



BOUNDARY ADJUSTMENT EVALUATION

Top left: Western pond turtle. Top right: A young visitor to Santa Monica Mountains National Recreation Area during the RecFest event. Bottom: Control panel at the Coca rocket engine test stand at Santa Susana Field Laboratory. Photos: NPS.

Chapter 4: Boundary Adjustment Evaluation

This chapter evaluates the potential for adding to, or adjusting the Santa Monica Mountains National Recreation Area to include areas in the Rim of the Valley Corridor study area.

NPS Boundary Adjustment Criteria

The legislation authorizing the Rim of the Valley Corridor Special Resource Study directs the NPS to evaluate: (1) the suitability and feasibility of designating all or a portion of the corridor as a unit of Santa Monica Mountains National Recreation Area (SMMNRA); and (2) the methods and means for the protection and interpretation of this corridor by the National Park Service, other federal, state, or local government entities or private or non-governmental organizations.

While the special resource study criteria identify whether an area would be eligible as a new unit of the national park system, a separate set of criteria determines whether areas would be appropriate additions to an existing national park unit. When considering a boundary adjustment, the criteria evaluate how the addition will help fulfill the park unit's legislated purpose, further protect significant resources related to the purpose of the park, or address operational issues.

In accordance with §3.5 of *NPS Management Policies 2006* and as directed by the authorizing legislation for the special resource study, this study evaluates whether boundary adjustments to SMMNRA that are necessary and desirable to carrying out the purposes of the park would be necessary to:

- protect significant resources and values, or to enhance opportunities for public enjoyment related to park purposes; or
- address operational and management issues, such as the need for access or the need for boundaries to correspond to logical boundary delineations such as topographic or other natural features or roads; or
- otherwise protect park resources that are critical to fulfilling park purposes.

All recommendations for boundary changes must also meet the following two criteria:

- the added lands will be feasible to administer considering their size, configuration, and ownership; costs; the views of and impacts on local communities and surrounding jurisdictions; and other factors such as the presence of hazardous substances or exotic species.
- other alternatives for management and resource protection are not adequate.

Legislation would be required to authorize modifications to the boundary of SMMNRA.

Boundary Adjustment Criteria Evaluation

The following section addresses the criteria that must be considered for adjustments to the boundaries of national park units in accordance with §3.5 of *NPS Management Policies 2006*.

Protection of Significant Resources or Opportunities to Enhance Public Enjoyment Related to the Purpose of SMMNRA

Park purpose and significance statements from the *SMMNRA Foundation Document* (currently underway), as described in *Chapter 1: Introduction* provide a framework for evaluating whether study area resources would contribute to the protection of significant resources or opportunities to enhance public enjoyment.

SMMNRA Park Purpose and Significance

A park purpose statement identifies the specific reason(s) for establishment of a particular unit of the national park system. The *SMMNRA Foundation Document* park purpose statement was drafted through a careful analysis of its enabling legislation and the legislative history that influenced its development. The national recreation area was established when the enabling legislation adopted by Congress was signed into law on November 10, 1978. The purpose statement as defined in the foundation document is:

As the region continues to develop and urbanize, the Santa Monica Mountains are becoming isolated from other natural areas in southern California. Continued habitat loss and fragmentation threatens the long-term existence of many native plant and animal species and is one of the greatest threats facing biodiversity protection.

Santa Monica Mountains National Recreation Area is a collaborative partnership that protects a mosaic of natural resources, cultural heritage, and scenery within North America's Mediterranean biome, and provides public enjoyment opportunities, including connections to wild places in the greater Los Angeles metropolitan area.

The SMMNRA *Foundation Document* also outlines the national significance of SMMNRA. The following section provides the SMMNRA significance statements (in italics) followed by a description of how portions of the study area outside of the existing boundary of SMMNRA would contribute to the protection of SMMNRA's national significance.

SMMNRA Significance - High Biodiversity Influenced by the mild climate and geologic setting, Santa Monica Mountains National Recreation Area contains high concentrations of rare, sensitive, and endemic species, and represents one of the best remaining examples of the Mediterranean biome in North America. Mediterranean ecosystems are among the world's rarest and most endangered land types, occurring in only five locations throughout the world.

The study area as a whole also contains resources that are essential to the long-term conservation of Santa Monica Mountain's high biological diversity. Physical connection to other large protected areas is essential to maintaining these resources. As the region continues to develop and urbanize, the Santa Monica Mountains are becoming isolated from other natural areas in southern California. Continued habitat loss and fragmentation threatens the long-term existence of many native plant and animal species and is one of the greatest threats facing biodiversity protection. Mammals, such as mountain lions, bobcats, and badgers, are particularly at risk and are more vulnerable to local extinction in fragmented areas. Conservation biologists recognize that protecting large core habitat areas beyond the current SMMNRA boundary is the most effective way to reduce the effects of fragmentation. Maintaining or reestablishing this connectivity between large areas would help prevent isolation of wildlife populations. Protecting these broader landscapes helps ensure the resiliency of natural systems, particularly related to ecosystem stressors such as

development and urbanization, increased fire frequency, and climate change.

Regional wildlife corridors identified as critical to long-term conservation of natural resources in SMMNRA include the Santa Monica-Sierra Madre wildlife corridor within the Simi Hills and eastern Santa Susana Mountains. This corridor has been documented by numerous studies and by various agencies and conservation organizations as significant on a regional and statewide basis (Penrod et al. 2006, Spencer et al. 2010). It is recognized in SMMNRA plans and studies as essential to long-term conservation of the nationally significant natural resources protected in SMMNRA.

Apart from the regional corridors described above, the Verdugo Mountains-San Rafael Hills, Griffith Park, and remnant riparian areas along the Los Angeles and Arroyo Seco river corridors function as ecological stepping stones for wildlife between the Santa Monica and San Gabriel Mountains.

As described in *Chapter 3*, in the national significance and suitability criteria evaluation, many portions of the study area outside of SMMNRA contain resources which expand on the diversity of habitat found within SMMNRA.

- The portions of the Santa Monica Mountains that are outside of SMMNRA and within the study area (approximately 53,200 acres) contain examples of chaparral vegetation and high quality riparian habitat such as white alder riparian woodland and forest and California bay forest, all of which contribute to the biodiversity currently found at SMMNRA.
- The Conejo Mountain – Las Posas Hills area (approximately 40,100 acres) northwest of SMMNRA supports a broad range of imperiled vegetation communities and sensitive plant and animal species. These significant resources would expand and enhance representation of natural resource themes represented at SMMNRA by adding to the quantity, quality, and diversity of chaparral related vegetation communities.

Over 18 million people live within a short drive of the area, including over half of California's population and more than 5% of the nation's total population.

