number of commercial dog walkers	41.9	30.9	15.4	33.1	12.1	4.4	1.1	1.1	140.1
Pre-Rule (Baseline)									
Dogs walked per year per dog walker	3,378	3,860	4,343	4,825	5,308	5,790	6,273	6,755	--
Cost per dog per walk ¹	\$20.00	\$20.00	\$20.00	\$20.00	\$20.00	\$20.00	\$20.00	\$20.00	--
Revenues per year per dog walker	\$67,600	\$77,200	\$86,900	\$96,500	\$106,200	\$115,800	\$125,500	\$135,100	--
Revenues per year for all dog walkers operating within dog group size	\$2,831,000	\$2,384,000	\$1,341,000	\$3,192,800	\$1,287,800	\$510,900	\$138,400	\$149,000	\$11,834,800
Post-Rule Upper Bound Scenario 1 - Foregone Revenue Losses²									
Dogs per walk	6	6	6	6	6	6	6	6	--
Dogs walked per year per dog walker	2,895	2,895	2,895	2,895	2,895	2,895	2,895	2,895	--
Cost per dog per walk	\$20.00	\$20.00	\$20.00	\$20.00	\$20.00	\$20.00	\$20.00	\$20.00	--
Revenues per year per dog walker	\$57,900	\$57,900	\$57,900	\$57,900	\$57,900	\$57,900	\$57,900	\$57,900	--
Change in annual revenues per dog walker	-\$9,650	-\$19,300	-\$28,950	-\$38,600	-\$48,250	-\$57,900	-\$67,550	-\$77,200	--
% Revenue Change	-14%	-25%	-33%	-40%	-45%	-50%	-54%	-57%	--
Estimated total revenue losses for commercial dog walkers in group	-\$404,400	-\$596,000	-\$447,000	-\$1,277,100	-\$585,400	-\$255,400	-\$74,500	-\$85,100	-\$3,725,000

	PRE-RULE (BASELINE) SIZE OF DOG GROUP								SUBTOTAL
	7 DOGS	8 DOGS	9 DOGS	10 DOGS	11 DOGS	12 DOGS	13 DOGS	14 DOGS	
Post-Rule - Price Increase Required to Offset Revenue Losses Due to Six Dog Limit^{2,3}									
Revenue loss change per walk	\$3.33	\$6.67	\$10.00	\$13.33	\$16.67	\$20.00	\$23.33	\$26.67	--
Current price per dog per walk ¹	\$20.00	\$20.00	\$20.00	\$20.00	\$20.00	\$20.00	\$20.00	\$20.00	--
Post-rule price required to offset revenue losses due to six dog limit	\$23.33	\$26.67	\$30.00	\$33.33	\$36.67	\$40.00	\$43.33	\$46.67	--
Percent price increase per large dog groups walked to recoup decreased revenue	17%	33%	50%	67%	83%	100%	117%	133%	--
Post-Rule Upper Bound Scenario 1 - Price Increase Up to \$6.67 per dog per walk^{2,3}									
Dogs per walk	6	6	6	6	6	6	6	6	--
Dogs walked per year per dog walker	2,895	2,895	2,895	2,895	2,895	2,895	2,895	2,895	--
Cost per dog per walk	\$23.33	\$26.67	\$26.67	\$26.67	\$26.67	\$26.67	\$26.67	\$26.67	--
Revenues per year per dog walker	\$0	\$77,200	\$77,200	\$77,200	\$77,200	\$77,200	\$77,200	\$77,200	--
Change in annual revenues per dog walker	\$0	\$0	-\$9,650	-\$19,300	-\$28,950	-\$38,600	-\$48,250	-\$57,900	--
% Revenue Change	--	--	-11%	-20%	-27%	-33%	-38%	-4%	--
Estimated total revenue losses for commercial dog walkers in group	--	--	-\$149,000	-\$638,600	-\$351,200	-\$170,300	-\$53,200	-\$63,900	-\$1,426,100

Source: IEC Analysis.

Note: Totals may not sum due to rounding.

¹ Assumes commercial dog walkers walk 50 weeks per year. Based on the interim permit program, this analysis assumes that commercial dog walkers operate at a weekly walk rate of 9.65 walks per week per dog walker.

² Revenue impacts could be significantly lower if businesses are able to adjust pricing, the number of walks, walking destination, and/or the number of dog walkers used. In addition, we note that reporting potential revenues changes further overstates the costs of the proposed rule because these losses are not net of the costs of providing the commercial dog walking services; however, data on average profits for commercial dog walking businesses in the study area are not available.

³ Based on interviews with commercial dog walkers. If the current dog walk prices for dog walkers are actually higher than \$20 under the baseline, the increase in price needed to recoup lost revenues would represent a smaller percent increase; for example, if current prices for a dog walk are \$25, the revenue losses would require a 13 percent increase for walkers who walked 7 dogs prior to the rule.

Summary of Costs to Commercial Dog Walkers

Exhibits 3-5 and 3-6 present estimates of the annualized impacts of the proposed rule related to changes in commercial dog walking. These estimates assume a 20-year study period, using three and seven percent discount rates per OMB guidance.^{72,73}

Based on limited data, an estimated 140 of the 268 commercial dog walkers walking more than six dogs (who had been operating in GGNRA prior to the interim permit program) would primarily be affected by the proposed rule. Specifically, it is anticipated that the estimated 128 commercial dog walkers walking six dogs or fewer are unlikely to be required to change their operations or incur additional costs associated with the proposed rule, except for minor costs associated with permitting. Furthermore, we assume that commercial dog walkers who currently walk more dogs than six dogs at a time (the maximum that would be allowed under the rule per person) would either lose revenues or need to make adjustments to their operations (e.g., pricing, number of walks, location of walks, number of dog walkers, etc.), and that these adjustments would result in costs. Costs may be minor for those walking seven to eight dogs since feasible price increases could offset potential revenue losses. Additionally, more than half of the dog walkers who walk more than six dogs walk dogs in groups of seven or eight.

Effects are not expected to be uniform across dog walking operations, and would depend on the specifics of the individual operations, including the number of dogs walked per trip, services offered (e.g., weekend boarding), specific requirements of the park units currently frequented, and the availability of substitute locations. Those walkers currently walking more than eight dogs per visit to GGNRA, with few substitute locations nearby, infeasible price increases to recoup revenue losses, and those who offer weekend boarding services that include walks in the GGNRA may be most affected by the rule.

Price increases effectively transfer some impacts of the rule to consumers. By assuming that a price increase of up to \$6.67 would be feasible and would be implemented across all dog walkers where needed to offset revenue losses, i.e., a price increase of \$3.33 would be implemented for dog walkers walking seven dogs and a price increase of \$6.67 would be implemented for all other dog walkers walking more than eight dogs at a time, the upper bound estimate of the total annual revenue losses to commercial dog walkers associated with the six dog limit would be approximately \$1.4 million. Under this scenario, however, these price impacts would be borne by consumers rather than dog walkers. We also note that the resulting differential higher prices may discourage customers some from utilizing the larger dog walking groups and could have other impacts on demand that are not captured here.⁷⁴ As presented in Exhibit 3-6, if the

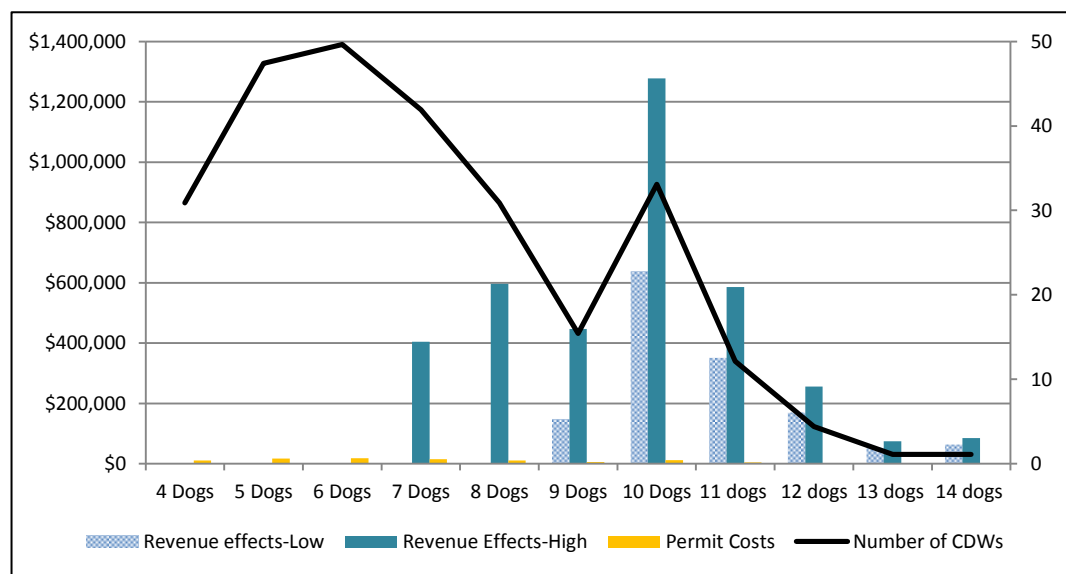
⁷² Annualized values convert the present value of future costs or benefits into equal annual payments akin to annual payments on a fixed rate mortgage.

⁷³ U.S. Office of Management and Budget, "Circular A-4," September 17, 2003, available at <http://www.whitehouse.gov/omb/circulars/a004/a-4.pdf>.

