



**MOUNTAINS RECREATION & CONSERVATION AUTHORITY**  
Los Angeles River Center and Gardens  
570 West Avenue Twenty-six, Suite 100  
Los Angeles, California 90065  
Phone (323) 221-9944 Fax (323) 441-8691

February 29, 2016

Rorie Skei  
Chief Deputy Executive Director  
Santa Monica Mountains Conservancy  
570 Ramirez Canyon Road  
Malibu, California 90265

**Proposition 1 Competitive Grant Application –  
Project Planning and Design**

Dear Ms. Skei,

I am pleased to present the enclosed application for a Project Planning and Design grant for the Arroyo Sequit Creek project. The MRCA requests a grant in the sum of \$250,000 from the Water Quality, Supply, and Infrastructure Improvement Act of 2014 (Proposition 1).

The proposed grant would fund project planning and design for watershed protection activities, and activities related to acquisition and feasibility analysis at Camp Bloomfield, in unincorporated Los Angeles County. Arroyo Sequit runs through the site, which also drains minor tributary canyons. In fact, Leo Carrillo State Park is directly downstream. The camp facilitates up to 200 people and contains accommodations for visitors with mobility impairments and other disabilities. The site offers opportunities to add sustainable water management, such as erosion protection, stormwater capture, bio-swales, and wastewater treatment. These features, combined with a location where visitors are immersed in a natural resource-rich environment, make the facility a unique opportunity to protect water and coastal resources and demonstrate sustainable water management practices.

Please refer to the enclosed materials that describe the proposed grant and how it fits the Conservancy's Evaluation Criteria. If you have any questions regarding this, please contact Cara Meyer at (323) 221-9944, extension 117.

Sincerely,

A handwritten signature in black ink, appearing to read "George Lange".

George Lange  
Chairperson

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**NARRATIVE**

The proposed grant would fund project planning and design related to fee acquisition and capital improvements at an existing camp in unincorporated Los Angeles County. The Arroyo Sequit creek runs through the property, which also drains minor tributary canyons. If this property is not acquired for conservation-related purposes, it would be available for residential development, or conversion to a commercially operated camp. Acquisition of the land will not only protect it from development and ensure public use, but allows for a multiple-objective project that incorporates stormwater management, nature education, revitalizes the area, and creates connections between recreational spaces and communities. The likelihood of a new development or commercial operation resulting in these benefits or more sustainably managed natural resources (including the creek) is very low. Project planning and design work is required at this time to put together the justification for property acquisition, as well as identify opportunities for capital improvements and best management practices that would result in protection of the watershed's resources.

Project planning and design describes a range of activities that prepare a potential project to the point that capital funding can be secured for implementation. For this project, the project planning and design effort will extend throughout escrow, and for some period of time thereafter to implement capital improvements and other watershed protection activities. Because the property includes over 20 buildings of uncertain age and construction, and few/no as-builts or architectural plans are available, the planning work will include a general assessment of each structure's condition.

The proposed project would promote and implement portions of the Santa Monica Mountains Comprehensive Plan, including the following policies:

*1 – Resource Protection. Development should be restricted in areas most suited for recreation or in areas needing special protection to retain and protect valuable and unique environmental resources.*

*11 – Preference for Recreational Land Uses. Residential density should be restricted where residential traffic and recreational traffic compete for limited road capacity.*

*25 – Educational Use of Mountains. The use of the Santa Monica Mountains as an educational resource should be expanded.*

*53 – Accessibility. Access to and use of the recreation resources should be made available to all segments of the public.*

None of these policies would be implemented by a commercial camp or residential development. Such uses would also most likely result in additional portions of the Arroyo Sequit and other drainages to be channelized and/or piped. This condition, and the resulting damage to the water resources of the Arroyo Sequit watershed, will be avoided

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through implementation of the proposed project. Development of the property would also result in increased Greenhouse Gas (GHG) emissions. These can be avoided through the addition of on-site solar power generation, and the replacement of highly flammable pines with other trees such as Coast Live oaks. The project's GHG benefits are quantified in Attachment A, based on assumptions regarding the number of new trees planted.

Monitoring and reporting on the progress and effectiveness of the project will occur via written project status reports. After the project's completion, copies of final plans and other materials will be provided upon request.

Description of Property

The property (APNs 4472-016-012, 4472-017-002) is located in western Los Angeles County. It is accessed from Mulholland Highway via an easement over privately held land. The camp facilities are currently used by a non-profit foundation. Leo Carillo State Park is directly downstream to the south. A portion of the northern boundary abuts National Park Service property, and NPS owns the land on the opposite site of Mulholland as well.