- The Simi Hills outside of the existing SMMNRA boundary (approximately 45,700 acres) contain a broad range of sensitive plant and animal species, some of which are rare and endemic. As an example, Laskey Mesa in the Simi Hills contains one of the most outstanding examples of native grassland in southern California.
- Much of the Santa Susana Mountains (approximately 80,600 acres) is undeveloped with several large areas protected for conservation and recreational values. Including the Santa Susana Mountains in SMMNRA would enhance the quantity, quality, and diversity of grassland and chaparral related vegetation communities represented at SMMNRA. Numerous canyons in the Santa Susana Mountains also contain sensitive riparian communities, such as black cottonwood forest and Fremont cottonwood forest. The north side of the Santa Susana Mountains is influenced by a convergence of montane and desert influences that create rare and unusual plant communities, including some ancient relict plant communities (e.g. bigcone Douglas-fir and canyon live oak). There are also communities at their northern or southernmost limits such as valley oak savanna.
- The Verdugo Mountains-San Rafael Hills (approximately 24,000 acres) feature an array of chaparral-related vegetation communities, including several considered to be imperiled, and riparian vegetation, including types not found in SMMNRA such as white alder riparian woodland and forest and California bay forest.
- Although most of the San Gabriel Mountains are protected and managed by the U.S. Forest Service, the San Gabriel Mountains foothills (approximately 20,300 acres), a mix of both public and private ownership similar to SMMNRA, contain chaparral vegetation types not currently found in SMMNRA, high quality riparian areas, and excellent examples of alluvial fan sage scrub, a distinct and sensitive natural community that has adapted to the unique fluvial processes of the Los Angeles basin. Tujung Wash, which extends from the mountains into the interface between the foothills and valley, features an excellent example of this rare vegetation type.
- The Upper Santa Clara River area (approximately 36,500 acres) contains more sensitive plant community types (at least seventeen), than any other portion of the study area (LADRP 2012a). Outstanding examples include high quality riparian and alluvial fan vegetation unique to the Transverse and Peninsular Ranges of southern California.
- The Los Angeles and Arroyo Seco river corridors (approximately 7,100 acres within the study area) contain remnant riparian areas that provide habitat and facilitate movement for wildlife. Restoration efforts are underway for both river corridors.

SMMNRA Significance - Recreational Opportunities/National Park Gateway
The coastal and mountainous terrain of Santa Monica Mountains National Recreation Area offers an abundance of recreational, health, and educational benefits and contributes to clean air and water for the Los Angeles Region. Its proximity to one of the most densely populated regions of the United States provides a gateway to experience national park sites and other public parklands.

More than 18 million people live within close proximity to the area, including over half of California's population and more than 5% of the nation's total population. Many nearby local communities are currently deficient in providing adequate parks and recreational opportunities for residents. This is particularly true of communities in the City of Los Angeles. Neighborhoods around downtown Los Angeles have the highest population density within the study area and the greatest concentration of residents that lack adequate access to park resources. In addition, most of these residents are from predominantly minority and lower income communities (The City Project 2011).

SMMNRA authorizing legislation directs the NPS to manage resources for both the residents of the greater Los Angeles metropolitan area and for visitors to the region. As documented in the significance analysis in *Chapter 3*, the study area offers superlative opportuni-

The dynamics between areas of exceptionally high biodiversity and human settlement and development, including highly urbanized areas, provide unique opportunities for scientific research related to the urban wildland interface, the effects of anthropogenic disturbance, and ecological enhancement and restoration.

ties for public enjoyment. Expanding SMMNRA to include the Rim of the Valley Corridor area would add recreation areas, miles of trails, and hundreds of sites of historic interest, including local, state and nationally recognized historic sites and landmarks. Scenic vistas offer opportunities for wayside exhibits and ranger programs. Thousands of acres of undeveloped open space would provide future opportunities to expand trail systems and provide new opportunities for public enjoyment. Including these areas within SMMNRA would provide NPS with the authority to conserve open space and expend funds for trails and other facilities that would support public enjoyment of the area's significant resources.

Ongoing efforts to restore urban river corridors while creating riverside parks and trail systems will provide expanded recreational opportunities in the most densely populated areas of the greater Los Angeles metropolitan region. These urban river corridors traverse communities that have the least amount of parks and open space and lack adequate access to regional recreational opportunities in places like SMMNRA. For this reason, this study also considers an additional 5,800 acres of Los Angeles River corridor in the densely populated San Fernando Valley extending from the eastern San Monica Mountains to the Simi Hills at Ahmanson Ranch. Including this corridor in SMMNRA would allow NPS to more fully engage in existing federal, state, and local efforts to restore and provide recreational amenities along the Los Angeles River.

As described in *Chapters 2 and 3*, the study area contains many resources related to the rich and diverse heritage of southern California. These areas would provide new opportunities for the NPS to reach out to communities in the most densely populated areas of the region.

SMMNRA Significance - Archeology
Native American occupation in the Santa Monica Mountains spans more than 10,000 years, as reflected in a diversity of well-preserved archeological sites. American Indian groups, including the Chumash and Tongva, continue to have cultural ties to these resources and their associated landscapes.

Archeological sites determined eligible for listing in the National Register of Historic Places are located in subgeographic areas outside of SMMNRA. Sites in the western San Gabriel Mountains and foothills provide strong evidence of long-term occupation, seasonal encampment, resource procurement, and processing and storage sites, and regional trade networks (USFS 2005). The Simi Hills and Santa Susana Pass area also contain archeological resources of note, particularly with regard to rock art displays at the Burro Flats site and sites uncovered at Santa Susana Pass State Historical Park. Areas that are still largely undeveloped such as the and Conejo Mountain - Las Posas Hills, Santa Susana Mountains, and Upper Santa Clara River corridor, have not been extensively surveyed and provide great potential for scientific discovery and understanding of past lifeways.

SMMNRA Significance - Scientific Understanding

The Santa Monica Mountains provide an opportunity for understanding how to protect high biodiversity in a vast urban area. Additionally, the rich concentration of resources, which include an extensive range of native vegetation communities, archeological sites, and geologic and paleontological features, are all in close proximity to numerous research institutions, providing exceptional opportunities for scientific study.

As described in the evaluation of national significance in *Chapter 3*, the dynamics between areas of exceptionally high biodiversity and human settlement and development, including highly urbanized areas, provide unique opportunities for scientific research related to the urban wildland interface, the effects of anthropogenic disturbance, and ecological enhancement and restoration. The study area beyond SMMNRA offers many new opportunities for scientific understanding of biodiversity in a vast urban area, geology of the Transverse Ranges Province, paleontology and archeology.

The Santa Monica Mountains and the San Gabriel Mountains have a long history of research in geology, paleontology, and Mediterranean ecosystems. However, comparatively

few studies have been published on the natural and cultural resources of the Simi Hills, Santa Susana Mountains, and the Verdugo Mountains-San Rafael Hills. As a result, there is a high potential for scientific study to improve understanding of resource significance of these regions. Many of the lands proposed for boundary addition are likely to have undocumented archeological and paleontological resources that could lead to greater understanding about the people that lived in the region and the evolution of species over time. Including these areas within SMMNRA would provide new opportunities for NPS to conduct research and establish inventory and monitoring programs to inform efforts to protect significant resources.

SMMNRA Significance - Scenic Resources
Extending from Point Mugu to downtown Los Angeles, the rugged landscape and geologic features of the Santa Monica Mountains serve as an urban refuge and offer a variety of exceptional vistas from expansive ocean and mountain views and urban skylines to secluded canyons and miles of seashore.

The mountains and hills of the Rim of the Valley Corridor, all part of the Transverse Ranges Province, are largely undeveloped. Scenic vistas include rugged mountain landscapes, a wide range of interesting geologic features, lush canyons, waterfalls, and riparian areas. These areas provide a stark contrast to the urban valleys that lie within and provide a source of refuge for urban dwellers.

SMMNRA Significance - Filmmaking History
Santa Monica Mountains National Recreation Area's varied coastal and mountain landscapes, in close proximity to Hollywood, played a significant role in the film industry's transition from studio production to on-location filming, as represented by Paramount Ranch, one of the best remaining examples of an early movie ranch. These landscapes continue to provide backdrops for film production today.

