

City of Millbrae Drought-tolerant Landscaping

2022 WaterSMART Grant: Small-scale Water Efficiency Projects
Bureau of Reclamation Funding Opportunity No. R22AS00195

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Technical proposal and evaluation criteria

Executive Summary

Date: April 28th, 2022

Applicant: City of Millbrae (City)

City/County/State: Millbrae, San Mateo County, California

Project Manager: Andrea Pappajohn – Environmental Programs Manager

Application category: Category A

Grant funding request: \$100,000

Non-Federal matching funds: \$129,586

Total project cost: \$229,586

Project duration: 12 months

Estimated project start date: April 2023

Estimated project completion date: April 2024

Located on Federal facility: No

Unique Entity Identifier: LHC9LCUVL6F9

Project Summary

This proposal is seeking funding to make a lawn landscape conversion to a drought tolerant landscape, at the City's Police Department and Fire Stations buildings. This project will include changing approximately 8,000 sq ft turf area into a drought-tolerant landscape and replacing the existing sprinkler head irrigation systems to a drip irrigation system, which will significantly reduce potable water use for irrigation purposes.

The City has a mild Mediterranean climate, with annual average precipitation approximately 20 inches and an annual average temperature of 65 degrees Fahrenheit. Due to a number of geographical and economic constraints, the City does not produce any potable water from within the City service area. Like many of the cities in the greater San Francisco Bay area, the City purchases its entire potable water supply from the Regional Water System (RWS), operated

by the San Francisco Public Utilities Commission (SFPUC). As such, the reliability of the City’s water supply is directly related to the reliability of the RWS, which is impacted by multiple factors such as climate change and regulatory changes.

The City of Millbrae supplies potable water to its 26,484 residents, which can get challenging amid regular periods of severe drought in the State of California –like the current one--, exacerbated with climate change. The City has been able to convert part of City Hall’s landscape to a drought-tolerant in year 2015, but funding was not enough to cover the adjacent Police and Fire stations landscaped areas. Converting these two city-owned landscapes is an opportunity not only to reduce water usage and improve water efficiency, but also to lead by example and educate residents on drought tolerant gardening and landscaping strategies. Converting these landscapes would also become more coherent with City's Environmental Programs, especially since the City has been offering a lawn conversion rebate (Lawn Be Gone!) to residents through BAWSCA (Bay Area Water Supply & Conservation Agency).

Figure 1 shows the design concept for the Police Department landscape. Figures 2 and 3 show the current landscape on both adjacent buildings.