The camp can hold up to 250 people overnight and a portion of the site is usable by visitors with mobility impairments and other disabilities. The camp facilities include cabins, a swimming pool, dining facilities, recreational fields and equipment, a fishing pond, hiking trails and a caretaker residence.

The site offers opportunities to add sustainable water management, such as erosion protection, stormwater capture, bioswales, and wastewater treatment. These features, combined with a location where visitors are immersed in a natural resource-rich environment, make the facility a unique opportunity to protect water and coastal resources and demonstrate sustainable water management practices. Multiple ecosystem benefits from the project would include these water-related items, in addition to recreation, public use opportunities, education and interpretation, and benefits related to carbon sequestration.

The property is not located in or adjacent to a disadvantaged community. Disadvantaged communities would still benefit from public ownership of the property, because an MRCA-operated camp would allow us to incorporate this location as part of existing programs and outreach targeted to residents of low-income and park poor areas.

**BUDGET**

- 1) Appraisal and Review ..... \$15,000
- 2) Title Report, Survey, Legal Description ..... \$15,000
- 3) MRCA staff ..... \$160,000
- 4) Engineering ..... \$30,000
- 5) Condition Assessment of Structures..... \$30,000

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No matching funds are available for this project.

### **TIMELINE**

The proposed grant activities will be completed approximately 1-2 years after approval. It is important to do this planning work now because the current camp operator may vacate the property within a year and a land sale is expected.

### **RESPONSE TO EVALUATION CRITERIA**

**Project achieves the purposes of Proposition 1 per Water Code Section 79732(a).**

The proposed Arroyo Sequit Project Planning and Design project will involve the protection and restoration of California rivers, lakes, streams and watersheds. The proposed grant achieves eight (8) Proposition 1 purposes:

1) Protect and increase the economic benefits arising from healthy watersheds, fishery resources, and instream flow.

The proposed project will protect benefits from healthy watersheds and instream flow by ensuring that Arroyo Sequit is not degraded by development and improving Steelhead habitat. Economic benefits of the project's implementation will be studied part of the planning. More information regarding the property will be beneficial during fee negotiations, potentially reducing the amount of public funds used for acquisition.

2) Implement watershed adaptation projects in order to reduce the impacts of climate change on California's communities and ecosystems.

The project will implement watershed adaptation activities by converting a portion of the site's electricity supply to on-site solar, replacing highly flammable pines with more sustainable tree species, and best management practices for stormwater. The feasibility and cost to implement these elements will be studied during planning.

4) Protect and restore aquatic, wetland, and migratory bird ecosystems, including fish and wildlife corridors and the acquisition of water rights for instream flow.

Protection of the property will avoid damage to the aquatic ecosystem of Arroyo Sequit, both on site and downstream at Leo Carillo State Park. The planning work will identify opportunities to sustainably manage the site's water resources.

6) Remove barriers to fish passage.

If the property were to be developed for residential or commercial purposes, new barriers to fish passage could occur. Opportunities to improve passage for endangered Steelhead trout and other fish will be studied during planning.

8) Implement fuel treatment projects to reduce wildfire risks, protect watersheds tributary to water storage facilities, and promote watershed health.

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Once the property is in public ownership, fuel treatment projects will be undertaken in such a way to reduce wildfire risks and promote watershed health. Currently the site contains many pine trees that are highly flammable and put the area at risk for wildfire. Once in public ownership, a replacement program to remove these species and plant oaks and other native trees could be implemented.

9) Protect and restore rural and urban watershed health to improve watershed storage capacity, forest health, protection of life and property, stormwater resource management, and greenhouse gas reduction.

The project will protect watershed health by improving water quality downstream, sustainably managing stormwater on site, protection of critical habitat for Steelhead trout, and preventing development that would have detrimental effects.

10) Protect and restore coastal watersheds, including, but not limited to, bays, marine estuaries, and nearshore ecosystems.

The property is in a coastal watershed and will result in protection of those ecosystems.

11) Reduce pollution or contamination of rivers, lakes, streams, or coastal waters, prevent and remediate mercury contamination from legacy mines, and protect or restore natural system functions that contribute to water supply, water quality, or flood management.

The planning work will study ways to restore natural system functions, including reduction of pollution into, and erosion of, Arroyo Sequit.

12) Assist in the recovery of endangered, threatened, or migratory species by improving watershed health, instream flows, fish passage, coastal or inland wetland restoration, or other means, such as natural community conservation plan and habitat conservation plan implementation.

Arroyo Sequit is critical habitat for the endangered Steelhead trout. The project will benefit the Steelhead trout by preventing further degradation of the waterway and sustainably managing the site's runoff. In addition, the project will result in improved general watershed health through sustainable management practices, including maintaining instream flows and activities that benefit all species in the watershed.