Cultural resources within the study area outside of SMMNRA provide new opportunities to interpret significant places and events in film history expanding on this aspect of significance at SMMNRA. Learning about film history and experiencing the on-site filming that continues to take place in the Santa

Monica Mountains is a significant attraction for visitors to SMMNRA. Given the broader region's significant role in television and movie production, there are numerous sites in and around the study area that provide opportunities to expand this area of significance. For example, just outside of the study area along the Los Angeles River in the San Fernando Valley is the CBS Studio Lot, one of the first motion picture studios established in the San Fernando Valley. The community of Newhall in the Santa Clarita Valley contains many notable Hollywood movie sets and is the site of the Walk of Western Stars. Griffith Park, in the eastern Santa Monica Mountains outside of SMMNRA, Beale's Cut (Santa Susana Mountains), and Ahmanson Ranch (Simi Hills) were also iconic film location sites. Griffith Park is notable for its long use for location filming.

The topic of filmmaking has the potential for focused research (such as through a national historic landmarks theme study) which could identify additional sites of significance related to filmmaking. These resources would expand and enhance the significance of SMMNRA as it relates to the theme "Expressing Cultural Values, Visual and Performing Arts."

Conclusion

Including nationally significant resources and functioning wildlife corridors (approximately 313,000 acres of land) within SMMNRA would ensure long-term protection of nationally significant resources related to the purpose of SMMNRA.

Protection of Park Resources and Fulfillment of Park Purpose

The greatest threats to nationally significant resources at SMMNRA include loss of habitat connectivity and long-term population viability for some plant and animal species as a result of urban development and road construction; conversion of oak woodlands, chaparral and coastal sage scrub communities (to nonnative grasslands) as a result of increased fire intervals and invasive species; and existing stressors on air and water resources. Urbanization also leads to large mammal injury and death through vehicle collisions and rodenticide poisoning. Threats to biodiversity associated with increasing urbanization and potential loss of habitat connectivity are some of the primary reasons why legislators directed the

NPS to conduct a special resource study of the Rim of the Valley Corridor area. Urbanization also threatens cultural and paleontological resources. Many portions of the study area with high potential for scientific study of archeological sites and fossil resources have not been surveyed or inventoried.

Maintaining SMMNRA's habitat value and high biodiversity will depend in part on functional habitat connectivity. This is well documented because the South Coast Ecoregion of California has experienced more science-based planning and study related to conservation planning and connectivity, largely due to its high biodiversity and level of habitat fragmentation and loss (Spencer et al. 2010). Two-thirds of the essential wildlife corridors identified by the California Essential Habitat Connectivity Project related to SMMNRA are vulnerable to land use change that could further reduce the connectivity value of the area (Stoms, Jantz and Davis 2013). Because the region is still growing – southern California is expected to add another 4 million residents by 2035 – additional land will be needed to accommodate this growth which could cause further encroachment on habitat (SCAG 2012).

A boundary adjustment that would include the Rim of the Valley Corridor areas would provide the widest range of tools to protect resources including authority to expend funds to inventory, monitor, and study resources as well as to directly protect land through acquisition. Partnership efforts at SMMNRA have demonstrated that NPS authority to conduct research, coordinate planning and management with partners, inventory and monitor resources, and expend funding on facilities, programs, and land acquisition has facilitated the protection of resources and public enjoyment opportunities offered in the Santa Monica Mountains. Since the establishment of SMMNRA in 1978, protected lands within the Santa Monica Mountains have increased from 22% to 52%. Today, roughly 80,000 acres of the land within the 153,250-acre SMMNRA are preserved by a range of public agencies for resource protection and/or public enjoyment.

Climate Change

A wide body of scientific evidence shows that the global climate is heating up at un-

precedented rates threatening water supplies, habitat, air quality, and public health (Inter-governmental Panel on Climate Change 2007). Protecting the broader ecosystem setting associated with the Santa Monica Mountains will improve resiliency in the face of ecosystem stressors imposed by increasing temperatures. In the absence of this protection, it is likely that the potential effects of climate change would further exacerbate the impact of current threats to park resources. Climate modeling conducted for the region projects an increase of minimum winter temperatures of 2.1 – 2.8 degrees C in the Los Angeles area, while maximum summer temperatures are projected to increase by more than 4 degrees by 2100. As a result, fire frequency could increase 62-88% by the end of the century. The combination of large increases in temperature and relatively modest changes in precipitation can be expected to reduce the growth and recruitment of many plant species at SMMNRA. Greater fire frequency will make SMMNRA more sensitive to invasions of nonnative plants (Stoms, Jantz, and Davis 2013). Such threats could have a profound effect on the NPS' ability to protect significant park resources and fulfill the park purpose.

Enhanced protection of these areas and their connections to other significant habitat areas in the region may help to offset future habitat stressors from climate change. Protecting large landscapes and corridors through which plants and animals can move to such refugia, and assisting plants and animals in reestablishing themselves in new regions, may help conserve biodiversity.

Conclusion

Including study area resources in SMMNRA allows for greater protection of national recreation area resources and fulfillment of park purpose. Maintaining SMMNRA's habitat value and high biodiversity will depend in part on functional habitat connectivity and protection of the broader ecosystem. A boundary adjustment that would include the Rim of the Valley Corridor areas would provide the widest range of tools to maintain habitat connectivity and protect significant resources including authority to expend funds to inventory, monitor, and study resources, as well as to directly protect land through acquisition.

Agencies that currently cooperate with NPS in SMMNRA manage lands throughout the proposed boundary adjustment areas. Adding these lands to the SMMNRA would expand the efficient cooperative management approaches that have been applied in the Santa Monica Mountains for over 30 years.

Feasibility to Administer the Lands Added through the Boundary Adjustment

Feasibility criteria for a new park unit and for a boundary adjustment to an existing national park unit are similar to those considered for a new national park unit. The following analysis is based on the context provided in the feasibility evaluation for a new national park unit (*Chapter 3*). For example, the feasibility analysis in *Chapter 3* contains detailed descriptions of land use and ownership. All recommendations for boundary changes must also meet the following criteria:

The added lands will be feasible to administer considering their: 1) size, configuration, and ownership; 2) costs; 3) the views of and impacts on local communities and surrounding jurisdictions; 4) and other factors such as the presence of hazardous substances or exotic species.

Size, Configuration, and Ownership

Approximately 313,000 acres of land in the study area that are not already within the boundaries of SMMNRA or U.S. Forest Service managed areas contain nationally significant resources and provide for appropriate use and development to facilitate public enjoyment and achieve SMMNRA's purpose. The U.S. Forest Service managed areas would not need to be included this configuration, because the NPS and U.S. Forest Service have broad authority for cooperative management to achieve mutual objectives to protect resources and enhance public enjoyment opportunities.

Each of the subgeographic areas within the study area would provide opportunities to enhance protection of significant resources at SMMNRA and better achieve park purposes (*Table 4-1: SMMNRA Boundary Adjustment, Areas Eligible for Inclusion in SMMNRA*). Protection of adjacent wildlife corridors within the study area (Simi Hills, Conejo Mountain-Las Posas Hills, Verdugo and Santa Susana Mountains) would enhance long-term protection of SMMNRA's high biodiversity.