⁷⁴ It is possible that restrictions on the number of dogs walked could also lead to a redistribution of demand from dog walkers who walk many dogs to those who currently walk less than six dogs. If such redistribution occurs, the overall losses in revenues could be lower. However, the extent of any redistribution would depend on a number of site-specific factors,

estimated 140 commercial dog walkers who currently walk more than six dogs at a time increase prices by up to \$6.67 per dog or forgo revenues and associated profits for the dogs they could not walk, an annual upper bound limit of revenue losses would total \$1.4 million to \$3.7 million across all businesses. This estimate of revenue losses is conservative (i.e., is more likely to overstate than understate costs) because it does not net out operational costs and assumes that reduced demand is not redistributed to other operators with more capacity.⁷⁵ An additional \$0.1 million in permitting costs would also be incurred by all commercial dog walkers walking more than four dogs. Therefore, the total annual upper bound limit of projected costs associated with the implementation of this rule is likely to range from \$1.5 million to \$3.8 million.

EXHIBIT 3-5. ESTIMATED COSTS OF THE PROPOSED RULE RELATED TO COMMERCIAL DOG WALKING, BY SIZE OF DOG WALKING GROUP (2015 DOLLARS)



Note: “Revenue effects-low” represents the scenario in which dog walkers who walk groups of seven dogs increase prices by \$3.33 per walk taken, and dog walkers who walk groups of eight or more dogs increase prices by \$6.67 per walk taken. “Revenue effects-high” represents the scenario in which dog walkers who walk groups of seven or more dogs increase prices to recoup all potential revenue losses, up to 133% increase.

including the physical location of clients whose demand for dog walking would no longer be fulfilled by current dog walkers, as well as the capacity and interest of dog walkers currently walking less than six dogs to accommodate increased demand for dog walking. Because the extent of any redistribution is not known, this analysis does not attempt to quantify this potential response.

⁷⁵ To quantify the revenue effect of a potential redistribution of dog walking services to dog walkers walking less than six dogs prior to the interim permit program would require primary research that is beyond the scope of this effort.

EXHIBIT 3-6. ESTIMATED TOTAL COSTS OF THE PROPOSED RULE RELATED TO COMMERCIAL DOG WALKING, ANNUALIZED, 2016 TO 2035 (2015 DOLLARS)

TYPE OF COST	PRESENT VALUE		ANNUALIZED	
	3%	7%	3%	7%
Revenue losses	\$21,853,800 to \$57,080,800	\$16,166,100 to \$42,224,900	\$1,426,100 to \$3,725,000	\$1,426,100 to \$3,725,000
Permitting costs	\$1,503,300	\$1,112,000	\$98,100	\$98,100
Total¹	\$23,357,100 to \$58,584,100	\$17,278,100 to \$43,336,900	\$1,524,200 to \$3,823,100	\$1,524,200 to \$3,823,100

Source: IEc analysis.

Note: Totals may not sum due to exhibit rounding. Annualized costs are not different using a 3 versus 7 percent discount rate because the payments are equally distributed over time.

¹ As noted in the text, this total does not assume any market adjustments, such as changes in operations, are made to offset current revenues. As such, it represents an upper bound estimate of potential impacts.

Commercial dog walking at the GGNRA presents a complex management issue. While this analysis focuses on the potential costs associated with the permit program and the restriction on number of dogs walked at one time for commercial purposes, other potential costs that could not be reasonably quantified include:

- Commercial dog walkers express concern that overcrowding within designated on-leash and “voice and sight control” areas has the potential to increase “uncontrolled” behaviors, and the ability of dog walkers to actively mitigate such interactions by moving dogs to other areas within the park is reduced.
- Commercial dog walkers may incur additional losses in revenue to the extent that the dog walker provides commercial dog walking services for more than three dogs on weekends. Limited data from the interim permit program and interviews with commercial dog walkers suggest that dog walkers walk less than one walk per weekend in GGNRA on average. While the data on the number of dogs walked at these times is not available, the relative infrequency of these walks suggests the number of affected dog walkers would be low in this scenario.⁷⁶
- Commercial dog walkers may incur additional losses in revenue as a result of a loss of flexibility to add additional dogs to existing dog walking schedules based on unscheduled client demand or from overnight dog boarding services.^{77,78}

⁷⁶ Some data on weekend use of GGNRA for commercial dog walking are available from the interim permit program. Self-reported data from the interim permit program suggest as many as 126 commercial dog walking trips to GGNRA locations on the weekends, equivalent to approximately five percent of the estimated weekly number of dog walking trips per year (or 2,510). Interviews with commercial dog walkers indicate that commercial dog walking on the weekends is infrequent, limited to dog walking services provided to clients for vacations or during holidays. More importantly, commercial dog walker interviews suggested that the number of dogs walked during weekends typically involves dog group sizes of less than three; in which case, the proposed rule would not result in any changes to weekend commercial dog walking activities.

⁷⁷ Some commercial dog walkers offer overnight boarding services as a secondary revenue stream. The ability to offer to such services, however, may be reduced by the six dog limitation as businesses may not be able to offer board and care services because they cannot add such dogs if their daily dog walking schedule is already full.

3.1.2 POTENTIAL BENEFITS TO COMMERCIAL DOG WALKERS

The proposed rule, and particularly the element limiting the number of dogs per trip to no more than six at any one time, is expected to result in a reduction in the total number of dogs using the park at one time as well as the number of dog walkers operating with large dog group sizes. Such a limitation may provide benefits to commercial dog walkers by reducing the potential for conflicts with other park users with and without dogs.

According to discussions with commercial dog walkers, individuals walking more than ten dogs at one time routinely occurred in limited locations.

Some professionals consider walking large numbers of dogs at one time as potentially dangerous both for other park users and the dogs themselves. Fewer dogs may result in fewer conflicts which should improve the quality of dog walking experiences at GGNRA for both commercial dog walkers and the dogs they walk. Feedback received by park permitting staff under the interim permit program from commercial dog walkers affirm such potential benefits; limiting the number of dogs to no more than six has led to increased control of dogs, reduced risk of negative interactions with dogs and humans and an overall better environment for dog walkers.⁷⁹

3.2 COSTS AND BENEFITS TO PRIVATE DOG WALKERS

As discussed in Chapter 2, both on- and off-leash dog walking by private citizens is a popular activity throughout the GGNRA. Changes in the rules governing whether dogs can be walked off-leash at GGNRA may impact the utility, or satisfaction, that these private dog walkers get from visiting the park, positively or negatively. The rules governing dog walking may also influence visitor decisions to visit or not visit the park.

To estimate impacts of the proposed rule on private dog walkers, we need to understand (1) how the proposed rule will change the experience of private dog walkers to the park, (2) how many private dog walkers will be affected by these changes; and (3) and how private dog walkers value those changes.

3.2.1 EXPECTED CHANGES IN PRIVATE DOG WALKER EXPERIENCE

Because the proposed rule will not prohibit dog walking at GGNRA, but rather may restrict opportunities for dog walking activities in some areas, behavioral responses of private dog walkers may range considerably depending on the preferences of individual dog walkers at specific locations. For example, depending on how constrained off-leash dog walking opportunities at GGNRA are under the proposed rule at a particular site and the particular individual, a private dog walker may decide to (1) continue to walk his/her dog(s) on or off-leash within the GGNRA at the same locations as before the rule, but within designated GGNRA areas; (2) walk his/her dog(s) within GGNRA in new areas that may require more travel time; or (3) alter their dog walking behaviors to walk their dog in areas outside the GGNRA, which may or may not have similar attributes and may

⁷⁸ Some commercial dog walkers also noted that the six dog limitation will also reduce the ability for commercial dog walkers to walk their own dogs, a practice relatively common in the baseline.

⁷⁹ Written communication with NPS, November 2, 2015.

require more travel time. The welfare impacts associated with each decision, measured in terms of consumer surplus changes, would vary depending on how each private dog walker values his or her first choice dog walking experience and available alternatives.

To collect current and detailed information regarding visitor use of the park by dog owners, NPS conducted a survey in 2012 to measure customer satisfaction related to dog walking at GGNRA locations. This survey, GGNRA Dog Walking Satisfaction Visitor Study, evaluated the perception of and satisfaction with the current on and off-leash dog walking policies, and potential for redistribution of use based on access changes resulting from implementation of the plan/SEIS.⁸⁰ Of the approximately 7,000 individuals contacted, only 897 responded to the survey. Of the dog walkers that responded to the survey, 431 individuals indicated that they were “not at all satisfied,” “slightly satisfied,” or “moderately satisfied,” with on-leash dog walking opportunities at the park. These same respondents were then asked if they would go (inside or outside GGNRA) to an alternative site for dog walking. The five most popular alternative locations indicated in the survey for off-leash dog walking included Pine Lake/Stern Grove, Golden Gate Park (all areas), McLaren Park, Ocean Beach, and Alta Plaza (NPS 2012a, 13-15). The five most popular alternative locations for on-leash dog walking included Pine Lake / Stern Grove, Golden Gate Park (all areas), McLaren Park, Marin Headlands Trails, and Alta Plaza (NPS 2012a, 19-21). In addition, a high number of answers to survey questions asking where they would go instead of their preferred dog walking locations if they were not satisfied, included “I don’t know.” For example, the second most popular answer to the question about an alternative site for on-leash dog walking was “I don’t know” and the second most popular answer to the question about an alternative site for off-leash dog walking was “I don’t know.”⁸¹

To supplement the NPS survey, this analysis would ideally capture the range of potential responses to rule restrictions by developing an economic model of private dog walkers’ preferences for different dog walking experiences in the San Francisco Bay Area region to predict how private dog walking behavior and enjoyment might change as a result of the dog management actions at the park and to estimate the associated welfare losses. Because conducting a comprehensive survey of private dog walkers is beyond the scope of this effort, this analysis uses publically available economic information and a simplified approach to bound potential changes in behavior and utility to characterize the upper limits of economic impacts.