**The project will provide multiple benefits related to water quality, water supply, and/or watershed protection and restoration.**

The Camp Bloomfield property offers opportunities to add sustainable water management practices that benefit water resources, such as erosion protection, stormwater capture, bioswales, wastewater treatment, and riparian habitat protection. Multiple benefits from the project would also include habitat enhancement, recreation, public access opportunities, education and interpretation, air quality enhancement and benefits related to carbon sequestration.

**The project results in more reliable water supplies pursuant to the California Water Action Plan.**

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The planning work will assess opportunities to infiltrate stormwater in landscaped areas, thereby incrementally reducing the amount of water that is required to be pumped from the site's well. All new planting will be native species that are adapted to the climate and natural water regime.

**The project results in restoration or protection of important species and habitat pursuant to the California Water Action Plan.**

As noted in the California Water Action Plan, California's once robust native fish populations are at or near historic lows. Arroyo Sequit is listed as critical habitat for the Steelhead trout by NOAA<sup>1</sup>. The project will result in protection for the trout by preventing development that would have a negative impact on stream quality. The project planning will include considerations for sustainable management practices to benefit the trout, and other watershed species.

**The project results in more resilient and sustainably managed water infrastructure pursuant to the California Water Action Plan.**

Through the prevention of a larger development footprint, the project will result in more sustainably managed water infrastructure. A new development would likely result in increased runoff and a greater need for flood protection structures. By eliminating the possibility of these new impacts to the region's infrastructure, the proposed project meets this objective of the California Water Action Plan. The planning will include analysis and feasibility of changes to the Arroyo Sequit.

**The project employs new or innovative technology or practices, including decision support tools that support the integration of multiple jurisdictions, including, but not limited to, water supply, flood control, land use, and sanitation.**

While the planning work itself is not a new or innovative practice, one of the things that will be examined is state-of-the-art practices to manage water resources on site. All available decision support tools, including County GIS and NPS data, will be utilized as feasible.

**Applicant has proven that implementation of the project is feasible.**

Existing MRCA staff will have the expertise to undertake the necessary project planning and design tasks, and has many years of experience doing so. Once a grant is secured, the funding will be incorporated into the agency's annual budget.

**Applicant has financial capacity to perform project on a reimbursable basis.**

The MRCA has the financial capacity to perform this project on a reimbursable basis. MRCA has been implementing capital projects on a reimbursable basis for many years, and anticipates reimbursable payments in our budgets. MRCA also maintains a line of credit that can be drawn upon in the event of an extended delay.

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<sup>1</sup>

[http://www.westcoast.fisheries.noaa.gov/publications/gis\\_maps/maps/salmon\\_steelhead/critical\\_habitat/steelhead/steelhead\\_sc\\_ch.pdf](http://www.westcoast.fisheries.noaa.gov/publications/gis_maps/maps/salmon_steelhead/critical_habitat/steelhead/steelhead_sc_ch.pdf)

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**Applicant, or active project partner, has successfully completed multiple projects of similar size and scope.**

MRCA, founded in 1985, is a local public agency exercising joint powers of [Santa Monica Mountains Conservancy](#), the [Conejo Recreation and Park District](#), and the [Rancho Simi Recreation and Park District](#). MRCA's mission is to complement the work of these and other agencies in protecting land and public access to natural lands in southern California mountains. Since its inception, the MRCA has designed, planned and constructed scores of small and large projects throughout Los Angeles. The MRCA currently manages over 75,000 acres of parkland and holds fee title to approximately 10,000 acres.

MRCA has completed Project Planning and Design for a multitude of projects that similar in size, budget, scope and duration. These include PP&D work for various sub-regions of the Santa Monica Mountains, various sub-regions of the Los Angeles River watershed, King Gillette Ranch and Puerco Canyon Park. All of the projects listed above bear similarities to the proposed Project.

**The project is a partnership between two or more organizations and each organization has committed to contributing toward project implementation.**

MRCA is a local public agency exercising joint powers of the Santa Monica Mountains Conservancy, the Conejo Recreation & Park District, and the Rancho Simi Recreation & Park District pursuant to Section 6500 *et seq.* of the Government Code. These three entities each have a voting member of MRCA's Governing Board, which approved the proposed grant application on October 7, 2015. The site lies within the Santa Monica Mountains National Recreation Area, a cooperatively managed unit of the National Park Service.