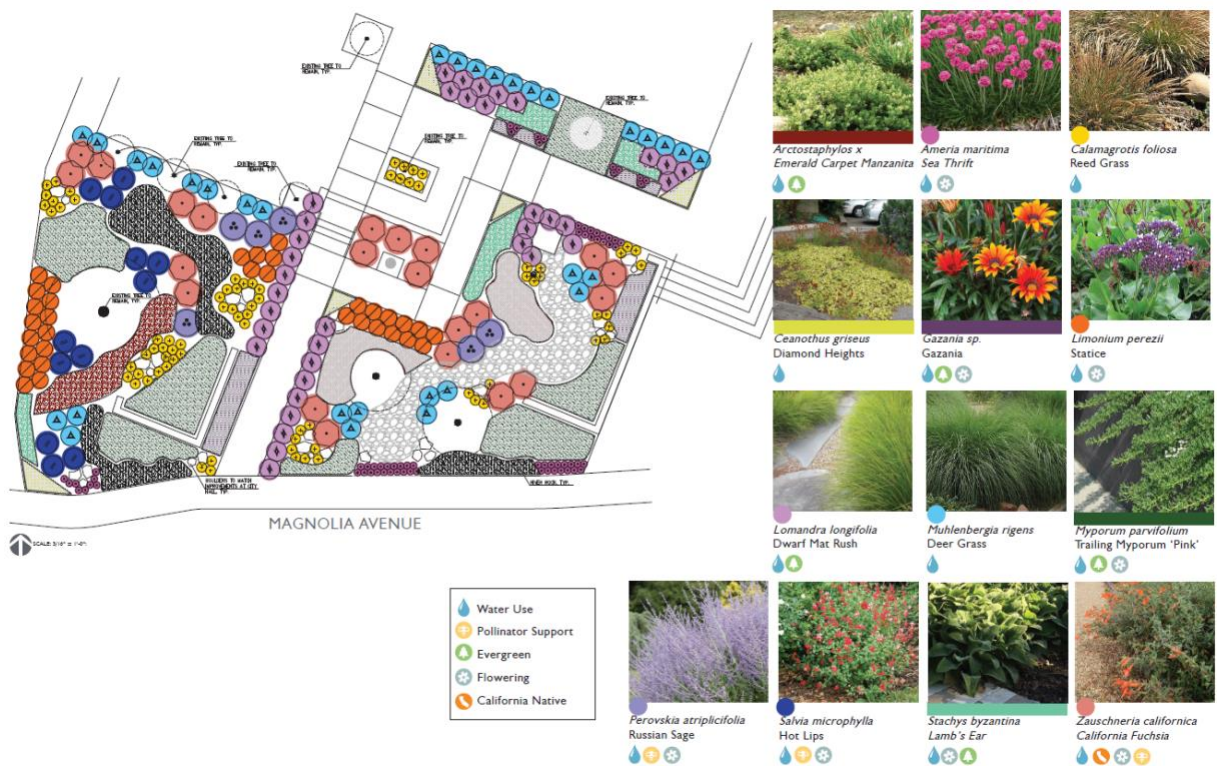


Figure 1: Design concept for City of Millbrae Police Department drought-tolerant landscape.



Figure 2: Current City of Millbrae Police Department landscape.



Figure 3: Current City of Millbrae Fire Station landscape.

Project location

Millbrae Police Department and Fire Station drought tolerant landscape project is located next to Millbrae's City Hall, at 581 Magnolia Avenue, Millbrae, San Mateo County, CA 94030, approximately 15 miles south of downtown San Francisco. The project latitude is 37°36'9.371 and longitude is -122°23'51.72".

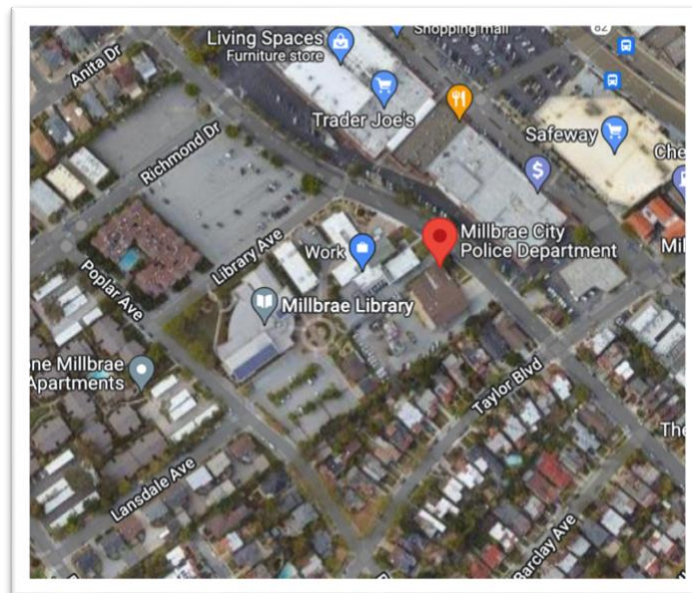


Figure 4: Project location.

Project description

The current entries to the Police Department and Fire Station Buildings are lawn and overly mature and declining planting. Accessibility improvements were recently completed, and the improved circulation allows for an opportunity to demonstrate water wise planting ideas and water efficient landscape irrigation.