Exhibit 3-7 provides a qualitative ranking of the intensity of total visits and dog visitation by site developed by NPS for the Dog Management Plan/SEIS, as well as a qualitative discussion of the potential changes expected due to the proposed rule.

⁸⁰ NPS GGNRA Dog Walking Satisfaction Visitor Study as identified in, National Park Service, Golden Gate National Recreation Area, California: Draft Dog Management Plan/SEIS. 2013.

⁸¹ NPS GGNRA Dog Walking Satisfaction Visitor Study as identified in, National Park Service, Golden Gate National Recreation Area, California: Draft Dog Management Plan/SEIS. 2013.

EXHIBIT 3-7. CURRENT INTENSITY OF VISITOR USE AND DOG WALKING ACTIVITIES AT GGNRA LOCATIONS

COUNTY	SITE	DOG USE INTENSITY ^{1,2}	BRIEF DESCRIPTION OF CHANGES DUE TO PROPOSED RULE
Marin County	Stinson Beach	Moderate (in designated picnic areas only).	No change on beach. Some restrictions in picnic areas.
	Homestead Valley	Low	Changes from off-leash to on-leash only in some areas (no off-leash).
	Alta Trail / Orchard Fire Road / Pacheco Fire Road	High (commercial)	Changes from off-leash to on-leash only in some areas (no off-leash).
	Oakwood Valley	Moderate	Changes from off-leash to on-leash only in some areas (no off-leash). Change in one trail from on-leash to dog free trail.
	Muir Beach	Moderate	Changes from off-leash to on-leash only in some areas (no off-leash).
	Rodeo Beach & Vicinity trails	Low to high	Beach itself continues to be off-leash west of lagoon restrictions. Off-leash trails go to on-leash.
	Marin Headland-Rodeo Valley Trails	Low to moderate	Changes some existing off-leash trails to on-leash only in some areas (no off-leash).
	Fort Baker	Low	No change except for elimination of one fire road thru T & E species habitat which is now no dogs.
San Francisco County	Upper and Lower Fort Mason	Low to moderate (private and commercial dog walkers)	Changes from on-leash to on-leash in most areas with one off-leash section. No commercial dog walking in on-leash meadow grass areas, only paths.
	Crissy Field*	Moderate (private and commercial dog walkers)	Changes from off-leash to both on and off-leash. Trails change to on-leash. No commercial dog walking in picnic areas nor on Promenade except in direct access to Central beach or Airfield.
	Fort Point	Low to moderate	Dogs have never been allowed in the Fort, only the walkway. No change for private dog walkers.
	Baker Beach	Low to moderate	Changes from mix of off-leash, on-leash and no dogs to on-leash in some areas (no off-leash).
	Fort Miley	Low	Change goes from off-leash to on leash on most trails(no off-leash).
	Lands End	Low to moderate	Change goes from off-leash to on leash on most trails(no off-leash).
	Sutro Heights Park	Low	No change. Dogs continue to be on leash.
Ocean Beach*	Low to high	Changes from off-leash except during snowy	

COUNTY	SITE	DOG USE INTENSITY ^{1,2}	BRIEF DESCRIPTION OF CHANGES DUE TO PROPOSED RULE
			plover season between July 1-May 15 when on-leash required below Stairwell 21 to Sloat Blvd. (unless a crowded condition per 1979 Pet Policy - then could be asked to move), to off-leash continuing north of Stairwell 21 but not south (Stairwell 21 to Sloat Blvd changes to no dogs).
	Fort Funston	High (private and commercial dog walkers)	Change from off-leash in most areas to off-leash in many areas - including the most popular areas.
San Mateo County	Mori Point	Moderate	Changes from on-leash in most areas to on-leash in about half the area.
	Milagra Ridge	Low to moderate	Changes from on-leash on trails to on-leash in about half the trails.
	Sweeney Ridge / Cattle Hill	Low to moderate	Sweeney Ridge: Changes from on-leash in some areas to no dogs. Still allows on leash in some other areas.
	Pedro Point Headlands	Low to moderate	No changes (transfer to county imminent).
	Rancho Corral de Tierra	Low to moderate	Change is from current on-leash on all trails to on-leash on many trails closer to communities with loop trails from 3 communities while eliminating trails in backcountry habitat corridor.
Sources: ¹ Dog Management Plan/SEIS. ² Written communication, NPS, September 14, 2015; written communication with NPS, November 2, 2015.			

Those who live near or adjacent to areas where off-leash dog walking will be reduced (e.g., Ocean Beach) or removed (e.g. Muir Beach), and those unable to walk dogs on-leash into the backcountry (e.g., Rancho) may experience the greatest change and/or reduction in satisfaction and convenience; such dog walking visitors may have come to depend on using the GGNRA as a local park. However, some private dog walkers may experience increased satisfaction as on-leash dog behaviors are more controlled. For example, the NAU study indicated that 25 percent of dog owners or care providers supported more on-leash limits in GGNRA, whereas 45 percent opposed off-leash dog walking in GGNRA.

The magnitude of actual consumer surplus losses would depend on the extent and location of off-leash restrictions, the quality and quantity of alternate off-leash dog walking locations, and personal preferences/choices.

3.2.2 NUMBER OF AFFECTED PRIVATE DOG WALKERS

As described in Chapter 2, we estimate that approximately 994,000 to 1.4 million visits to GGNRA include walking dogs each year. Some portion of these visitors (both recurring

and one-time visitors which constitute these visits) would be affected either positively or negatively by the rule depending on individual preferences and patterns of park use.

3.2.3 POTENTIAL COSTS TO PRIVATE DOG WALKERS

This analysis employs a benefit transfer approach to estimate potential social welfare losses resulting from changes in private dog walking behavior and experiences at GGNRA following the proposed rule. Benefits transfer involves adapting research conducted to estimate economic values under one set of circumstances to address a new policy question.⁸² In this case, to estimate the total consumer surplus that is at risk of being lost, an existing estimate of consumer surplus value per visit is multiplied by estimates of the number of dog-walking visits that are at risk of being lost or diminished each year in GGNRA.

Few examples of existing valuation research examine the value of access to dog walking opportunities, and information on the value of off-leash dog walking in particular within GGNRA is not available. One study conducted by the U.S. Army Corps of Engineers (USACE) in 2012 estimated the value of dog walking among a number of park amenities in eight Bay Area parks, not including GGNRA.⁸³ This study estimated the value of a recreational dog walking trip (day) as ranging from \$5.55 to \$7.40 per visit-day (2015 dollars).⁸⁴

The East Bay Regional Park District (EBRPD) estimated the value of dog walking in nearby East Bay parks in Alameda and Contra Costa Counties at \$3.46 per visit (per visit user utility, 2015 dollars).⁸⁵

A third study provides a potentially useful estimate of a typical household's annual willingness to pay to access *off-leash* dog walking in Florida and Texas.⁸⁶ The study, conducted by Hyung-Sook Lee in August and September 2006, surveyed 302 respondents in two off-leash dog parks in Texas and two off-leash dog parks in Florida.⁸⁷ Lee estimates a typical household's annual willingness to pay for access to off-leash dog

⁸² Benefit transfer has been widely applied in policy analysis, and is cited as an acceptable method in OMB's Circular A-4.

⁸³ USACE. "Economic Analysis of Recreational and Other Values of Parks in the Adapting to Rising Tides Project Area." ART Vulnerability and Risk Assessment Report, Appendix E. Economic Analysis of Park and Recreation Areas. September 2012. The eight parks studied include (1) Crown Memorial State Beach, (2) Hayward Regional Shoreline, (3) Martin Luther King, Jr. Shoreline, (4) Oyster Bay Regional Shoreline, (5) Estuary Park (including the Jack London Aquatic Center), (6) Union Point Park, (7) Marina Park (in San Leandro), and (8) the Hayward Recreation and Park District (HARD) Hayward Shoreline Interpretive Center and trails.

⁸⁴ USACE. "Economic Analysis of Recreational and Other Values of Parks in the Adapting to Rising Tides Project Area." ART Vulnerability and Risk Assessment Report, Appendix E. Economic Analysis of Park and Recreation Areas. September 2012.

⁸⁵ East Bay Regional Park District. *Final Report: Regional Economic Analysis (Trends, Year 2000 & Beyond)*. November 1, 2000. Page 30. This study places per dog walking trip user utility at \$2.50, for on- and off-leash dog walking within the East Bay Regional Park District, which spans Alameda and Contra Costa Counties, CA.

⁸⁶ Lee, Hyung-Sook. *A Study of Use Patterns, User Satisfaction and Willingness to Pay for Off-Leash Dog Parks: Post-Occupancy Evaluations of Four Dog Parks in Texas and Florida*. August 2007. (This study will hereafter be referred to simply as "Lee 2007.")

⁸⁷ Lee 2007, p. 43. Respondents were primarily white, married, highly educated, and affluent.

walking space to be \$64.59 (2015 dollars).⁸⁸ This value is based on the mean annual dollar amount that respondents stated they would be willing to pay to access off-leash dog parks.⁸⁹ This value could be applied to households with dogs that visit GGNRA to estimate an annual household value of off-leash dog-walking. However, the array of dog walking opportunities and the affected populations are likely to be quite different from GGNRA, rendering this study less relevant than the local studies of parks in the San Francisco Bay area for benefit-transfer purposes.