**Completion of the project would assist a government agency in fulfilling a water resources protection, watershed ecosystem restoration or multi-benefit river parkway plan.**

The Arroyo Sequit watershed project area is within the *Subregional Plan for the North Santa Monica Bay*, in the *Greater Los Angeles County Integrated Regional Water Management Plan* (IRWMP)<sup>2</sup>. The project will contribute to four of the subregion's five objectives:

- Improve Water Supply – through operational water conservation measures and new capital improvements
- Improve Water Quality – by finding opportunities on site for stormwater capture and/or biofiltration
- Enhance Habitat – by preventing development and identifying wildlife-friendly management practices
- Enhance Open Space and Recreation – by converting the property to public ownership

Furthermore, Leo Carillo beach is listed as an impaired water body (coliform bacteria) pursuant to the Clean Water Act, and completion of the project would assist in improvement of this condition downstream.

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<sup>2</sup> <http://www.ladpw.org/wmd/irwmp/index.cfm?fuseaction=update2013>

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**The project provides a plan or feasibility study that enhances cooperative watershed health protection and restoration important to two or more organizations.**

The result of the subject grant will be an acquisition and implementation plan for the Camp Bloomfield property, and guiding principles of the planning will be to protect, restore and enhance watershed health. The project is located within the Santa Monica Mountains National Recreation Area, a unit of the National Park Service, and lies directly upstream from a unit of California State Parks. It is also within the California Coastal Zone. The water resources of the Arroyo Sequit are within the purview of Los Angeles County.

**Applicant, or project partner, has 1+ years' experience maintaining and operating projects of similar size and scope.**

MRCA staff have been performing project planning and design for parklands since the agency's inception in 1985. In addition, MRCA has been managing land in the region, and has designed, planned and constructed scores of small and large projects throughout Los Angeles.

**The project implements a major component of an existing relevant plan related to a major recreational public use facility or watershed ecosystem restoration plan.**

As noted above, the project contributes to implementation of IRWMP objectives. It also will implement the following components of the National Park Service's General Management Plan for the Santa Monica Mountains National Recreation Area's<sup>3</sup> Preferred Alternative:

- Exceptional education opportunities that do not compromise resource preservation and serve a diverse public would be provided.
- Development would take place only in previously disturbed areas.
- Moderate use areas would act as a buffer for the preservation area.

**The project provides a high quality access point for nearby open space, parkland, regional multi-modal trails, or water-based recreation.**

The planning work will study whether the site can support a new access point for public use. Converting the property to public ownership will allow camp guests to access the adjacent State and National Park lands, as well as nearby trails including the Malibu Springs Trail, Nicolas Ridge Trail, and via Leo Carillo State Park, the California Coastal Trail and Yellow Hill Fire Road<sup>4</sup>.

**Applicant has conducted outreach to the affected communities.**

Due to the confidentiality needed for a successful land acquisition, no immediate outreach is planned. Where appropriate, the project will include public meetings to discuss the status of the project.

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<sup>3</sup> <http://www.nps.gov/samo/learn/management/gmp-general-management-plan-documents.htm>

<sup>4</sup> <https://trails.lacounty.gov/Trail/191/Malibu-Springs-Trail>; <https://trails.lacounty.gov/Trail/206/Nicholas-Ridge-Trail>;  
<https://trails.lacounty.gov/Trail/110/California-Coastal-Trail>; <https://trails.lacounty.gov/Trail/305/Yellow-Hill-Fire-Road>.



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**The project includes interpretive programming or personal interpretation, and a plan to reach community audiences with meaningful information about a watershed resource.**

The planning work will include identifying opportunities for community engagement. Once the property is in public ownership, the interpretive programming for the site will be targeted toward stewardship and conservation of the Arroyo Sequit watershed's resources, such as the critical habitat for Steelhead trout. Any public meetings held for the subject project will include some meaningful information about such resources.

**The project adds visitor-serving amenities, accessibility, and public safety improvements to public parkland with multiple ecosystem benefits.**

Opportunities for these items will be identified and studied as part of the planning work. The property itself already has multiple ecosystem benefits, which will be preserved if converted to public use. The primary purpose of any capital improvements will be to serve visitors and improve accessibility and public safety.

**The project provides non-personal interpretive elements that will significantly enhance appreciation and enjoyment of a watershed resource.**

Opportunities for these items will be identified and studied as part of the planning work.

**The project creates a new venue for education and/or interpretation activities that promote water conservation and stewardship, or enhances an existing venue.**

The existing camp facilities are a venue for education and interpretation activities. Once the property is in public ownership, the educational and interpretive programming for the facility will be targeted toward stewardship and conservation subjects. Capital improvements will enhance the existing venue.