Congress recognized the need for protection of areas outside of the SMMNRA when it established the Santa Monica Mountains Zone as part of the 1978 authorizing legislation

(P.L. 95-625, 92 Stat. 3501, 3506, November 10, 1978). The Santa Monica Mountains Zone extends beyond the boundaries of the national recreation area and includes the entire Santa Monica Mountain range, incorporating Griffith Park and watershed and canyon slopes associated with the mountain range. Although local and state agencies are responsible for management of these areas, the Secretary of Interior is granting reviewing authority on projects involving federal funds, permits, and licenses that may affect the recreation area. The intent of this authority was to reduce downstream impacts on national recreation area resources when possible. A boundary adjustment including these lands would obviate the need for this authority, as it would provide the NPS with additional tools to assist in the protection of these areas.

Within these 313,000 acres, two boundary adjustment configurations are considered feasible additions to SMMNRA. *Chapter 5: Alternatives* explores these two different approaches to an SMMNRA boundary adjustment.

Urban Focused Boundary Adjustment

The first configuration (defined as alternative C in the chapter to follow) would expand the national recreation area to the north and the east, focusing resources in more urban areas, where there is a greater need for recreational opportunities and access to open space. Areas added to SMMNRA would include portions of the Santa Monica Mountain range outside of the existing park boundary, the Los Angeles River and Arroyo Seco corridors, portions of the Simi Hills and Santa Susana Mountains, and the Verdugo Mountains, comprising an area of approximately 173,000 acres. This boundary adjustment would best meet SMMNRA's legislative purpose to provide recreational and public enjoyment opportunities to residents of and visitors to the greater Los Angeles Metropolitan Area.

Including these areas in SMMNRA would also provide opportunities to connect open space and habitat between the Santa Monica and San Gabriel mountains. The convergence of coastal, montane, and desert influences in areas proposed for addition in alternative C support a variety of significant biological resources. This configuration would also include rich array of nationally significant historic re-

Table 4-1: SMMNRA Boundary Adjustment, Areas Eligible for Inclusion in SMMNRA

Subgeographic Area	Nationally Significant Resources Related to SMMNRA's Purpose	Public Enjoyment Opportunities Related to Park Purpose	Appx. Acreage
<i>Arroyo Seco</i>	Contains areas of high biodiversity including alluvial fan sage scrub, oak and walnut woodlands, and remnant riparian areas that facilitate wildlife movement providing nodal connectivity for wildlife between the Santa Monica Mountains, Verdugo Hills, Elysian Hills, and San Gabriel Mountains.	Contains resources related to the rich and diverse heritage of southern California. Provides new opportunities for the NPS to reach out to communities in the most densely populated areas of the region.	4,500
<i>Conejo Mountain-Las Posas Hills</i>	Contains wildlife corridors essential for sustaining biodiversity in the Santa Monica Mountains. Conejo volcanic soils support high levels of rare and endemic species that contribute to regional biodiversity. Scenic areas include rugged mountain landscapes.	Contains scenic mountains and hillsides and numerous protected recreation areas from large open spaces such as Wildwood Park and Conejo Canyons to small neighborhood parks. Provides new opportunities for the NPS to reach out to communities west of Calleguas Creek such as Camarillo, Port Hueneme, and Oxnard that have comparatively less access to parks and open spaces.	40,100
<i>Santa Monica Mountains (outside existing SMMNRA)</i>	Contains areas of high biodiversity including: high quality riparian habitat, such as white alder riparian woodland and forest, and California bay forest found in Griffith Park; and chaparral vegetation types that would enhance the quantity of this resource already found in SMMNRA. Provides opportunities to expand preservation of sites related to the history of filmmaking (e.g. Griffith Park).	Provides new opportunities for the NPS to reach out to communities in the most densely populated areas of the region. New opportunities exist for interpretive and educational programming related to the history of Los Angeles and filmmaking.	53,200
<i>Los Angeles River</i>	Contains resources related to the rich and diverse heritage of southern California. The river corridor also contains remnant riparian areas. Recent restoration studies and efforts provide the potential to restore habitat along the river corridor. This habitat facilitates wildlife movement providing nodal connectivity for wildlife between the Santa Monica Mountains, Verdugo Hills, Elysian Hills, and San Gabriel Mountains.	Offers exceptional opportunities to provide public enjoyment to area residents that currently lack adequate access to parks and open space. Inclusion in SMMNRA supports recent NPS efforts to conduct outreach efforts and programs in Los Angeles.	8,400 (2,600 within study area and 5,800 acres of river corridor in the San Fernando Valley)
<i>San Gabriel Mountain Foothills</i>	Contains areas of high biodiversity including: high quality riparian habitat; alluvial fan vegetation; and a wide diversity of chaparral communities. Scenic areas include rugged mountain landscapes, a wide range of interesting geologic features, lush canyons, waterfalls, and riparian areas.	The San Gabriel Mountain foothills feature many locally managed park and recreation areas ranging from large open spaces and wilderness parks to local community parks. Provides new opportunities for the NPS to reach out to communities in the densely populated areas of the San Gabriel Valley.	20,300
<i>Santa Susana Mountains</i>	Contains wildlife corridors essential for sustaining biodiversity in the Santa Monica Mountains. Contains areas of high biodiversity including: ancient relict plant communities (e.g. bigcone Douglas-fir and canyon live oak) communities at their northern or southernmost limits (e.g. valley oak savanna). Scenic areas include rugged mountain landscapes, rolling woodlands, lush canyons, and riparian areas.	Within the Santa Susana Mountains large open spaces with highly scenic landscapes and provides exceptional recreational opportunities including biking, hiking and equestrian opportunities. Opportunities exist to link open spaces and trail systems to improve recreational opportunities and access.	80,600

Table 4-1: SMMNRA Boundary Adjustment, Areas Eligible for Inclusion in SMMNRA (continued)

Subgeographic Area	Nationally Significant Resources Related to SMMNRA's Purpose	Public Enjoyment Opportunities Related to Park Purpose	Appx. Acreage
<i>Simi Hills (outside SMMNRA)</i>	<p>Contains wildlife corridors essential for sustaining biodiversity in the Santa Monica Mountains.</p> <p>Supports high biodiversity and an excellent example of native grassland.</p> <p>Contains prehistoric archeological sites related to the archeological significance of the Santa Monica Mountains.</p>	<p>Provides excellent opportunities to expand recreational opportunities and connections in the greater Simi Hills.</p> <p>Rich in both cultural and natural resources, the Simi Hills offer a variety of opportunities to interpret prehistoric use of the area.</p>	45,700
<i>Upper Santa Clara River Area</i>	<p>Contains areas of high biodiversity including: high quality riparian habitat, alluvial fan vegetation, and harbors the more sensitive plant community types related to riparian / riverine areas than any other portion of the study area.</p>	<p>Provides opportunities to expand regional recreational opportunities and trail connections.</p>	36,500
<i>Verdugo Mountains- San Rafael Hills</i>	<p>Area of high biodiversity that supports genetic interchange between otherwise isolated populations of plant species.</p>	<p>Provides opportunities to expand regional recreational opportunities and connections to residents of the densely populated San Gabriel and San Fernando valleys.</p>	24,000
Total Acreage			313,300

sources which are concentrated in the eastern portions of the study area. Considerable public enjoyment opportunities could be provided by adding the Los Angeles River and Arroyo Seco corridors, the Verdugo Mountains-San Rafael Hills, and areas in the broader Santa Monica Mountains.