The main work of the project focuses on the replacement of the current landscaping. To accomplish this, approximately 8,000 square feet of the current landscape will be cleared, grubbed, and prepped for the new plant species. For the Police Department, 500 Sqft will be fine graded and 4 tons of cobble mulch will be installed as a bioswale, matching the design of the adjacent City Hall's drought tolerant landscape. For the new plant species, 124 5-Gallon shrubs, 8 3-Gallon and 369 1-gallon will be planted, while 9 existing trees will be left in place. A layer of decomposed granite will be applied over the soil. New plant species include *Arctosphylos x*, *America maritima*, *Calamagrotis foliosa*, *Ceanothus griseus*, *Gazania sp.*, *Limonium perezii*, *Lomandra longifolia*, *Muhlenbergia rigens*, *Myporum parvifolium*, *Perovskia atriplicifolia*, *Salvia microphylla*, *Stachys byzantine* and *Zauschneria californica*. City if working on the specifics of the design for the Fire station within this 8,000 sqft project. The Police Department design intent will be replicated on the Fire Department side.

Additionally, the current sprinkler head irrigation systems will be replaced by drip irrigation systems for shrubs and trees, and a new backflow device will be replaced at the Police Department landscape. Aluminum plant plaques matching the existing ones at the City Hall will be placed next to each species as a learning opportunity for visitors.

Evaluation criteria

E1.1 Evaluation criterion A: Project benefits (35 points)

The proposed project will reduce overall water usage by the City through the replacement of the current Police Department and Fire Station Buildings lawn landscapes with drought-tolerant plant species as well as decomposed granite mulch. In addition, the replacement and implementation of new drip-irrigation systems with meters will allow the City to track water usage for landscape maintenance, and the elimination of lawn will lower City's GHG emissions generated by mowers. The improvements to water efficiency at the Police Department landscape are estimated to save the existing water supply by 62,536 gallons of water per year, which increases resiliency to drought and climate change. Further calculations for water savings of the Fire Department landscape are being estimated but expected to be comparable to the Police Department's, since the areas are similar in size.

The project's objective is twofold, since the City would also like to promote drought-tolerant landscaping to its visitors and residents and its commitment to long-term water efficiency. The proposed project will not only be aesthetically pleasant and welcoming to neighbors and City Hall staff, but also serve as outreach and inspiration for residents to adapt their landscaping to a more coherent water-consuming one amid current and projected drought scenarios. This would be particularly significant since much of Millbrae's population is from other regions of

the country or other nations and may not be aware of water resources challenges in the San Francisco Bay Area.

E 1.2 Evaluation criterion B: Planning effort supporting the project (30 points)

Alignment with existing local and regional efforts

2020 Adopted Urban Water Management Plan: The City's water use projections incorporate the effect of conservation measures, including landscape water budgets and education and outreach, which line up with the proposed project objectives.

Adopted Water Shortage Contingency Plan (WSCP): helps guide the City in policy and decision-making during times of water shortage. The demand reduction strategy outlined by the plan is a six-stage approach, based on supply deficiencies. Currently, the City is at Level 1, with chances to move to Level 2 by California Executive Order N-7-22.

2020 City of Millbrae's Climate Action Plan (CAP): water conservation measures are described in the CAP as energy conservation actions.

Following the extreme drought of 2012-2016, the State of California developed a framework for "Making Water Conservation a California Way of Life" to address the long-term water use efficiency requirements called for in Governor Brown's executive orders. Governor Brown signed into law AB 1668 and SB 606 in 2018, which builds upon the executive orders to implement new urban water use objectives for urban retail water suppliers. Key elements include new water use targets for urban water suppliers that go beyond existing SB X7-7 20% reduction requirements and are based on strengthened standards, including outdoor irrigation.

Adopted City of Millbrae Water Efficiency Ordinance: in accordance with the State Model Water Efficiency Landscape Ordinance (MWELo), affects to new developments and existing landscapes to be rehabilitated over 2,500 Sqf.

Lawn be gone! Rebate program: City of Millbrae partnered with BAWSCA to offer rebates to residents by converting lawns into water-wise landscaping by planting native and drought-tolerant plants.