**The project results in new public access to a watershed resource with high interpretive and/or educational value, or enhances existing access.**

Conversion of the property to public ownership will provide new public access to the Arroyo Sequit itself for camp guests. Because the site already contains parking, restrooms, and other visitor amenities (not to mention the overnight camp facility) it has high interpretive and educational value compared to the majority of the watershed. A greater variety of people, with varying abilities, will now be able to visit the property and learn about the Arroyo Sequit than previously.

**Project will benefit specially protected species pursuant to the California Wildlife Protection Act of 1990.**

By preventing development of the property, the project will benefit the local mountain lion population. All improvements will be planned to avoid negative effects on wildlife corridors and habitat.

### **Extra Consideration Points**

#### **Quantifiable Carbon reduction Points**

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**The project develops or maintains multi-use trails that connect communities, provides access to public resources and reduces vehicle miles traveled.**

Within the project area, the project planning and design work will include analysis of all trail connection possibilities, and other public access opportunities. The adjacency of State and National Park lands will provide opportunities for these connections. Converting the site to public ownership inherently provides access to public resources.

**The project engages local communities through outreach, education, and interpretation regarding long-term stewardship and climate change awareness.**

All public information regarding the results of the project planning and design work will contain education about the project's environmental benefits, stewardship and climate change issues. The planning work will include identifying opportunities for interpretive elements that focus on these elements. Due to the confidentiality needed for a successful land acquisition, no immediate outreach is planned.

**Additional Criteria**

**Completion of the project would assist in fulfilling a Federal water resources protection or watershed ecosystem restoration plan.**

Section 303 of the Federal Clean Water Act requires that each State identify waters where the quality is impaired for applicable standards. The list of impaired waters, called the §303(d) list, evaluates water bodies in terms of pollution levels, the severity of pollution, and the beneficial uses. Where quality is impaired, a total maximum daily load (TMDL) is required to be established for each pollutant. The Arroyo Sequit drains into Leo Carillo beach, which is listed as impaired for coliform bacteria<sup>5</sup>.

**Project utilizes a local job training entity for a portion of the work.**

The project does not include the use of a local job training entity. The tasks needed to complete the project planning and design are not entry-level skills.

**Project has secured matching funds of at least 25 percent of total project costs.**

No matching funds are available.

**Project is within 1 mile of public transportation.**

There is no public transportation within 1 mile.

**Project results in additional uses for users of a wide range of ability levels.**

All improvements planned with the subject grant will be designed for full ADA accessibility and compliance with the California Building Code. Some of the existing site improvements already provide accessibility, and converting the property to public uses will add to the opportunities available.

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<sup>5</sup> [http://www.waterboards.ca.gov/water\\_issues/programs/tmdl/2010state\\_ir\\_reports/01742.shtml#4262](http://www.waterboards.ca.gov/water_issues/programs/tmdl/2010state_ir_reports/01742.shtml#4262)

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**Appendix A: Carbon Emissions Calculations**

See attached report from the “i-Tree Design” tool.



**Total Projected Benefits (2016-2056) - Over the next 40 years, based on forecasted tree growth, i-Tree Design projects total benefits worth \$57,821:**

- \$16,102 of stormwater runoff savings by intercepting 8,797,728 gallons of rainfall
- \$36,939 of air quality improvement savings by absorbing and intercepting pollutants such as ozone, sulfur dioxide, nitrogen dioxide, and particulate matter; reducing energy production needs; and lowering air temperature
- \$4,780 of savings by reducing 492,293 lbs. of atmospheric carbon dioxide through CO<sub>2</sub> sequestration and decreased energy production needs and emissions