Large Landscape Conservation Boundary Adjustment

The second configuration (defined as alternative D in the chapter to follow) would include all 313,000 acres determined eligible for inclusion in SMMNRA and therefore would provide greater inclusion of nationally significant resources and important regional wildlife corridors that support the area's high biodiversity. This boundary adjustment would provide the most opportunities for direct conservation of large areas of open space with high quality habitat in areas such as the Santa Susana Mountains, the Simi Hills, and Conejo Mountain-Las Posas Hills areas.

Ownership

As described in the feasibility analysis for a new park unit in *Chapter 3*, land use, ownership, and regulatory authorities within the study area are quite diverse ranging from large, undeveloped natural areas to dense urban cor-

ridors. Given the complexity of land use and ownership within the study area, a boundary adjustment to include additional areas within SMMNRA would be feasible using a collaborative management approach that retains existing ownership patterns and regulatory authorities as exemplified by current SMMNRA management.

While some of the lands in the study area are protected for conservation and recreation by other land management agencies and conservation organizations, inclusion of additional areas in the SMMNRA boundary would provide the opportunity for interagency coordination to achieve recreation and conservation goals and would provide the NPS with the authority to more fully invest in conservation, planning, and public enjoyment of the area. The NPS could also enter into cooperative management agreements with existing agencies and seek funds for land acquisition from willing sellers. A land protection plan would help set priorities for NPS land protection within the boundary adjustment area. However, given the number of parcels that would be included in the boundary adjustment the land protection plan could be complex and challenging to update on a regular basis.

Costs Associated with Operation, Acquisition, Development, and Restoration

Operational Costs

Operational costs of national park units vary widely, depending on the amount and type of resources managed, number of visitors, level of programs offered, and many other factors. *Chapter 5: Alternatives*, explores potential operational costs in more detail for each management alternative considered in this special resource study. Annual costs for a boundary expansion including portions of the Rim of the Valley Corridor outside of the Angeles National Forest (over 300,000 acres) to protect significant resources, conserve wildlife corridors, and provide new opportunities for public enjoyment could range from \$1 to \$3.5 million over the existing annual operating budget for SMMNRA (\$8.6 million in FY2012). The urban focused boundary adjustment would cost less than the large landscape conservation boundary adjustment configuration. However, the costs of each boundary adjustment configuration would largely depend on the management emphasis identified through implementation plans. Costs would primarily cover additional staffing to provide increased technical assistance to area communities for resource management and recreation planning, law enforcement, maintenance, and outreach and interpretive programs.

Given the close proximity of the study area to more than 18 million residents, and the significantly high concentration of biodiversity and cultural resources that would be protected, the NPS would be able to achieve a high level of resource protection and public enjoyment opportunities for relatively little additional investment in annual operational costs.

Land Acquisition Costs

As described in the “Feasibility” section of *Chapter 3*, land acquisition costs cannot be estimated without more specific proposals for land acquisition. NPS funds for land acquisition are currently very limited, and proposed acquisitions compete for national funds with many other worthy sites. Given the high cost of land in Los Angeles and Ventura counties land acquisition would be limited and strategic. Over the past thirty years, SMMNRA has purchased land in this manner. Priori-

ties for land acquisition would be identified in a land protection plan which establishes a range of land conservation approaches in addition to direct land acquisition. Subject to available funds and consistent with prior land acquisition efforts at SMMNRA, the NPS would likely consider land acquisition or land management in specific areas with significant resources or public enjoyment opportunities related to park purpose, and where there are interested willing sellers.

Collaborative management between the NPS and other land management agencies provides more advantages for obtaining land acquisition funding, a highly competitive process that requires considerable public and political support. Funding could also be obtained from multiple sources over time for priority lands as those areas become available for acquisition.

Overall costs for land acquisition would likely be higher for the large landscape conservation boundary adjustment area than the urban focused boundary adjustment area because the larger area includes more lands suitable for conservation through land acquisition.

Development Costs

Development costs for NPS units vary widely, depending on the types of existing and desired conditions and facilities. For the newly added areas, the NPS would invest funds to inventory and document park resources, for developing management or treatment plans and educational/interpretive materials for these resources, and for developing or improving facilities for visitors and for park operations. Specific costs would be dependent on management priorities and approaches identified through implementation planning and the location, size, and configuration of future land acquisition. Through cooperative management agreements, the NPS could also share facilities with existing agencies or share costs for new facilities as deemed necessary. Park office space already exists at SMMNRA headquarters and at several other sites in the area. Opportunities exist to share or lease additional space with partner agencies to accommodate to new positions that would support planning and management activities in the boundary adjustment area.

The urban focused boundary adjustment area contains more lands already protected for recreation and conservation; therefore, NPS funds might be more focused on interpretive programming and capital expenditures to expand/connect trail systems. The recent passage of a state bond measure by the California legislature to support conservation and recreation along the Los Angeles River would also supplement river conservation efforts and may result in new recreational opportunities where such efforts can provide multiple benefits (e.g. riverside parks that contain restored habitat and planted areas to remove silt and pollution from surface runoff water).

Conclusion - Costs

The NPS finds that operational costs for a boundary adjustment to the boundary of SMMNRA are feasible using the existing collaborative partnership-based park model exemplified by SMMNRA. Given the close proximity of the study area to more than 18 million residents, and the significantly high concentration of biodiversity and cultural resources that would be protected, the NPS would be able to achieve a high level of resource protection and public enjoyment opportunities for relatively little additional investment in annual operational costs. With the high cost of land in Los Angeles and Ventura counties, limited, strategic land acquisition would be feasible. Land acquisition would only be considered where landowners have expressed interest in selling. Costs for development would be dependent on management priorities and approaches identified through implementation planning and the location, size, and configuration of future land acquisition.

Impacts on Local Communities and Surrounding Jurisdictions

The social and economic impacts of a boundary adjustment to SMMNRA would largely be similar to the impacts described in *Chapter 3*, under the potential impacts of a new national park unit. Expansion of SMMNRA would likely have a wide range of economic and social impacts on the area. Most impacts would likely be beneficial. In FY 2011, SMMNRA generated 242 jobs and \$9 million in labor income. Visitor spending for FY 2011 was \$26.2 billion, of which \$17.2 billion came from non-local visitors (NPS 2013e).

Socioeconomic concerns identified during the public scoping process included requests for evaluating potential impacts to property values and the local economy, as well as potential effects on local regulatory authorities within and adjacent to the proposed area. As in the current SMMNRA boundary, for the boundary expansion areas each partner and jurisdiction would typically continue to retain land ownership, management, and decision-making authority for lands that they own. The Organic Act of 1916, which established the National Park Service, gives the Secretary of the Interior broad authority to establish regulations pertaining to other lands within authorized national park unit boundaries. Such regulations are found in 36 Code of Federal Regulations (CFR) Chapter 1. In SMMNRA, most NPS land management policies and regulations apply to lands owned by the NPS. However, exceptions are regulations pertaining to solid waste facilities, mineral extraction, and exercise of nonfederal oil and gas rights.

The regulation of solid waste disposal sites is required by 36 CFR Chapter 1, Part 6. These regulations prohibit the operation of any solid waste disposal site, except as specifically provided for, and govern the continued use of any existing solid waste disposal site within the boundaries of any unit of the national park system. For example, within SMMNRA, the Sanitation Districts of Los Angeles County obtains a permit from NPS to operate the Calabasas landfill in Agoura Hills.

Although mineral extraction activities currently do not take place in the existing SMMNRA boundary, NPS regulations pertaining to mineral exploration and development may apply to boundary adjustment areas where prospective operators hold mineral interests, unless or until these interests are purchased by the U.S. government. The purpose of NPS regulations is to implement the NPS Organic Act of 1916 by providing for reasonable protection of park resources and values that may be affected by the exercise of the mineral interests.