As previously mentioned, ideally, this analysis would develop and use an economic model that considers private dog walkers' behavior if confronted with changes in the off-leash dog walking opportunities at GGNRA. However such a model is not available and primary research is beyond the scope of this effort. As shown in Exhibit 3-8, we use a range of estimates of per visit values provided by the two San Francisco Bay-area studies (with estimates ranging from \$3.46 to \$7.40 per visit for dog walking) in order to estimate the magnitude of the potential welfare loss to private dog walkers due to changes in the availability of on-leash and off-leash dog walking opportunities. As noted above, dog walkers' enjoyment of their dog walking experience may be reduced when compared to the baseline conditions in GGNRA, where fewer restrictions exist. However, dog-walking trips would not be precluded from GGNRA under the proposed rule. In fact, off-leash opportunities would continue to exist in the two most popular and frequented locations, Fort Funston and Crissy Field. For other dog walkers, the proposed rule should create a safer, more pleasant park experience. This effect has been noted anecdotally by several commercial and private dog walkers now under interim requirement.⁹⁰ As such, the impact on both the quality of the dog walking trips and the number of dog walking trips undertaken are uncertain.

⁸⁸ Lee 2007, p. 108, 109, 122. This value represents the mean of \$56.17 reported in the 2007 study, inflated to 2013 dollars.

⁸⁹ Lee 2007, p. 106, 108, 109, 122. The annual willingness to pay value is the result of eliminating the highest and lowest five percent of answers, and eliminating "protest zero" responses, wherein respondents indicated no willingness to pay for dog parks.

⁹⁰ Written communication with NPS, November 2, 2015.

EXHIBIT 3-8. ESTIMATED PRIVATE DOG WALKER VALUE OF DOG WALKING VISITATION TO GGNRA (2015 DOLLARS)¹

	NUMBER OF PRIVATE DOG WALKING VISITS TO GGNRA, ANNUAL	VALUE OF DOG WALKING ACCESS (PER DAY, 2015 DOLLARS) ²	TOTAL ANNUAL VALUE OF PRIVATE DOG WALKING AT GGNRA (2015 DOLLARS) ³
Total	847,500 to 1,300,100	\$3.46 to \$7.40 per day	\$2.9 million to \$9.6 million annually
<p>Notes:</p> <p>¹ Numbers may not add due to rounding.</p> <p>² Dog walking value: The low end assumption uses the value of a dog walking amenity in the EBRPD study of \$3.44. The high end assumption uses the high end value from the USACE study (\$7.35 per day).</p> <p>³ Both the quality of the dog walking trips as well as the quantity of dog walking trips taken could change due to the proposed rule. However, because most units will maintain some level of dog accessibility, we do not have sufficient information to understand what portion of this value of private dog walking would be affected by the proposed rule whether that effect is positive or negative.</p> <p>Sources:</p> <p>East Bay Regional Park District. Final Report: Regional Economic Analysis (Trends, Year 2000 & Beyond). November 1, 2000. Page 30. This study places per dog walking trip user utility at \$2.50, for on- and off-leash dog walking within the East Bay Regional Park District, which spans Alameda and Contra Costa Counties, CA; USACE. "Economic Analysis of Recreational and Other Values of Parks in the Adapting to Rising Tides Project Area." ART Vulnerability and Risk Assessment Report, Appendix E. Economic Analysis of Park and Recreation Areas. September 2012; Industrial Economics, Inc. "Assessment of Visitor Activities at Six Sites Within Golden Gate National Recreation Area." December 20, 2011.</p>			

3.2.4 PERMITTING COSTS TO PRIVATE DOG WALKERS

Under the proposed rule, owners wishing to walk four or more dogs would require a permit. However, the vast majority of private dog walkers do not own or care for more than three dogs.⁹¹ The 2002 NAU study also reported that only two percent of dog owners or care providers reported owning or caring for four dogs in the four-county area studied.⁹² This would suggest that very few private dog walking visitors to GGNRA would be required to obtain a permit under any alternative where a permit is required for walking four or more dogs. Therefore, permitting requirements would have a very limited impact on a relatively small population of dog walkers who might visit park.

3.2.5 POTENTIAL BENEFITS TO PRIVATE DOG WALKERS

Private dog walkers may also experience increases in enjoyment as a result of less congestion, more managed dog interactions and less conflict with off-leash dogs. In addition, these visitors could benefit from increased enjoyment associated with reduced degradation of natural and cultural resources (increased consumer surplus). The number

⁹¹ In the three-county area surrounding GGNRA, (San Mateo, San Francisco and Marin), existing county ordinances restrict the number of dogs that can reside in a county residence to two in San Mateo and three in San Francisco and Marin Counties.

⁹² Northern Arizona University: The Social Research Laboratory. "Public Opinion Research Telephone Survey Regarding Golden Gate National Recreation Area Pet Management Issues: Technical Report," December 2002. Page 133.

of private dog walkers benefitting from the rule would comprise some portion of the estimated annual 994,000 to 1.4 million visits with dogs to GGNRA each year.

3.3 COSTS AND BENEFITS TO PARK VISITORS WHO WOULD PREFER LIMITING DOG WALKING OR NOT HAVING DOG WALKING IN GGNRA

3.3.1 POTENTIAL COSTS TO PARK VISITORS WHO WOULD PREFER LIMITING DOG WALKING OR NOT HAVING DOG WALKING IN GGNRA

Because the proposed rule will restrict dog walking at GGNRA to about 1/3 of its non-swimming beaches and 1/3 of its trails rather than maintain existing dog walking under the 1979 Pet Policy due in part to public complaints and user conflicts, the proposed rule is not expected to adversely affect people who prefer to experience GGNRA with no or fewer dogs present.

3.3.2 POTENTIAL BENEFITS TO VISITORS WHO WOULD PREFER LIMITING DOG WALKING OR NOT HAVING DOG WALKING IN GGNRA

As discussed in Chapter 2, some visitors to GGNRA would prefer to experience the park without or with limited presence of dogs. Some potential visitors may in fact currently avoid visiting the park at all due to the presence of dogs. In both cases, the proposed rule and the alternatives that would restrict and further manage dog walking activities within the park may provide benefits to these users.

The extent of the increase in the availability of recreational opportunities free of on-leash and/or off-leash dog walking varies by alternative, depending on the level of restrictions and the resulting reduction of on-leash and/or off-leash dogs. Under the proposed rule, visitors that prefer no dogs, or more managed dog walking, in the national park areas would experience benefits because dog walking would be limited to certain areas, require increased responsibility of a dog walker for the behavior of their dog within the park, and allow for dog-free experiences in certain areas at each proposed site.⁹³

The welfare that these user groups (including users who prefer on-leash dog walking) derive from recreation at GGNRA without off-leash dogs in park areas could be measured in terms of consumer surplus, as discussed above. If a particular GGNRA site becomes unavailable for dog walking or if dog walking is limited to certain areas within a site, as occurs in the proposed rule, visitors who prefer no dogs gain welfare from the opportunity to experience the park with or without the presence of dogs according to their choice, rather than be confronted by off-leash dogs.⁹⁴

As stated above, to predict how restrictions on dog use within GGNRA might affect user behavior, this analysis would ideally develop and use an economic model of preferences for recreational experiences in the San Francisco Bay Area region. However, data limitations prohibit this sort of analysis. While limited research exists on users'

⁹³ National Park Service, Golden Gate National Recreation Area, California: Draft Dog Management Plan/SEIS. 2013.

⁹⁴ This gain would be net of the surplus that visitors would have derived from visiting the next best alternative location or undertaking the next most preferred alternate activity.

willingness-to-pay for access to dog-walking opportunities, studies have not attempted to evaluate the population's willingness to pay for the either the *absence* or limiting of either off or on-leash dogs.

According to a 2008 PRI/SFSU survey (Solop 2010), which included follow up interviews for survey participants who visited GGNRA, participants identified dogs off-leash as the third largest problem associated with visitor experience after litter and lack of available information about the site's fragile habitats. Overall, 16 percent reported off-leash dogs as representing a moderate or serious problem associated with their park experience.⁹⁵

According to the 2002 NAU telephone survey, 52 percent of visitors to GGNRA reported seeing a dog allowed off-leash by another visitor at a GGNRA site. For these visitors, dog walking negatively impacted the GGNRA experience of 22 percent.⁹⁶

These surveys suggest that between 11 percent and 16 percent of visitors to GGNRA may feel that dogs walking negatively impacted their experience at GGNRA. This would equate to approximately 1.6 million to 2.3 million visitors annually.

3.4 OTHER ECONOMIC BENEFITS TO ALL PARK VISITORS

As described in Chapter 2, dogs at GGNRA impact the park's natural, cultural, and historical resources, visitor health, safety and visitor experience, and NPS's ability to fulfill its mission to preserve and conserve these resources. Dogs have the potential to impact natural resources through trampling plant species, harassing animal species, and changing the natural chemical composition of the natural environment through depositing dog waste. Dog waste and off-leash dogs can also impact the aesthetic value of cultural and historical resources. To the extent that these conditions are improved, all park visitors to these areas should experience some benefit.