New California Executive Order N-7-22: requests State water suppliers to move to Level 2 on their Water Shortage Contingency Plan, which requires actions that will conserve water, and directing the State Water Resources Control Board to consider a ban on the watering of "non-functional" grass at businesses and institutions. Although City of Millbrae is not considered a commercial building, taking a step forward towards water conservation in its own decorative lawn will display leadership and commitment to State requirements.

E 1.3 Evaluation criterion C: Implementation and results (20 points)

The project implementation schedule is detailed in Table 1 below. The City of Millbrae expects this project to span 12 months, from April 2023 to April 2024. Timelines may shift slightly due to material availability or weather.

PROJECT IMPLEMENTATION SCHEDULE		
Project Stage	Milestone/task	Estimated date
Funding award	<ul style="list-style-type: none"> Receive award letter 	Fall 2022
Planning kickoff	<ul style="list-style-type: none"> Confirm design concept Gather quotes from 2-3 contractors for construction Obtain City permits 	April 2023 – July 2023
Installation	<ul style="list-style-type: none"> Clearing & grubbing Soil prep & fine grading Install drip irrigation system Plant shrubs Install mulch 	July 2023 – January 2024
Post-installation	<ul style="list-style-type: none"> Perform final irrigation evaluation Continue to monitor soil health and saturation Adjust watering schedule as needed Plant plaques installation 	January 2024 – March 2024
Closeout	<ul style="list-style-type: none"> Final financial and performance reports submitted to the Bureau of Reclamation summarizing the entirety of the project. 	March 2024 – April 2024

Required Permits: City of Millbrae Building and Encroachment permits.

Project Engineering & Design Work: A landscape design was provided for this project. The project team met on site to assess the existing conditions and discuss the suitability of a low water using landscape design. The landscape architect then developed a planting and irrigation plan for the implementation of a low water demonstration garden. Partial plans are included in this application (Figure 1).

Policies & Administrative Actions: There are no new policies or administrative actions required to implement this project.

Environmental Compliance: This project has been determined to be Categorical Exempt pursuant to Section 15304 Class 4 (b) of the California Environmental Quality Act (CEQA) that involves minor alternations to the land.

E 1.4 Evaluation criterion D: Nexus to Reclamation (5 points)

The proposed project has no nexus to any USBR project. City of Millbrae's water supply is purchased from the San Francisco Public Utilities Commission, that retrieves water from the Hetch Hetchy reservoir.

E 1.5 Evaluation criterion E: Presidential and Department of the Interior Priorities (10 points)

E 1.5.1 Sub-criterion No. E1: Climate change

The proposed project has a direct nexus to climate change since it aims to create a resilient landscape to drought and climate change. This is directly related to Department of the Interior's priority on addressing the drought crisis and developing long-term solutions to climate change. California is a naturally drought-prone state, but climate change has increased their frequency and intensity, which puts more pressure on the regional water supply. Although the San Francisco Bay Area has received some precipitations this April, 2022 wet months of January, February and March 2022 have been extremely dry, and current drought conditions are severe, per the US Drought Monitor. Additionally, presidential and Department of the Interior's priorities include tackling the climate crisis which provide for climate resilience in sites management and climate literacy enhancement.

Cutting irrigation in City's thirsty turf landscapes will reduce potable water usage in decorative lawns, reduce GHG emissions from mowers, energy –to move and treat water—and help educate residents with drought-tolerant landscape examples.

E 1.5.2 Sub-criterion No. E2: Disadvantage or Underserved Communities

The is no direct link to disadvantage or underserved communities.

E 1.5.3 Sub-criterion No. E3: Tribal Benefits

The are no tribes relevant in the proposed project's area.

Environmental and cultural resources compliance

This project has been determined to be Categorical Exempt pursuant to Section 15304 Class 4 (b) of the California Environmental Quality Act (CEQA) that involves minor alternations to the land, consisting of replacing lawn to drought-tolerant plant species and a new drip irrigation system, more water efficient than the current one. The clearing of the current landscaping and fine grading operation will disturb a minimal amount of soil. In addition, the project will not require removal of mature trees. However, the City is cognizant that if USBR differs in this

assessment, the City will comply with any studies required. The subject property is a public facility (City of Millbrae Police Department landscape) and is not listed on the California or National Register for historic resources or is associated with any person of historical importance.