The extent to which such regulations would affect land uses would be dependent on what is specified in authorizing legislation, and the nature of the activities. Legislation would be required to expand the boundary of SMMN-

RA. It should be noted that through any resulting legislation, Congress can make determinations about uses and regulations within a specific park unit. For example, some national recreation areas are open to mineral leasing if specified resource protection and administrative objectives can be met. Congress would also specify which areas would be included or excluded.

Privately held lands would continue to be regulated by local land use authorities (cities and counties). If local development proposals have the potential to impact park resources SMMNRA staff will provide comments on such projects. Local jurisdictions could choose to use such comments to mitigate or limit the effects of development on SMMNRA resources. Land use planners frequently have the ability to direct the intensity or location of the development toward more durable areas and away from sensitive resources and/or to require setbacks or open space as part of development projects. Additional information on regulations related to mineral extraction and an assessment of land use and social and economic impacts related to these regulations is provided in the evaluation of land use impacts in *Chapter 6: Environmental Consequences*.

Potential Threats – Other Factors Such as the Presence of Hazardous Substances or Exotic Species

Existing resource degradation and threats to resources are described in *Chapter 3*. Urban development and increased fire frequency make native vegetation more vulnerable to invasion by nonnative species. The most vulnerable locations in SMMNRA include areas along roads and trails and disturbed landscapes. In SMMNRA, nonnative plant colonization is also more prevalent in grasslands and riparian areas compared to coastal sage scrub and chaparral communities (Stoms et al. 2012).

Impacts from climate change may increase or extend droughts, threatening area water supply, including for wildlife. Rising temperatures and altered rainfall may cause additional stress on native habitat and increase air pollution. Such changes could cause native and endemic plants to move northward and/or toward the coast, following the shifts in their preferred climate. Native and endemic plants in south-

ern California could move higher in elevation into cooler but highly vulnerable refugia. For example, the San Gabriel Mountains are predicted to be an area for native plants and animals seeking refuge as climate change begins to impact their habitat (Loarie et. al. 2008). Enhanced protection of these areas and their connections to other significant habitat areas in the region may help to offset future habitat stressors from climate change. Protecting large landscapes and corridors through which plants and animals can move to such refugia, and assisting plants and animals in reestablishing themselves in new regions, may help conserve biodiversity.

Threats from environmental contamination of specific parcels are likely to be found in some portions of the study area given the diversity of land uses. For example, the Santa Susana Field Laboratory located near the crest of the Simi Hills at the western border of the San Fernando Valley is the site of a former rocket engine test and nuclear research facility. The 2,849-acre field laboratory is currently the focus of a comprehensive environmental investigation and cleanup program, conducted by Boeing, the U.S. Department of Energy and the National Aeronautics and Space Administration (NASA), and overseen by the Department of Toxic Substances Control. Given the thousands of parcels of land that exist throughout the study area, parcel level evaluation of specific environmental contamination is not within the scope of this study. Any land acquisition would be dependent on future assessment to determine whether proposed acquisitions would meet NPS and Department of the Interior standards.

The Department of the Interior discourages acquisition of property contaminated with hazardous substances. Further, this policy states that contaminated lands should not be acquired unless otherwise directed by Congress, court order, or as determined by the Secretary of the Interior. Any property under consideration for NPS acquisition would therefore be assessed for environmental contaminants. If contamination exists, further evaluation would take place to determine the feasibility of managing the land given the potential transfer of liability and costs for remediation and/or restoration

Table 4-2: Feasibility Factors (Boundary Adjustment to SMMNRA) - Summary of Findings

Criteria	Findings
Size, configuration, and ownership	<p>Yes. Approximately 313,000 acres of land in the study area that are not already within the boundaries of SMMNRA or the Angeles National Forest contain nationally significant resources and provide for appropriate use and development to facilitate public enjoyment. Resources within these lands would expand and enhance the significance of SMMNRA.</p> <p>Within the 313,000 acres, two boundary adjustment configurations are considered feasible, one focuses on a portion of the area in the most densely populated areas of the study area (173,000 acres) focusing resources near urban areas where recreational opportunities are most deficient, the other configuration includes all areas eligible for a boundary adjustment (313,000 acres), providing the broadest array of tools to protect the broader landscape including regional wildlife corridors. Protection of adjacent wildlife corridors within the study area would enhance long-term protection of SMMNRA's high biodiversity. Considerable public enjoyment opportunities could be provided by adding the Los Angeles River and Arroyo Seco corridors, Verdugo Mountains-San Rafael Hills, and additional areas of the Santa Monica Mountains to SMMNRA. Such opportunities would enhance SMMNRA's ability to achieve its park purpose of providing public enjoyment opportunities for the greater Los Angeles metropolitan area.</p> <p>The study area includes a diverse array of land uses from large, undeveloped natural areas to dense urban corridors. Land ownership is also complex. Many federal, state, and local agencies and private landowners own and manage land within the study area. Cooperative/collaborative management as exemplified at SMMNRA would be a feasible NPS management approach given the complex land use and ownership patterns within the study area.</p>
Costs associated with acquisition, development, restoration and operation	<p>Yes. The NPS finds that costs associated with an adjustment to the boundary of SMMNRA is feasible using the collaborative partnership-based park model exemplified by SMMNRA. Through a boundary adjustment, the NPS would have enhanced opportunities for collaborative management with local, state and federal managers to protect natural and cultural resources, provide recreation, and offer interpretive and educational programs. Given the high cost of land in Los Angeles and Ventura counties, acquisition of limited, strategic sites and resources would likely be most feasible. Land acquisition would only be considered where there are willing sellers.</p>
Impacts on local communities and surrounding jurisdictions.	<p>Yes. The social and economic impacts appear to be largely beneficial. The establishment of a new national park unit in the study area would not necessarily establish new regulatory or land use authority over local governments or private lands within the boundary.</p>
Potential Threats – Other factors Such as the Presence of Hazardous Substances or Exotic Species	<p>Yes. Despite existing resource impacts and threats from urbanization and development, approximately 84% of the study area contains protected or unprotected undeveloped lands. A large portion of this area encompasses significant resources of high integrity. Although certain areas of the study area are degraded or threatened by degradation, opportunities exist to improve these areas through collaborative restoration efforts.</p>

Despite existing resource impacts and threats from urbanization and development, approximately 84% of the study area contains protected or unprotected undeveloped lands, which contain, or have the potential to contain, significant resources of high integrity. Because some areas of the study area have resource degradation or threats that would preclude direct NPS management, these areas might not be considered for NPS land acquisition should they be included in a boundary adjustment to SMMNRA. However, some degraded areas, such as the Los Angeles River, offer excellent opportunities to improve these areas through collaborative restoration efforts.

Overall Feasibility Conclusion (Boundary Adjustment Evaluation)

An adjustment to the boundary of SMMNRA is feasible using the existing collaborative partnership-based management model exemplified by SMMNRA, which respects the complex mix of existing land use, ownership, and

regulatory authorities (*Table 4-2: Feasibility Factors (Boundary Adjustment to SMMNRA) - Summary of Findings*). Many of the significant resources within the study area augment the national significance of SMMNRA and provide habitat connectivity essential for long-term preservation of the significant resources within the Santa Monica Mountains, thus warranting physical connection to the SMMNRA boundary and a seamless interagency management approach.