Restricting off- and on-leash dog walking to certain front-country areas under the proposed rule should result in benefits to the park's resources, including improved protection of flora and fauna present within the park, cleaner and more tranquil cultural and historical sites, and enhanced user experience resulting from these improvements to park resources. In order to quantify and monetize these benefits, information would be needed to determine (1) the extent of ecosystem improvements expected to result from the proposed rule, and (2) the public's willingness to pay for such beneficial changes. Although published studies estimate individuals' willingness to pay to protect natural, cultural, and historical resources, we do not have quantitative information on the expected incremental change in the extent of additional conservation of natural, cultural, and historical resources resulting from the proposed rule. Lacking these data, as well as data

⁹⁵ Solop, F.I. 2010 *Golden Gate Visitor Survey Follow-Up Interviews*. Prepared by Public Research Institute (PRI) and San Francisco State University. April. 125 pp.

⁹⁶ Nearly half (51 percent) of respondents who have seen dogs off-leash in a GGNRA site reported that dogs off-leash had an impact on their experience. Northern Arizona University: The Social Research Laboratory. "Public Opinion Research Telephone Survey Regarding Golden Gate National Recreation Area Pet Management Issues: Technical Report," December 2002.

on the size of the population that would hold these values for GGNRA, it is not possible to quantify resource conservation benefits of the proposed rule.

3.5 NPS COSTS OF ADMINISTERING THE PROGRAM

Regulating dog management and enforcing compliance within GGNRA requires significant Service staff time and resources. As each proposed alternative calls for different conservation measures, the level of NPS resources required to enforce compliance with these conservation measures would be expected to vary across the proposed alternatives. NPS estimates of the cost of implementing each alternative in its Dog Management Plan/SEIS (Chapter 2). The “short- to medium-term”⁹⁷ transitional cost for the proposed rule is estimated to be \$1.6 to \$2.6 million presented in Exhibit 3-9. The costs presented in Exhibit 3-9 represent costs related to expected future NPS staff time, or personnel costs, and non-personnel costs required for implementation of the proposed rule. Additional NPS staff time may be required for monitoring, education and public affairs, enforcement, record keeping, and data management, maintenance, and contract labor. Non-personnel costs may include “equipment, vehicles, computers, signage, etc., necessary to perform duties associated with dog management.”⁹⁸

EXHIBIT 3-9. ESTIMATED ANNUAL COSTS OF NPS STAFF TIME AND RESOURCES REQUIRED TO IMPLEMENT RULE

	PROPOSED RULE
Short- to Medium-Term Transitional NPS Implementation Costs	~\$1.6 to \$2.6 million
Source: National Park Service, Golden Gate National Recreation Area, California: Draft Dog Management Plan/SEIS. 2013; and written communication with NPS, July 27, 2015.	
Note: Total costs are short-to-medium term transitional costs, assuming compliance. Costs are estimates with range to represent range of options until final rule decided upon.	

3.6 IMPACTS OF THE RULE ALTERNATIVES

Under the baseline for the analysis, private and commercial dog walkers would maintain unrestricted access to off-leash dog walking across many areas in the GGNRA. Current levels of recreational use would likely continue with between 994,000 and 1.4 million private dog walking visits per year and approximately 11 percent to 16 percent of visitors to GGNRA (or approximately 1.6 to 2.3 million visits annually) where visitors may feel that dogs negatively impacted their experience in GGNRA.

Under alternative B, dog walking across GGNRA would be brought in line with 36 CFR 2.15, which requires all dogs to be on a leash and limits the number of dogs per trip, both private and commercial, to no more than three dogs at any one time. Relative to the proposed rule:

⁹⁷ National Park Service, Golden Gate National Recreation Area, California: Draft Dog Management Plan/SEIS. 2013.

⁹⁸ National Park Service, Golden Gate National Recreation Area, California: Draft Dog Management Plan/SEIS. 2013.

- Private dog walkers are likely to suffer additional losses in consumer welfare as a result of a loss in all off-leash dog walking opportunities across GGNRA.
- While the number of private dog walkers walking four or more dogs is likely low,⁹⁹ to the extent that there are any private dog walkers walking four or more dogs, such individuals may incur additional costs or losses in consumer welfare due to the three-dog limit.
- The majority of commercial dog walking businesses may exit the industry due to the three-dog limit and the loss of all off-leash dog walking opportunities across GGNRA. Consumers would also experience potential losses related to the loss of commercial dog walking services.
- Elimination of off-leash dog walking and imposing a three-dog limit per person is expected to reduce the frequency of ‘uncontrolled’ interactions between humans and off-leash dogs, and lead to improvements in the quality of the park’s natural and cultural resources. Park visitors who prefer to visit GGNRA without encountering off-leash dogs or wish to experience more responsible on-leash dog walking, would in turn experience an increase in consumer surplus (enjoyment).

Alternative C is most similar to the proposed rule, providing a variety of on-leash and off-leash dog walking opportunities across the GGNRA. As under the proposed rule, alternative C does not prohibit off-leash dog walking, but instead reallocates and limits off-leash use to designated leash control areas and voice and sight control areas and institutes a special use permit program for individuals (both private and commercial) walking between four and six dogs at any one time. With one exception, costs and benefits of Alternative C are likely to be similar in scope and magnitude to the proposed rule. Specifically, costs to commercial dog walkers may be slightly less than the proposed rule due to the Alternative C element which allows commercial dog walkers (walking between four and six dogs) to operate on the weekends between 8 AM and 11 AM.

Alternative D prohibits all commercial dog walking activities across the GGNRA. In addition to the commercial dog walkers, who would be most affected by this alternatives, consumers would experience losses related to the loss of commercial dog walking services at GGNRA. Private dog walkers would be limited to no more than three dogs per person, but would maintain access to some areas for off-leash dog walking. All non-commercial visitors are likely to experience some increases in enjoyment as a result of fewer dog/human and dog/dog conflicts, and reduced degradation of natural and cultural resources.

Alternative E is less restrictive than the proposed rule, allowing dog walkers more access to GGNRA areas than alternatives B, C, and D. The special use permit program under Alternative E is the same as under alternative C, requiring permits for any individual walking between four and six dogs and limiting such activities to designated locations

⁹⁹ In the three-county area surrounding GGNRA, (San Mateo, San Francisco and Marin), existing county ordinances restrict the number of dogs that can reside in a county residence to two in San Mateo and three in San Francisco and Marin Counties.

Monday through Friday from 8 AM to 5 PM and weekends from 8 AM to 11 AM. As under alternative C, costs to commercial dog walking under alternative E may be slightly less than the proposed rule because commercial dog walkers will maintain the ability to walk between four and six dogs on the weekends between 8 AM and 11 AM. Alternative E has more acres available for off-leash dog walking than under alternative C and the proposed rule. Greater access to off-leash dog walking opportunities may reduce some of the losses in consumer welfare for private dog walkers who prefer broader off-leash access relative to the proposed rule, but may further decrease consumer welfare for visitors interested in improving leash control in park when they walk their dogs.

3.7 SUMMARY OF THE COSTS AND BENEFITS OF THE PROPOSED RULE

In summary, costs and benefits of the proposed rule would accrue differently to GGNRA visitors who prefer dog walking at GGNRA as compared to GGNRA visitors who prefer more managed dog walking or no dog walking at all. While the proposed rule would restrict the areas available for off-leash as well as on-leash dog walking to designated areas, it would not prohibit dog walking in the park. The proposed rule also restricts the number of dogs per walker to six. This limit is, however, higher than is typical for private dog walkers who characteristically walk either one or two dogs at a time. Therefore, the impacts of the rule are anticipated to include benefits to private (as well as commercial) dog walkers in the form of an improved experience with reduced congestion and dog interactions in some areas with smaller groups of dogs rather than much larger groups of dogs, and reduced degradation of natural and cultural resources by dogs. The magnitude of such benefits will vary depending on the personal preference of visitors.

Commercial dog walking businesses that typically walk large groups of dogs are anticipated to experience the greatest burden of costs from the proposed rule due to limits on the number of dogs that can be walked at one time. Consumers of commercial dog walking services within the study area may also be affected by the proposed rule, in the form of higher prices.

NPS may experience some slight reduction in overall park visitation and associated expenditures by commercial as well as private dog walkers who change their behaviors to avoid GGNRA following the rule; however, such reductions in visitation have the potential to be offset by increases in visitation by visitors who prefer more managed dog walking or no dogs, or those who prefer less dog congestion.

Because quantified upper bound costs of the rule are expected to range from \$1.5 million to \$3.8 million annually, the analysis concludes that the proposed rule is unlikely to generate costs exceeding \$100 million in any year. Individually, impacts to commercial dog walkers are conservatively anticipated to range from approximately \$366 per dog walker (128 dog walkers, costs of permits only) to \$77,200 (one dog walker, assuming no price increases). Again we conclude that proposed rule is unlikely to generate costs exceeding \$100 million in any year.

3.8 CAVEATS AND UNCERTAINTIES TO THE COST-BENEFIT ANALYSIS

The following list summarizes the key assumptions of the cost-benefit analysis, as well as the potential direction and relative scale of bias introduced by these assumptions.