The City is aware that upon being selected for a Federal funds award, USBR must first ensure compliance with Federal environmental and cultural resources laws and other regulations.

Required permits or approvals

The project will need a Building permit from the City of Millbrae. Although this is a City project, the City will assign staff to review the permit submittals to ensure compliance with regulations. To obtain the building permit, a form must be submitted online by either the City or the contractor. The typical first review turn-around time is 15 business days and the resubmits are usually around 5-10 business days, depending on the scope of work and numbers of comments. To conclude, a one-time inspection is needed after installation of backflow and connection to the main line.

Additionally, an Encroachment permit will be obtained from City of Millbrae Public Works Department, which is required for all activities in the public right-of-way (row) or public easement.

Resolution by City Council of Millbrae will be submitted for consideration and approval at the May 10th, 2022 Council meeting.

Project budget

Funding Plan and Letter of Commitment

Total project cost is \$229,586.44, with \$129,586.44 to be paid by the City and \$100,000 to be reimbursed through Federal funding. This funding will be included in the Fiscal Year 2022-2023 budget and a resolution committing to this funding is scheduled for consent on the May 10th, 2022 City of Millbrae Council agenda. We do not anticipate any project costs for environmental and cultural compliance. Project funding is not supplied by any source other than the applicant, therefore, we do not present letters of commitment to this grant application.

Total project cost

Source	Amount
Cost to be reimbursed with the requested Federal funding	\$100,000
Cost to be paid by the applicant	\$129,586
Value of third-party contributions	\$0
TOTAL PROJECT COST	\$229,586

Budget proposal

Item	Quantity	Unit cost	Subtotal
Construction fencing	185 lf	\$10	\$1,850
Clear & grub	3,595 sqft	\$1	\$3,595
Fine grading	500 sqft	\$1,2	\$600
Soil amendment	3,595 sqft	\$0,85	\$3,055.75
Unstabalized decomposed granite	12.5 ton	\$128	\$1,600
Cobble mulch	4.05 ton	\$163.5	\$662.18
5 gallon	125 ea	\$45	\$5,625
3 gallon	8 ea	\$38	\$304
1 gallon	369 ea	\$24	\$8,856
Boulders	32 ea	\$900	\$28,800
Drip irrigation system	'1884 sqft	\$10	\$18,836.5
Maintenance period	3,595 sqft	\$0.45	\$1,617.75
Design contingency – 20%			\$15,473
Construction contingency – 10%			\$9,284
Plant plaques	20 ea	\$461.12	\$9,222.44
Fire station landscape cost	4,250 sqft	\$28,41	\$120,743
Total of construction			\$229,586.44

Budget narrative

Total project cost is \$229,586.44, with \$129,586.44 to be paid by the City and \$100,000 to be reimbursed through Federal funding. There are no third-party contributions to the project. Project will be installed by a local landscaping contractor.

A landscape design was provided for the Police Department drought-tolerant landscape project. The project team met on site to assess the existing conditions and discuss the suitability of a low water using landscape design. The landscape architect then developed a planting and irrigation plan for the implementation of a low water demonstration garden. Partial plans are included in this application.

The adjacent Fire Station landscape has been added to this grant application in order to have the opportunity to convert the whole City Hall landscape system and have a cohesive design and a larger demonstration garden to display to residents. However, the Fire Station landscape does not have a final design concept, and its costs were estimated by the landscape architect by comparing square footage of Police Department design and applying similar costs in regards of work and plants needed (about 583 plants).

City permits will not incur in any costs to the project.

Letters of support

Does not apply. There are no third-party funding sources for this project.

Official Resolutions

This grant application is on the May 10th, 2022, City Council agenda for consent. Official resolution will be sent immediately to follow.

Unique Entity Identifier and System for Award Management

The City of Millbrae is registered with SAM. Entity: MILLBRAE, CITY OF (UEI SAM: LHC9LCUVL6F9, UEI DUNS: 091847517)