The NPS finds that operational costs for a boundary adjustment to the boundary of SMMNRA are feasible. Given the close proximity of the study area to more than 18 million residents, and the significantly high concentration of biodiversity and cultural resources that would be protected, the NPS would be able to achieve a high level of resource protection and public enjoyment opportunities for relatively little additional investment in annual operational costs. Given the high cost of land in Los

Table 4-3: NPS Tools and Authorities – Within Park Boundaries and in the Broader Region

National Park Service Authorities	Within NPS Boundary	Areas Beyond NPS Boundary
NPS direct land management*	X	
NPS funding and authority for land acquisition*	X	
NPS funding and authority for capital improvements such as trails, roads, and other facilities to support public enjoyment	X	
NPS funding for inventory and monitoring programs	X	
NPS cooperative conservation and recreation planning	X	X
NPS technical assistance for resource protection and recreation planning	X	X
NPS interpretive and educational programs	X	X
NPS cooperative agreements and interagency partnerships to protect natural resources (Service First Agreements, Executive Order 13552, Natural Resources Consolidated Act of 2008).	X	X
NPS ability to contribute financially to projects that protect wetlands, watersheds, and coastal resources if they benefit park resources (Consolidated Resources Act of 2008, Section 301). Financial contributions may not include land acquisition, regulatory authority, or infrastructure improvements.	X	X

* Note: NPS Management Policies 2006 and NPS regulatory authorities typically only apply to lands under NPS ownership. Land acquisition authority is restricted to authorized boundaries.

Angeles and Ventura counties, limited, strategic land acquisition would be feasible. Land acquisition would only be considered where landowners have expressed interest in selling. Costs for development would be dependent on management priorities and approaches identified through implementation planning and the location, size, and configuration of future land acquisition.

Socioeconomic impacts on local communities would largely be beneficial. The addition of new areas to SMMNRA would not necessarily establish new regulatory or land use authority over local governments or private lands within the boundary.

Despite existing resource impacts and threats from urbanization and development, approximately 84% of the study area contains protected or unprotected undeveloped lands, which contain, or have the potential to contain, significant resources of high integrity. Some degraded areas, such as the Los Angeles River, offer excellent opportunities to improve these areas through collaborative restoration efforts.

Protection Alternatives Considered

The final criterion to evaluate eligibility of a boundary adjustment is a determination of whether other alternatives for management

and resource protection are not adequate. *Chapter 5: Alternatives*, explores four alternatives that examine protection of the study area, two of which are boundary adjustments to SMMNRA (alternatives C and D). Other alternatives considered are: 1) a no action alternative (alternative A) that evaluates protection under current conditions and trends; and 2) Cooperative Conservation Partnership (alternative B) which would authorize and direct SMMNRA to facilitate the development of a cooperative conservation plan to identify shared goals for resource protection and public enjoyment in the Rim of the Valley Corridor area beyond SMMNRA.

Existing efforts underway in alternative A would continue to result in land protection efforts throughout the study area by NPS and other agencies. However, the degree to which NPS could engage in conservation of regional wildlife corridors and outreach efforts to urban communities would be limited by its existing authorities to work beyond the national recreation area boundary. *Table 4-3: NPS Tools and Authorities – Within Park Boundaries and in the Broader Region* provides a comparison of NPS authorities as they apply to areas within an NPS boundary and to areas beyond.

New partnership opportunities proposed in alternative B would achieve a greater level of protection for significant resources and

regional wildlife corridors over alternative A. Completion of a regional conservation plan as recommended in alternative B may result in the establishment of new parks and conservation of open spaces by local and state agencies outside of SMMNRA. Alternative B would also facilitate a greater technical assistance role for the NPS in the protection of resources and establishment of new recreational opportunities. Technical assistance could be provided for research efforts, restoration projects, trail planning, and interpretive and educational programming. However, NPS authorities, tools and resources outside of the SMMNRA boundary would continue to be restricted primarily to technical assistance, partnership efforts with other agencies, and educational programs.

Despite the advantage of expanded authorities and technical assistance opportunities explored in alternative B, a boundary adjustment in the study area would provide greater opportunities for land protection and new visitor opportunities. The boundary adjustment would give the NPS the authority to expend funds for land acquisition and capital improvements such as trail development and other facilities that would support public enjoyment of the area's resources. Additionally, the NPS could apply its current cooperative management agreement with California State Parks, the Santa Monica Mountains Conservancy, and the Mountains and Recreation Conservation Authority to areas outside of SMMNRA in the Rim of the Valley Corridor, expanding the efficient cooperative management approaches that have been applied in the Santa Monica Mountains for over 30 years. Given the complexity of ownership and management, high cost of land acquisition, and demands of a growing metropolitan region, having multiple agencies working in partnership has been necessary to leverage adequate resources for land protection. Since the national recreation area's establishment in 1978, public lands within SMMNRA have increased from 22% to 52%.

Although current conditions (alternative A) and additional tools and resources for regional cooperation (alternative B) would contribute to the long-term protection of SMMNRA, these alternatives would be less adequate than a boundary adjustment which would provide

NPS with the full range of protection tools and authorities to protect significant resources and provide public enjoyment opportunities.

Expansion of SMMNRA Significance

In addition to furthering the purpose of Santa Monica Mountains National Recreation Area (SMMNRA), the areas eligible for addition to SMMNRA also contain resources that would expand the national recreation area's significance. As described in the suitability evaluation in *Chapter 3*, the study area contains nationally significant resources that are not currently represented in the national park system. This includes a diversity of geologic and paleontological resources that are distinct from the resources of SMMNRA. Additionally, the numerous historic sites which are listed or eligible for listing in the National Register of Historic Places provide an opportunity to interpret a wide range of historical themes.

The eastern Santa Monica Mountains outside of SMMNRA contain many examples of nationally and regionally significant architecture. Most notable are the resources associated with the Case Study House Program which was significant in the nation for its concerted efforts to introduce Modern domestic architecture the broader public after World War II. The specific stories and subthemes represented by the Case Study House Program are distinct from those already represented in the national park system and SMMNRA specifically.

The Santa Susana Mountains were the location for the birth of the oil industry in southern California. Well No.4, Pico Canyon Oil Field National Historic Landmark, the first commercially successful oil well on the west coast of the United States. Pico Well No. 4 embodies a distinct aspect of American history not reflected in the national park system and the protected natural landscape surrounding Pico Well No. 4 NHL provides site context that is similar to the historic landscape during the period of significance, providing a rare opportunity for visitors to experience these resources in an environment similar to that of the 1880s.

Resources in the Santa Susana Mountains would also add to the diversity of rock forma-

tions and mountain ranges that illustrate and interpret the story of the Transverse Ranges. The Chatsworth, Towsley, and Las Virgenes formations in the study area would expand the significance of SMMNRA by representing fossil resources not found within SMMNRA.

The *San Gabriel Watershed and Mountains Special Resource Study* (NPS 2013f) concluded that the overall combination of cultural and natural resource values and themes represented by the San Gabriel Mountains and foothills is not comparable to any other national park unit or comparably managed area. Represented within these themes are unique geological features and dramatic geologic processes, a wide diversity of rare habitats located in close proximity given the dramatic changes in topography, and technological advances in the areas of astronomy, chaparral ecosystems and watersheds. The Upper Santa Clara River area examined in the *San Gabriel Study* also contains fossiliferous formations that are not represented in SMMNRA, including the Tick Canyon and Mint Canyon formations, adding to the diversity of fossil species already present in SMMNRA.