- **Future visitation.** Since GGNRA is made up of many park locations and does not have a central entrance where visitors can be counted, it is difficult to pinpoint the number of people who visit individual GGNRA locations each year except through official NPS visitor use statistics for the entire park, which generally are not separated by location. Data on dog walking visitors and visits by commercial dog walkers have been estimated at a few of the most popular locations through a small number of studies. We also assume visitation to the park would have been constant under the baseline. To the extent that actual baseline visitation is different from study-based estimates, and if visitation increases for all or a subset of visitors over time, our analysis could understate or overstate potential costs. In addition, public comments indicate some number of people that avoid GGNRA due to dog presence, however, the size of this group of displaced visitors, and whether they would alter their behavior due to the rule, is unknown.
- **Behavioral responses.** The responses of commercial and private visitors to changes in the designation of particular areas within park locations for use by dogs (e.g., from off-leash to on-leash, from on-leash to no dog access, etc.), are not well understood. Our analysis attempts to develop a reasonable upper bound for potential costs associated with behavioral changes.
- **Number of dogs per dog walker.** We assume that the number of dogs would not be limited at GGNRA under the baseline. Surrounding County requirements exist that limit the number of dog groups to eight (San Francisco) or six (Marin). These other requirements may already influence the number of dogs in groups brought to GGNRA, which could lead our analysis to overstate impacts.
- **Commercial dog walker practices at GGNRA.** Information on revenues, pricing, number of visits, and the number of dogs per visit for commercial dog walkers in the GGNRA is very limited. Limited interviews, data from the interim permit program, and previous surveys provide some information on these entities. For commercial dog walkers, we assume two walks per day, five days a week for most of the year. This may overstate current activity by these visitors, and would lead to an overestimation of baseline revenues as well as potential revenue losses.
- **Price of Commercial Dog Walking.** This analysis assumes the current price of a dog walk in GGNRA is \$20, which, in the current market, could rise by as little as \$3.33 for dog walkers walking seven dogs at a time to as much as \$6.67 per walk for dog walking eight dogs at a time. Commercial dog walkers interviewed for this analysis indicated that increasing the price charged for each dog walk (rate) is a likely response to the proposed rule. While the actual price increases across all commercial dog walkers operating at GGNRA is not known,

consumers have noted increases in dog walking prices under the interim permit program of up to \$5 per dog per trip.

APPENDIX A | INITIAL REGULATORY FLEXIBILITY ANALYSIS

This Initial Regulatory Flexibility Analysis (IRFA) considers the extent to which the economic impacts resulting from the proposed rule may be borne by small businesses. The analysis presented is conducted pursuant to the Regulatory Flexibility Act (RFA) as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996. An IRFA is prepared when an agency determines that a proposal may impose a significant economic impact on a substantial number of small entities. Information for this analysis was gathered from the Small Business Administration (SBA), the National Park Service (NPS), the Dog Management Plan/SEIS, and interviews with commercial dog walkers.

A.1 INTRODUCTION

First enacted in 1980, the RFA was designed to ensure that federal agencies consider the potential for its regulations to unduly inhibit the ability of small entities to compete. The goals of the RFA include increasing the government's awareness of the impact of regulations on small entities and to encourage agencies to exercise flexibility to provide regulatory relief to small entities.

When a federal agency proposes regulations, the RFA requires the agency to prepare and make available for public comment an analysis that describes the effect of the rule on small entities (i.e., small businesses, small organizations, and small government jurisdictions).¹⁰⁰ For this rulemaking, this analysis takes the form of an IRFA. Under 5 U.S.C., Section 603(b) of the RFA, an IRFA is required to contain:

- A description of the reasons why action by the agency is being considered;
- A succinct statement of the objectives of, and legal basis for, the proposed rule;
- A description of and, where feasible, an estimate of the number of small entities to which the proposed rule will apply;
- A description of the projected reporting, recordkeeping and other compliance requirements of the proposed rule, including an estimate of the classes of small entities which will be subject to the requirement and the type of professional skills necessary for preparation of the report or record;
- Identification, to the extent practicable, of all relevant federal rules which may duplicate, overlap or conflict with the proposed rule.

¹⁰⁰ 5 U.S.C. 601 et seq.

Each Initial Regulatory Flexibility Analysis shall also contain a description of any significant alternatives to the proposed rule that accomplish the stated objectives of applicable statutes and which minimize any significant economic impact of the proposed rule on small entities.

A.2 REASONS WHY ACTION IS BEING CONSIDERED, OBJECTIVES OF, AND LEGAL BASIS FOR THE PROPOSED RULE

The purpose of this action is to determine the manner and extent of dog use in appropriate areas of the park. Action is needed because GGNRA resources and values, as defined by the park's enabling legislation and the NPS Organic Act, could be compromised to the extent that, without action, these resources and values in some areas of the park might not be available for enjoyment by future generations. Additionally, a dog management policy inconsistent with NPS regulations and increased public expectations for use of the park for dog recreation have resulted in controversy, litigation, and compromised visitor and employee safety, affecting visitor experience and resulting in resource degradation. These conflicts will likely escalate if not addressed in a comprehensive plan/EIS.

The following sections describe why the action is being considered, its objectives, and legal basis in more detail. Much of the text in this section is taken from the proposed rule and the Dog Management Plan/SEIS which can be referred to for more information.

A.2.1. REASONS WHY ACTION IS BEING CONSIDERED AND OBJECTIVES

E.O. 12866 indicates that federal agencies should only promulgate regulations that address a compelling public need, such as material failures of private markets to protect or improve the health and safety of the public, the environment, or the well-being of the American people. In this case, NPS has already promulgated national leash regulations; within GGNRA, NPS intends to enforce a modified leash policy, as outlined in the proposed rule. NPS considers these regulatory changes necessary to preserve and conserve park resources, protect the health and safety of GGNRA visitors and staff, and provide a clear, enforceable dog management policy.¹⁰¹

NPS's mission is to preserve and conserve natural, cultural, and historical resources unimpaired, for the enjoyment of future generations. It also seeks to ensure the health and safety of visitors and NPS staff. With respect to dog use at GGNRA, NPS states in the proposed rule its objective as ensuring "that GGNRA lands continue to be made available for both on and off-leash dog walking in a manner that does not compromise its national park mandate to preserve and protect national park resources and values, nor conflict with the enjoyment of such by its broader public."¹⁰²

A.2.2. LEGAL BASIS FOR THE PROPOSED RULE

Unless authorized by special regulation, off-leash dog walking within units of the national park system is prohibited, and on-leash dog walking is limited, where allowed.

¹⁰¹ Proposed Rule.

¹⁰² Proposed Rule.

Nonetheless, several GGNRA locations within San Francisco and Marin counties have been managed under a 1979 Pet Policy, which allowed for areas of off-leash dog walking, for over twenty years. With increasing conflicts, visitation and a court ruling regarding the need for notice and comment rulemaking before any management changes could be made, GGNRA undertook an environmental analysis to identify where and under what conditions, it might continue to allow these activities in a manner that does not compromise its conservation mandate nor the enjoyment of the broader public (see Chapter 1 of the Dog Management Plan/SEIS.)

In this proposed rule, the National Park Service proposes to promulgate a special regulation for Golden Gate National Recreation Area to designate areas within the park that would be open to on-leash and voice and sight control (off-leash) dog walking.

A.3 DESCRIPTION AND ESTIMATE OF THE NUMBER OF SMALL ENTITIES TO WHICH THE RULE APPLIES

A.3.1. DEFINITION OF A SMALL ENTITY

Three types of small entities are defined in the RFA:

Small Business. Section 601(3) of the RFA defines a small business as having the same meaning as small business concern under section 3 of the Small Business Act. This includes any firm that is independently owned and operated and is not dominant in its field of operation. The U.S. SBA has developed size standards to carry out the purposes of the Small Business Act, and those size standards can be found in 13 CFR 121.201. The size standards are matched to North American Industry Classification System (NAICS) industries. The SBA definition of a small business applies to a firm's parent company and all affiliates as a single entity.

Small Governmental Jurisdiction. Section 601(5) defines small governmental jurisdictions as governments of cities, counties, towns, townships, villages, school districts, or special districts with a population of less than 50,000. Special districts may include those servicing irrigation, ports, parks and recreation, sanitation, drainage, soil and water conservation, road assessment, etc. Most tribal governments will also meet this standard. When counties have populations greater than 50,000, those municipalities of fewer than 50,000 can be identified using population reports. Other types of small government entities are not as easily identified under this standard, as they are not typically classified by population.

Small Organization. Section 601(4) defines a small organization as any not-for-profit enterprise that is independently owned and operated and not dominant in its field. Small organizations may include private hospitals, educational institutions, irrigation districts, public utilities, agricultural co-ops, etc. Depending upon state laws, it may be difficult to distinguish whether a small entity is a government or non-profit entity. For example, a water supply entity may be a cooperative owned by its members in one case and in another a publicly chartered small government with the assets owned publicly and officers elected at the same elections as other public officials.

A.3.2. DESCRIPTION OF SMALL ENTITIES TO WHICH THE RULE WILL APPLY

This IRFA focuses on identifying small businesses that will be directly affected by the proposed rule. As described in the cost-benefit analysis, the entities anticipated to incur costs directly due to the proposed rule include commercial dog walking operations, private dog walkers, and NPS. As neither NPS nor private dog walkers are small businesses, this section focuses on identifying potential impacts to commercial dog walkers who will have to comply with the proposed rule. Direct impacts to small governmental jurisdictions, as defined by SBA as less than 50,000 residents, are not anticipated.

Exhibit A-1 presents a description of the dog walking industry as defined by the NAICS system and the SBA size standards. The SBA size standards represent the annual receipts that indicate the maximum allowed for a concern and its affiliates to be considered small. As shown, NAICS Code 812910, Pet Care Services, carries a SBA size threshold of \$7.5 million; in other words, commercial dog walking businesses with annual receipts (or revenues) less than \$7.5 million are considered by SBA to qualify as small businesses.