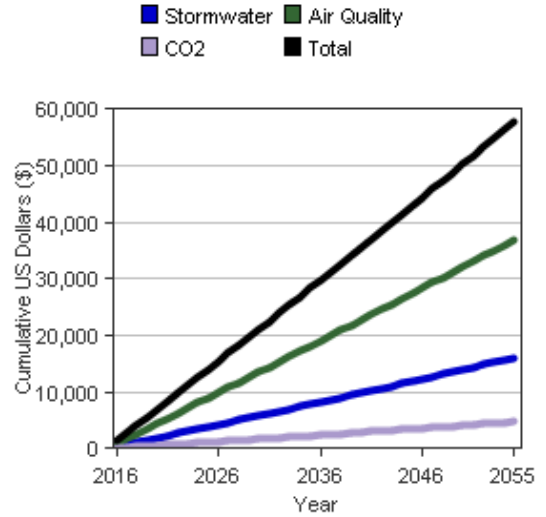


Figure 1. Tree benefit forecast for 40 years

■ Stormwater ■ Air Quality ■ CO2

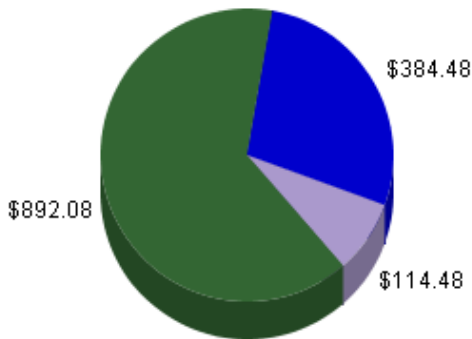


Figure 2. Annual tree benefits for 2016

**Current Year - For 2016, i-Tree Design estimates annual tree benefits of \$1,391.04:**

- \$384.48 of stormwater runoff savings by intercepting 209,901 gallons of rainfall
- \$892.08 of air quality improvement savings
- \$114.48 of carbon dioxide reduction savings

A cooperative initiative between:





**Future Year - In the year 2056, based on forecasted tree growth, i-Tree Design projects annual benefits of \$1,505.52:**

- \$424.44 of stormwater runoff savings by intercepting 231,857 gallons of rainfall
- \$955.80 of air quality improvement savings
- \$125.28 of carbon dioxide reduction savings

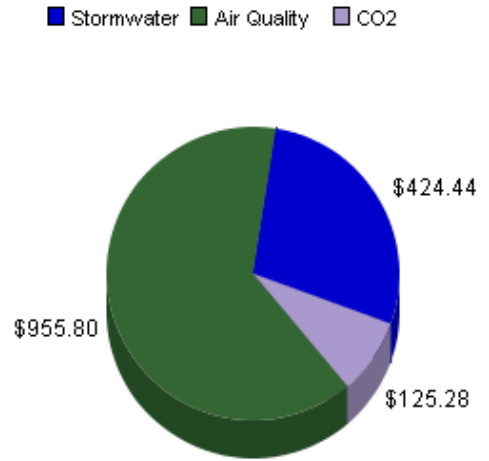


Figure 3. Annual tree benefits for the year 2056

■ Stormwater ■ Air Quality ■ CO2

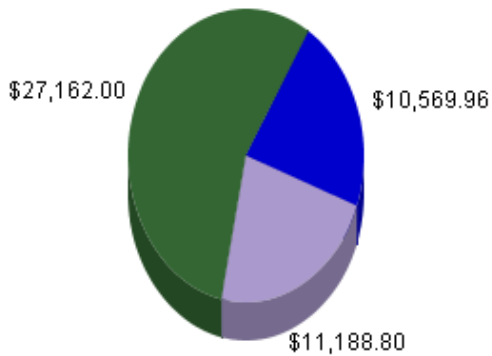


Figure 4. Total benefits to date

**Total Benefits to Date - Over the life of the tree(s) so far, i-Tree Design calculates total benefits worth \$48,921:**

- \$10,570 of stormwater runoff savings by intercepting 5,776,705 gallons of rainfall
- \$27,162 of air quality improvement savings
- \$11,189 of carbon dioxide reduction savings

A cooperative initiative between:





Individual Tree Benefits							
Tree	DBH (in)	Condition	Location to Structure	Benefits			
				Current Year (2016)	Future Year (2056)	Projected Total (2016-2056)	Total to Date
1. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
2. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
3. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
4. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
5. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
6. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
7. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
8. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
9. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
10. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
11. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
12. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
13. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
14. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453

A cooperative initiative between:





15. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
16. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
17. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
18. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
19. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
20. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
21. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
22. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
23. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
24. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
25. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
26. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
27. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
28. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
29. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
30. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
31. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453

A cooperative initiative between:





32. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
33. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
34. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
35. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
36. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
37. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
38. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
39. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
40. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
41. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
42. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
43. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
44. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
45. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
46. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
47. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
48. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453

A cooperative initiative between:







49. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
50. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
51. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
52. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
53. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
54. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
55. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
56. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
57. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
58. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
59. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
60. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
61. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
62. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
63. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
64. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
65. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453

A cooperative initiative between:





66. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
67. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
68. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
69. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
70. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
71. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
72. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
73. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
74. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
75. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
76. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
77. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
78. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
79. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
80. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
81. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
82. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453

*A cooperative initiative between:*





83. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
84. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
85. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
86. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
87. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
88. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
89. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
90. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
91. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
92. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
93. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
94. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
95. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
96. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
97. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
98. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
99. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453

A cooperative initiative between:





100. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
101. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
102. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
103. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
104. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
105. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
106. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
107. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
108. Coastal live oak; California live oak	32	Excellent	N/A	\$12.88	\$13.94	\$535	\$453
<b>Total</b>				<b>\$1,391.04</b>	<b>\$1,505.52</b>	<b>\$57,821</b>	<b>\$48,921</b>

DBH: "diameter at breast height" is the standard measurement of tree trunk width at 4.5 feet (1.5 meters) above the ground.