The Arroyo Seco corridor reflects an unusually high quantity and density of sites listed in the National Register of Historic Places, many of which have thematic connections to the area's national historic landmarks which include the Gamble House National Historic Landmark, the Rose Bowl National Historic Landmark, the Twenty-five Foot Space Simulator National Historic Landmark and the Space Flight Operations Facility National Historic Landmark. These resources represent themes that are not fully represented in the national park system including the Cold War and space exploration as well as outstanding examples of regional architecture associated with the Arts and Crafts Movement. The 8.2-mile Arroyo Seco Parkway is listed in the National Register of Historic Places as an historic district for its significance as the first freeway (a grade separated, limited-access, high-speed divided road) in the western U.S. The Arroyo Seco Parkway is also designated a National Historic Civil Engineering Landmark by the American Society of Civil Engineers (ASCE). In 2002, the Arroyo Seco was designated a Na-

tional Scenic Byway by the Federal Highway Administration. The Arroyo Seco corridor also includes a segment of Route 66.

Areas of potential national significance in the study area provide opportunities to interpret new aspects of history. These resources would need further evaluation to determine national significance. For example, the study area contains a wide range of resources that reflect efforts to store and transport water from the original water systems that supplied El Pueblo de Los Angeles to key components of the California Aqueduct, and numerous dams and reservoirs created for water storage. Portions of the Los Angeles Aqueduct and associated infrastructure that carry and store water from the Owens Valley are also located throughout the study area. Potentially significant sites in the study area related to water conveyance include the Zanja Madre, Crystal Springs, Owensmouth Cascades, Mulholland Dam and Hollywood Reservoir, Lower Franklin Dam, Stone Canyon Dam and Encino Reservoir. Should these resources be found to be nationally significant, they would contribute to expanding the significance of SMMNRA as it relates to the theme "Transforming the Environment."

The Los Angeles River corridor contains potentially significant resources related to the themes of "Manipulating the Environment and Its Resources" as reflected in the water conveyance and flood protection systems associated with the Los Angeles River, and "Protecting and Preserving the Environment," as related to efforts to enhance and restore the river.

Although Cold War and space exploration-related sites within the study area have not yet been assessed for national historic landmark eligibility, they have the potential to be found nationally significant. Should these resources be found to meet national historic landmark criteria, the Santa Susana Field Laboratory and other Cold War-related resources in the study area would expand the significance of SMMNRA by representing themes not fully reflected in the national recreation area or the broader national park system.

Overall Conclusion - Boundary Adjustment Evaluation

The study finds that resources within the Rim of the Valley Corridor meet the criteria for addition to the boundary of Santa Monica Mountains National Recreation Area (SMMNRA).

Protect significant resources and values, or to enhance opportunities for public enjoyment related to park purposes

The study finds that the addition of lands in the study area to SMMNRA would enhance protection of significant resources and expand opportunities for public enjoyment related to the purpose of SMMNRA. Areas eligible for addition to SMMNRA (approximately 313,000 acres of land) include: habitat types that contribute to the high biodiversity of the Santa Monica Mountains; functioning wildlife corridors; highly scenic landscapes; and archeological sites. Eligible areas also include thousands of acres of open space and recreation areas, miles of trails, hundreds of sites of historical value, and national historic trails which provide exceptional public enjoyment opportunities. Expanding SMMNRA to the east into the City of Los Angeles would provide new opportunities for the NPS to reach out to communities in some of the most ethnically diverse and densely populated areas in the United States.

Otherwise protect park resources that are critical to fulfilling park purposes

Including study area resources in SMMNRA allows for greater protection of national recreation area resources and fulfillment of park purpose. Maintaining SMMNRA's habitat value and high biodiversity will depend in part on functional habitat connectivity and protection of the broader ecosystem. A boundary adjustment that would include the Rim of the Valley Corridor areas would provide the widest range of tools to maintain habitat connectivity and protect significant resources including authority to expend funds to inventory, monitor, and study resources, as well as protection through land acquisition.

Feasibility to Administer Lands Added through the Boundary Adjustment

Added lands must be feasible to administer considering their size, configuration, and ownership; costs; the views of and impacts on local communities and surrounding jurisdictions; and other factors. Lands eligible for inclusion in SMMNRA include approximately 313,000 acres of land in the study area and along the Los Angeles River that are not already within the boundaries of SMMNRA. Eligible areas include the Santa Monica Mountains outside of the current boundary, the Arroyo Seco and Los Angeles River corridors, the San Gabriel Foothills, the Upper Santa Clara River corridor, portions of the Santa Susana Mountains and Simi Hills, and the Conejo-Las Posas Hills. These areas contain nationally significant resources and provide for appropriate use and development to facilitate public enjoyment related to park purpose. Areas determined ineligible for inclusion in a boundary adjustment include lands within the San Gabriel Mountains that are currently managed by the U.S. Forest Service.

Within these 313,000 acres, two boundary adjustment configurations are considered feasible additions to SMMNRA. Chapter 5, Alternatives, explores these two different approaches to a SMMNRA boundary adjustment. The first configuration (defined as alternative C) would expand the national recreation area to include 173,000 acres to the north and the east, focusing resources in more urban areas, where there is a greater need for recreational opportunities and access to open space. The second configuration (defined as alternative D) would include all 313,000 acres determined eligible for inclusion in SMMNRA and therefore would provide greater inclusion of nationally significant resources and important regional wildlife corridors that support the area's high biodiversity.

The cost of an addition to the boundary of SMMNRA is feasible using the existing collaborative partnership-based management model exemplified by SMMNRA, which respects and builds upon the complex mix of existing land

use, ownership, and regulatory authorities. A boundary adjustment would enhance opportunities for collaborative management with local, state, and federal managers to protect natural and cultural resources and provide recreation, public access, and other compatible uses. Given the high cost of land in Los Angeles and Ventura counties, acquisition of priority sites and resources would likely be most feasible. Land acquisition would only be considered where there are willing sellers.

The social and economic impacts of a boundary adjustment appear to be largely beneficial. The addition of new areas to SMMNRA would not necessarily establish new regulatory or land use authority over local governments or private lands within the boundary.

Adequacy of Protection Alternatives Considered

This report determines that a boundary adjustment would provide the greatest opportunity for protection of resources related to SMMNRA's purpose when compared to other protection alternatives evaluated in the draft study report. Although other agencies and organizations would provide some level of protection under current conditions (alternative A) and additional NPS tools and resources for regional cooperation (alternative B) would

contribute to the long-term protection of SMMNRA, a boundary adjustment would provide NPS with the fullest range of conservation tools and authorities to protect significant resources and provide public enjoyment opportunities. These tools and authorities include direct land conservation by the NPS to protect the broader ecosystem and funding to provide facilities that support recreation and public enjoyment.

Broadening the NPS' ability to partner beyond the current SMMNRA authorized boundary would expand the efficient cooperative management approaches that have been applied in the Santa Monica Mountains for over 30 years. The NPS would be able to expand its current cooperative management agreement with California State Parks, the Santa Monica Mountains Conservancy, and the Mountains and Recreation Conservation Authority, thus allowing for new visitor opportunities, scientific research and study, and coordinated management of essential wildlife corridors. Given the complexity of ownership and management, high cost of land acquisition, and demands of a growing metropolitan region, having multiple agencies working in partnership has been necessary to leverage adequate resources for land protection.