EXHIBIT A-1. INDUSTRY SECTORS ANTICIPATED TO BE DIRECTLY AFFECTED BY THE PROPOSED RULE

RELEVANT ACTIVITY	INDUSTRY AND DESCRIPTION	NAICS CODE	SBA SIZE STANDARD (DOLLARS, ANNUAL RECEIPTS)
Commercial Dog Walking	Pet Care Services (other than veterinary services). This industry comprises establishments primarily engaged in providing pet care services (except veterinary), such as boarding, grooming, sitting, and training pets.	812910	\$7.5 Million
Source: Size Standards Used to Define Small Business Concerns (13 CFR Part 121). Accessed March 9, 2015 at http://www.ecfr.gov/cgi-bin/text-idx?SID=dfda62b572eeace328f56498a62a0bc5&node=%20sg13.1.121_1109.sg1&rgn=div7 .			

A.3.3. ESTIMATE OF THE NUMBER OF SMALL ENTITIES TO WHICH THE RULE WILL APPLY

Information on the number of registered dog walking businesses are compiled by the U.S. Census under NAICS Code 812910, pet care services (other than veterinary services), which includes all establishments that provide boarding, grooming, sitting, and pet training services. The U.S. Census reported 969 pet service businesses, including 134 establishments, and 835 nonemployers (sole proprietors) in Marin, San Francisco, and San Mateo Counties combined in 2013.¹⁰³ Commercial dog walking businesses represent a subset of this total, but the specific number is not reported.

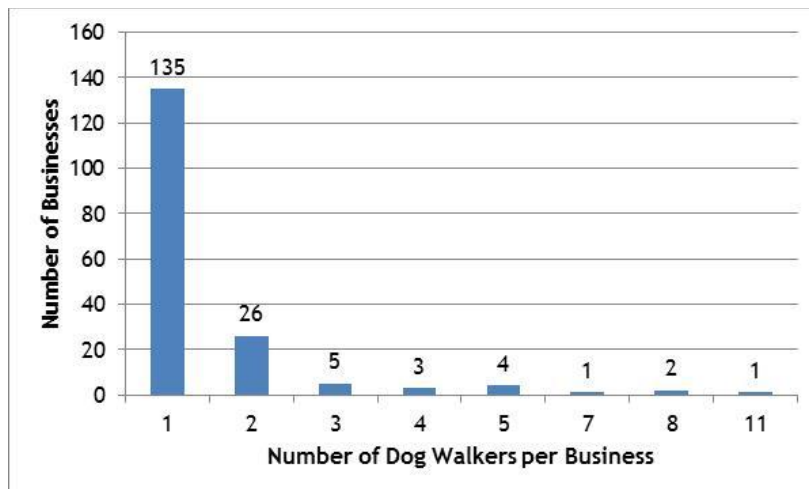
Using data received from NPS, this analysis estimates the number of small entities to which the proposed rule would apply. In the spring/summer of 2014, NPS implemented

¹⁰³ U.S. Census Bureau, 2013 County Business Patterns; U.S. Census Bureau, EWD, 2013 Nonemployer Statistics.

an interim permit program for commercial entities that walk between four and six dogs in the park. Between June 1, 2014, when NPS first began issuing permits, and September 9, 2015, 177 commercial dog walking businesses, representing 268 dog walkers, have applied for permits (Exhibit A-2).¹⁰⁴ While all of these commercial dog walkers have the potential to be affected by the proposed rule, 93 (52 percent) of these businesses, which are the ones that our data suggest walk more than six dogs per walk, are primarily expected to be affected by the rule. Thus, 48 percent are not expected to be affected, other than by minor permit costs, as discussed below.

As shown in Exhibit A-2, 77 percent of businesses (135 businesses) participating in NPS' interim permit program are sole proprietorships (only one dog walker). We do not have information about the size of the dog groups typically walked by these commercial dog walkers.

EXHIBIT A-2. NUMBER OF EMPLOYEES BY COMMERCIAL DOG WALKING BUSINESSES PARTICIPATING IN THE NPS GGNRA INTERIM PERMIT PROGRAM AS OF SEPTEMBER 9, 2015



Source: NPS. Interim Permit Program Participation Data, as of September 9, 2015.

NAICS Code 812910, Pet Care Services, carries a SBA size threshold of \$7.5 million. Data on average annual revenues for commercial dog walkers operating in the GGNRA are unavailable. However, using estimates from a number of interviews with commercial dog walkers that use the GGNRA, and the services provided, we estimate annual baseline (pre-tax) revenues per affected commercial dog walker (those walking more than four dogs) may range from \$58,000 to \$204,000 annually, and would depend on the number of dogs walked, prices, activity level, etc. As such, we assume that all of the potentially

¹⁰⁴ Personal communication with NPS on September 9, 2015. For context, U.S. Census, *County Business Patterns* (2012) records 134 total establishments, and 835 nonemployers (sole proprietors) in NAICS code 812910, pet care services (other than veterinary services) in Marin, San Francisco, and San Mateo Counties, CA combined in 2013. Commercial dog walking businesses should represent a portion of this total.

affected dog walking businesses in the park would be considered small entities under SBA size standards.

A.4 DESCRIPTION OF REPORTING, RECORD KEEPING EFFORTS, AND COMPLIANCE REQUIREMENTS

A.4.1. REPORTING AND RECORD KEEPING EFFORTS

This rule contains no new information collection requirements, and a submission to the Office of Management and Budget (OMB) under the Paperwork Reduction Act is not required.

A.4.2. ESTIMATE OF COMPLIANCE COSTS OF THE PROPOSED RULE

As discussed in the cost-benefit analysis, the element of the proposed rule with the most significant costs on commercial dog walkers is anticipated to be the limitation of dog walking to no more than six dogs per dog walker. However, the specific response of the commercial dog walkers to this limit is not understood with certainty. As described in Section 3.1, this rule element is anticipated to require commercial dog walkers who currently walk more than six dogs per trip to either forego the revenues associated with these trips, travel to alternative dog walking locations and incur higher costs, increase the number of walks taken, raise prices, or some combination of these. It is also possible that some dog walkers may increase the number of dogs walked. The primary costs of the rule can be measured as the foregone profit from the reduction in the number of dogs that a commercial dog walker may walk within the GGNRA to no more than six dogs per trip. Minor additional costs of permitting are also quantified.

Profit margins of businesses that engage in commercial dog walking are influenced by many factors, such as the skill of the dog walker, the demand for dog walking in a particular geographic area, the number of dogs walked, whether the dog walker has employees, the number of walks per week, customer rates, and the price of fuel. In addition, businesses that provide commercial dog walking services often provide a mix of different types of dog walking as well as other related services, including neighborhood dog walking, off-leash dog walking, on-leash dog walking, private dog walking, pet sitting, and dog training. As a result, returns vary across businesses that provide commercial dog walking and across years. Publically available data on the average or range of returns for businesses that engage in commercial dog walking within the study area are not available. Absent data on profit margins for commercial dog walkers, this analysis reports changes in estimated annual revenues.

Exhibits A-3 and A-4 summarize potential revenue losses per commercial dog walking business. As shown:

- Commercial dog walkers walking four to six dogs would incur permit costs of approximately \$550 per business (84 dog walking businesses, or 48 percent of affected dog walking businesses).¹⁰⁵
- Approximately 93 commercial dog walking businesses walk more than six dogs at one time and therefore are the groups primarily affected by the rule.
 - Of the businesses affected by the six dog limit and expected to experience a reduction in revenue, the median impact is \$15,000 per business (or \$9,700 per dog walker).
 - Of the 93 businesses affected by the six dog limit, it appears feasible for the 48 businesses that walk seven to eight dogs per trip to offset revenue losses, due to group size limits, by increasing consumer prices by \$3.33 to \$6.67 per dog walk. Other dog walkers walking more than eight dogs may be able to partially offset revenue losses by increasing prices by \$6.67 per dog walk.
 - Approximately two businesses walking 13 and 14 dogs per GGNRA visit may experience the largest revenue decrease on a per business basis, assuming that these businesses consistently walks this large number of dogs.

The upper bound of total annualized industry-wide revenue losses, which are predominantly for commercial dog walkers walking between nine and ten dogs at one time, are estimated to range from \$1.5 to \$3.8 million. Across the 177 affected commercial dog walking operations, annual revenue impacts are conservatively anticipated to range from \$550 per business (84 businesses) to \$117,000 (one business).

Estimated impacts per business should be considered order of magnitude impacts, as current operations and revenues are not reported and specific behavioral responses of businesses to the rule are not well understood.