*A cooperative initiative between:*



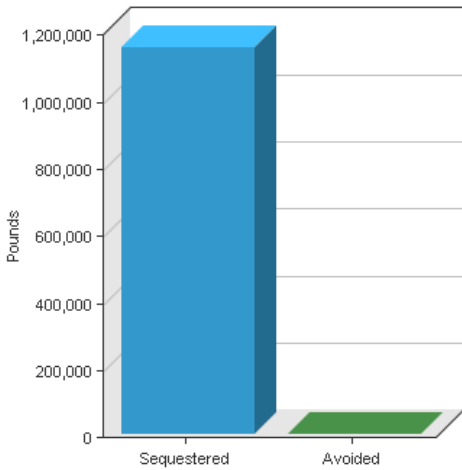


## i-Tree Design v6.0 35375 Mulholland Hwy, Malibu, CA 90265, USA

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[Overall Benefits](#) [Stormwater](#) [Energy](#) [Air Quality](#) [Carbon Dioxide](#)



**To date, these trees have reduced atmospheric carbon dioxide (CO<sub>2</sub>) by 1,152,807 pounds.**

How significant is this number? Most car owners of an "average" car (mid-sized sedan) drive 12,000 miles (19,312 kilometers) generating about 11,000 pounds (4,990 kilograms) of carbon dioxide (CO<sub>2</sub>) every year. A flight from New York to Los Angeles adds 1,400 pounds (635 kilograms) of CO<sub>2</sub> per passenger. Trees can have an impact by reducing atmospheric carbon in two primary ways (see figure at left):

- They sequester ("lock up") CO<sub>2</sub> in their roots, trunks, stems, and leaves while they grow, and in wood products after they are harvested.
- Trees near buildings can reduce heating and air conditioning demands, thereby reducing emissions associated with power production. However, if a tree produces no energy benefits there will be no resulting avoided CO<sub>2</sub>.

Combating climate change will take a worldwide, multifaceted approach, but by planting a tree in a strategic location, driving fewer miles/kilometers, or replacing business trips with conference calls, it's easy to see how we can each reduce our individual carbon "footprints".

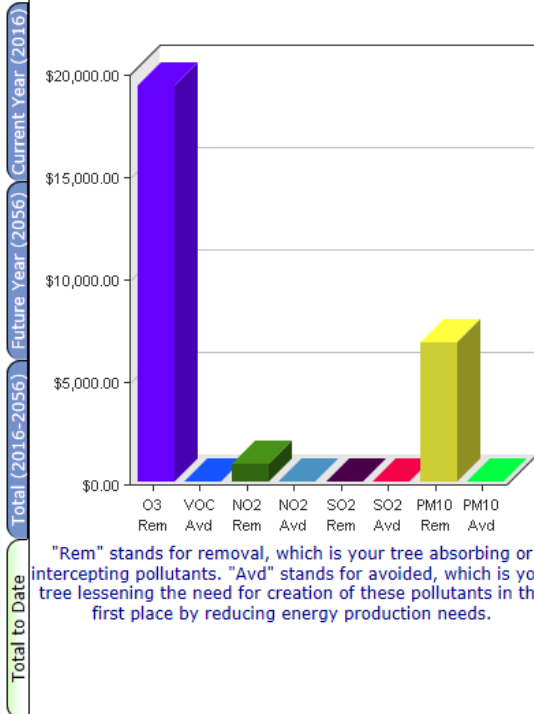
Current Year (2016)  
Future Year (2056)  
Total (2016-2056)  
Total to Date



## i-Tree Design v6.0 35375 Mulholland Hwy, Malibu, CA 90265, USA

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Display results for:



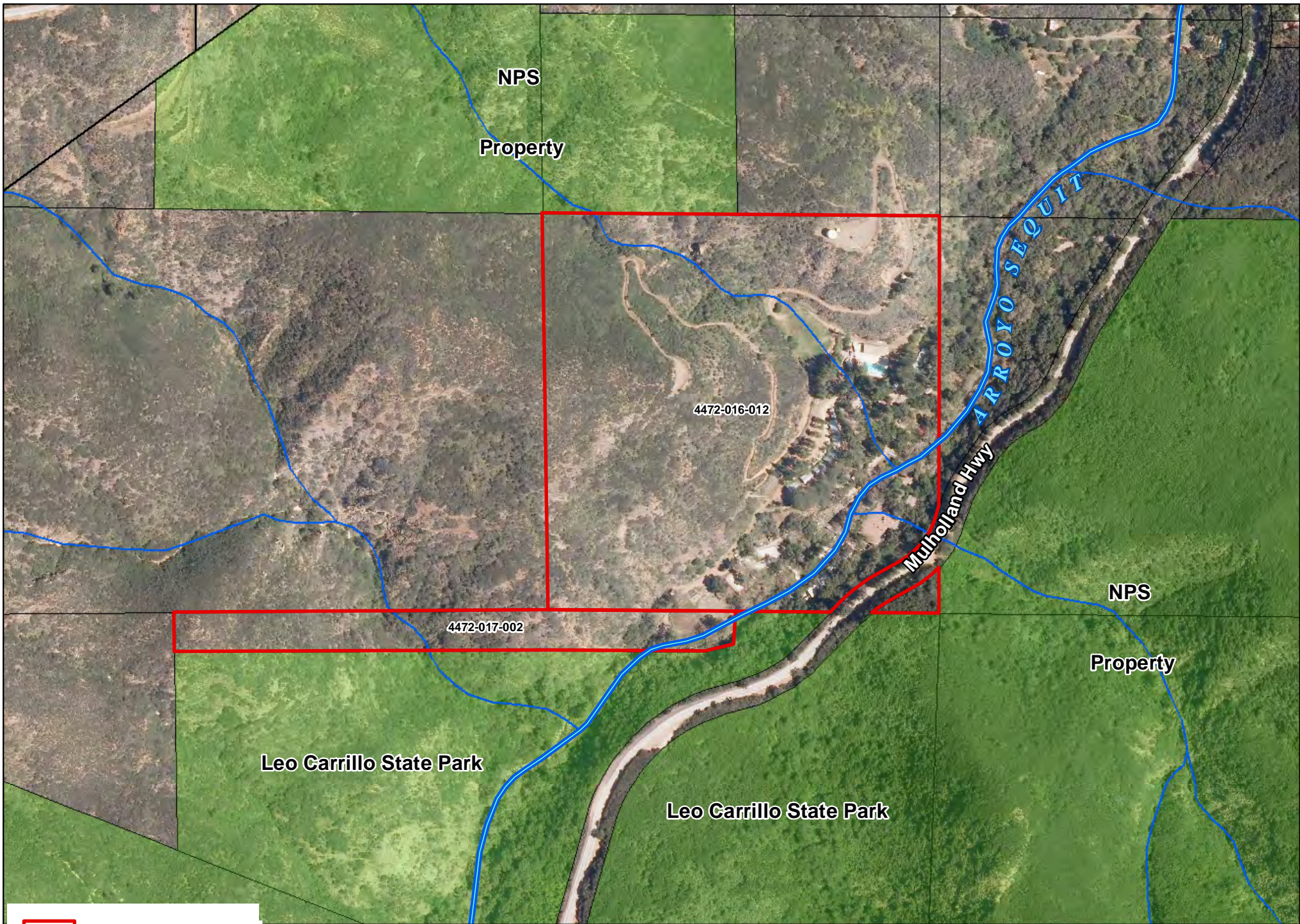
To date, these trees have yielded the air quality benefits shown in the graph at left.

Air pollution is a serious health threat that causes asthma, coughing, headaches, respiratory and heart disease, and cancer. Over 150 million people live in areas where ozone levels violate federal air quality standards; more than 100 million people are impacted when dust and other particulate levels are considered "unhealthy." We now know that the urban forest can mitigate the health effects of pollution by:

- Absorbing pollutants like ozone (O<sub>3</sub>), nitrogen dioxide (NO<sub>2</sub>), and sulfur dioxide (SO<sub>2</sub>) through leaves
- Intercepting particulate matter less than 10 microns (PM<sub>10</sub>) like dust, ash, and smoke
- Releasing oxygen through photosynthesis
- Lowering air temperatures which reduces the production of ozone
- Reducing energy use and subsequent pollutant emissions from power plants (*If a tree produces no energy benefits there will be no resulting avoided pollutants.*)

It should be noted that trees themselves emit biogenic volatile organic compounds (VOCs) which can contribute to ground-level ozone production. This may negate the positive impact the tree has on ozone mitigation for some high emitting species (e.g., willow oak or sweetgum).

"Rem" stands for removal, which is your tree absorbing or intercepting pollutants. "Avd" stands for avoided, which is your tree lessening the need for creation of these pollutants in the first place by reducing energy production needs.



NPS

Property

4472-016-012

4472-017-002

Leo Carrillo State Park

Leo Carrillo State Park

ARROYO SEQUIT

Muholland Hwy

NPS

Property

-  Camp
-  Public Land

Agenda Item VI(d)  
MRCA  
2/3/16