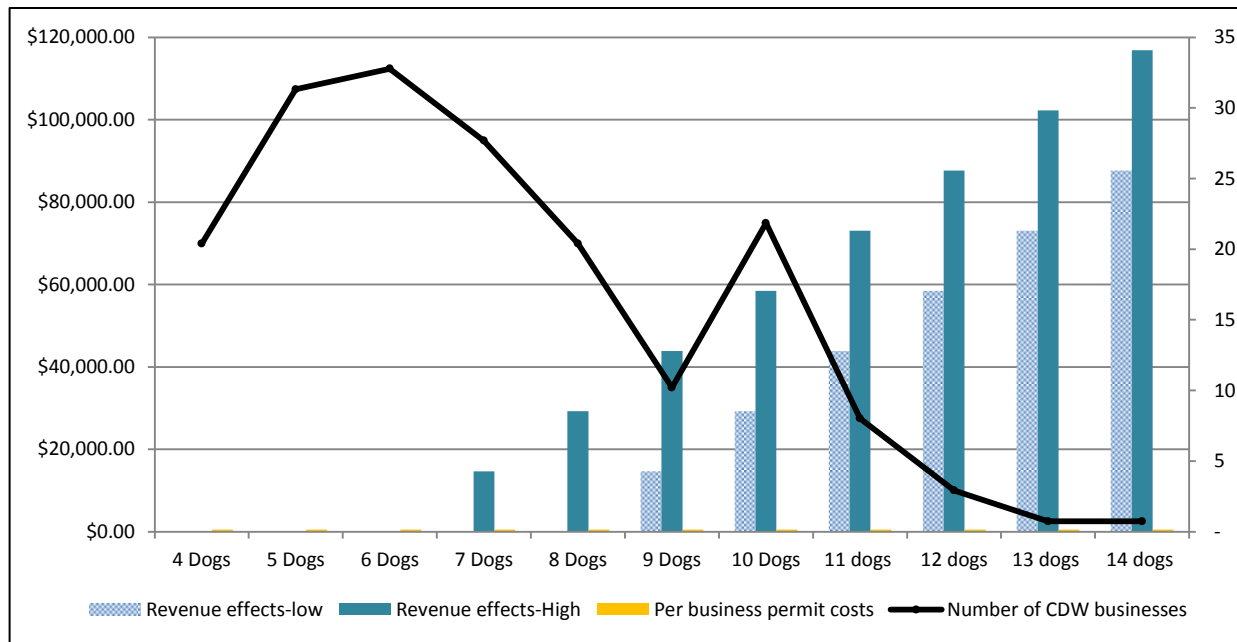
Caveats to this analysis include the following:

- These estimates assume that customer prices could not be increased beyond \$6.67 per walk to absorb revenue losses due to the six dog limit, which would further reduce reported effects.
- Impacts would be expected to vary depending on the size of dog groups currently walked in GGNRA (and hence the extent of changes required).
- Because baseline revenues are not reported, and the analysis assumes operation at full capacity, both baseline business revenues and the estimated change in revenues may be overstated.

¹⁰⁵ On average, affected dog walking businesses in the GGNRA employ 1.5 dog walkers (i.e., 268 dog walkers walking more than four dogs at time/177 businesses=1.5 dog walkers per business). We use this ratio to calculate business-level impacts from impacts per dog walker. Permit costs are discussed in section 3.2.1, and include \$75 in application fees, \$25 in liability insurance per business, and \$300 permit fees per dog walker (estimated at \$550 per business).

- Revenue impacts could be significantly lower if businesses are able to adjust pricing, the number of walks, walking destination, and/or the number of dog walkers used.

EXHIBIT A-3. ESTIMATED ANNUAL COSTS (REVENUE LOSSES) PER COMMERCIAL DOG WALKING BUSINESS DUE TO THE PROPOSED RULE, BY SIZE OF DOG WALKING GROUP, 2016 TO 2035 (2015 DOLLARS)



Note: "Revenue effects-low" represents the scenario in which dog walkers who walk groups of seven dogs increase prices by \$3.33 per walk taken, and dog walkers who walk groups of eight or more dogs increase prices by \$6.67 per walk taken. "Revenue effects-high" represents the scenario in which dog walkers forgo revenues associated with dogs that would have been walked in exceedance of the six-dog limit, assuming no offsetting price increases.

EXHIBIT A-4. ESTIMATED ANNUAL COSTS (REVENUE LOSSES) PER COMMERCIAL DOG WALKING BUSINESS DUE TO THE PROPOSED RULE, 2016 TO 2035 (2015 DOLLARS)

	PRE-RULE (BASELINE) SIZE OF DOG GROUP								
	4 to 6 dogs	7 dogs	8 dogs	9 dogs	10 dogs	11 dogs	12 dogs	13 dogs	14 dogs
Number of CDW <i>businesses</i> operating in the GGNRA (100% small) ¹	84	27.7	20.4	10.2	21.9	8.0	2.9	0.7	0.7
Number of <i>affected</i> small CDW <i>businesses</i> operating in GGNRA ¹	Permit costs only	27.7	20.4	10.2	21.9	8.0	2.9	0.7	0.7
Estimated annual baseline revenues per business ¹	\$58,000 to \$88,000	\$102,000	\$117,000	\$132,000	\$146,000	\$160,000	\$175,000	\$190,000	\$205,000
Annual revenue impacts per business ^{1, 3}	Permit costs only	\$0 to - \$14,600	\$0 to - \$29,200	-\$9,650 to -\$43,800	-\$19,300 to \$58,400	-\$28,950 to \$73,100	-\$38,600 to -\$87,700	-\$48,300 to \$102,300	-\$57,900 to \$116,800
Impacts as a percent of business revenues	<1%	-14%	-25%	-33%	-40%	-45%	-50%	-53%	-57%
Notes:									
1 On average, dog walking businesses in the GGNRA employ 1.5 dog walkers (i.e., 268 dog walkers/177 businesses=1.5 dog walkers per business). We use this ratio to calculate business-level impacts. Averages are presented in decimals, recognizing that actual counts of businesses would be whole numbers.									
2 Does not include commercial dog walkers walking less than 3 dogs, as these are not part of the permit program.									
3 We note that reporting of potential revenues changes also overstates the costs of the proposed rule because these losses are not net of the costs of providing the commercial dog walking services; however, data on average profits for commercial dog walking businesses in the study area are not available.									

A.5 IDENTIFICATION OF RELEVANT FEDERAL RULES THAT MAY DUPLICATE, OVERLAP, OR CONFLICT WITH THE PROPOSED RULE

As noted elsewhere in this document, the purpose of this action is to determine the manner and extent of dog use in appropriate areas of the park. Action is needed because GGNRA resources and values, as defined by the park's enabling legislation and the NPS Organic Act, could be compromised to the extent that, without action, these resources and values in some areas of the park might not be available for enjoyment by future generations. Additionally, a dog management policy inconsistent with NPS regulations and increased public expectations for use of the park for dog recreation have resulted in controversy, litigation, and compromised visitor and employee safety, affecting visitor experience and resulting in resource degradation. These conflicts will likely escalate if not addressed in a comprehensive plan/EIS and rule. The proposed rule addresses these inconsistencies by ensuring uniform regulation of dog management within GGNRA, as opposed to a number of existing (and conflicting) authorities. NPS invites comments that identify additional statutes, regulations, or policies that may duplicate, overlap, or conflict with the proposed rule.

A.6 DESCRIPTION OF ALTERNATIVES TO THE PROPOSED RULE THAT WOULD MINIMIZE SIGNIFICANT ECONOMIC IMPACTS ON SMALL ENTITIES

An IRFA should include a description of any significant alternatives to the proposed rule that minimize significant economic impacts on small entities while accomplishing the agency's objectives. During the development of the Dog Management Plan/SEIS, the NPS considered five alternatives to the preferred alternative. The proposed rule represents the preferred alternative with some changes based on public comment. The following comparison of these alternatives focuses on the elements that are related to the measures of the proposed rule which affect commercial dog walking activities. As described, the alternatives would have varying impacts on these activities:

- Alternative D is the most restrictive alternative considered, under which all commercial dog walking is explicitly prohibited in the GGNRA. Such a requirement is anticipated to result in the majority of commercial dog walking businesses exiting the industry. It is possible that some businesses may shift their operations to alternate locations; however, the availability of such locations is limited in certain areas of the study area.
- Alternative C is the most similar to the proposed rule. As under the proposed rule, alternative C does not prohibit off-leash dog walking, but instead reallocates and limits off-leash use to designated leash control areas and voice and sight control areas and institutes a special use permit program for individuals (both private and commercial) walking between four and six dogs at any one time. Impacts on commercial dog walkers could be somewhat less than expected from the proposed rule due to the alternative C element which allows commercial dog walkers (walking between four and six dogs) to operate on weekends between 8 AM and 11 AM.

- Alternative E expands upon alternative C by providing greater access to off-leash dog walking than under alternative C and the proposed rule, respectively. Impacts to commercial dog walkers are not expected to differ significantly between alternatives C and E, as impacts are most driven by the three-dog limit, which can increase up to 6 dogs under alternatives C and E. However, alternative E provides additional access.

A.7 CONCLUSIONS

The NPS concludes approximately 93 small businesses, specifically commercial dog walking operations may be affected by the proposed rule because they operate in GGNRA and may walk more than the allowable limit of six dogs during each walk. Of the 93 businesses which walked more than six dogs before the interim park program and therefore may experience a reduction in revenue due to the six dog limit, the median impact is estimated at \$15,000 per business (or \$9,700 per dog walker) without further market adjustments.

These estimates assume that customer prices could not be increased to absorb revenue losses, and that such business are unable to increase the number of walks they take GGNRA per day, which would reduce reported revenue effects. Impacts would be expected to vary depending on the size of dog groups currently walked in GGNRA (and hence the extent of changes required). Because baseline revenues are not reported, and the analysis assumes commercial businesses are operating at full capacity, both baseline business revenues and the estimated change in revenues may be overstated. Revenue impacts could be significantly lower if businesses are able to adjust pricing, the number of walks, walking destination(s), and/or the number of dog walkers used. Not accounting for the aforementioned mitigating factors, total annualized industry-wide revenue losses are estimated to be no greater than \$3.7 million, where such costs are borne specifically by the 93 businesses that walked more than six dogs at one time prior to the interim permit program. For those walking four to six dogs at one time, within both a regional park and typical county norm where the number of dogs walked is regulated, impacts are expected to be minor (approximately \$550 per business).

This proposed regulatory action is not expected to be a major rule in terms of economic costs. That is, it is not expected to have an annual economic effect of \$100 million, to result in a major increase in costs or prices for consumers, individual industries, or geographic regions, or result in significant adverse effects on competition, employment, investment, productivity, innovation, or on the ability of United States-based enterprises to compete with foreign-based enterprises in domestic and export markets.