ENERGY & SUSTAINABILITY COMMITTEE AGENDA

THURSDAY, NOVEMBER 13, 2025
12:00 p.m.

Coachella Valley Water District
Steve Robbins Administration Building Training Room
75515 Hovley Lane East
Palm Desert, CA 92260

Members of the Committee and the public may attend and participate by video at the following remote location:

Blythe City Hall
235 N Broadway, Room A
Blythe, CA 92225

Imperial Irrigation District
1284 Main Street
El Centro, CA 92243

Members of the public may use the following link for listening access and ability to address the Energy & Sustainability Committee when called upon:

https://us02web.zoom.us/j/83098567932?pwd=rEOYq3bk2VbZ0l3dzybUcYBs0Fswbu.1

Dial In: +1 669 900 9128
Webinar ID: 830 9856 7932
Password: 257394

IF YOU ARE UNABLE TO CONNECT VIA DIAL IN OPTION, PLEASE CALL 760-346-1127

Public Comment is encouraged to be emailed to the Energy & Sustainability Committee prior to the meeting at cvag@cvag.org by 5:00 p.m. on the day prior to the committee meeting.
Members of the public joining the meeting by Zoom can also provide comment by using the "raise hand" feature or hitting *9 on the phone keypad.

As a convenience to the public, CVAG provides a call-in and internet-based option for members of the public to virtually observe and provide public comments at its meetings. Please note that, in the event of a technical issue disrupting the call-in or internet-based options, the meeting will continue unless otherwise required by law.

THIS MEETING IS HANDICAPPED ACCESSIBLE.
ACTION MAY RESULT ON ANY ITEMS ON THIS AGENDA.
UNLESS OTHERWISE STATED, ALL ACTION ITEMS WILL BE PRESENTED TO THE EXECUTIVE COMMITTEE FOR FINAL APPROVAL.

1. CALL TO ORDER – Councilmember Oscar Ortiz, City of Indio, Chair

2. ROLL CALL

A. Member Roster P5

3. PLEDGE OF ALLEGIANCE

4. PUBLIC COMMENTS ON AGENDA ITEMS

This is the first of two opportunities for public comment. Any person wishing to address the Energy & Sustainability Committee on items appearing on this agenda may do so at this time. At the discretion of the Chair, comments may be taken at the time items are presented. Please limit comments to three (3) minutes.

5. COMMITTEE MEMBER / DIRECTOR COMMENTS

6. CONSENT CALENDAR

A. Approve the minutes from the September 11, 2025, meeting P6

6.1 ITEMS HELD OVER FROM THE CONSENT CALENDAR

7. DISCUSSION / ACTION

A. Climate Pollution Reduction Act Program – Regional Comprehensive Climate Action Plan – Rich Walter of ICF P10

Recommendation: Receive and file the San Bernardino-Ontario-Riverside Metropolitan Statistical Area's Comprehensive Climate Action Plan

B. Inland Regional Energy Network's Business Plan – Jacob Alvarez P12

Recommendation: Authorize the Energy & Sustainability Committee Chair, Vice Chair, and CVAG's Executive Director to approve the 2028 I-REN application and business plan to continue existing programs and continue the advocacy for expansion of programs that benefit residential homes as well as small and medium commercial buildings

C. Contract Amendment for the Regional PM10 Street Sweeping Program – Julie Mignogna P14

Recommendation: Authorize the Executive Director to:

1. Execute Amendment No. 1 to the services contract with Sweeping Corporation of America for regional street sweeping services, adding an additional $279,311 a year and extending through December 31, 2027;
2. Take the necessary steps to secure additional funding for the program, including funding from South Coast Air Quality Management District and the County of Riverside
3. Execute Amendment No. 7 to the AB 2766 Vehicle Registration Revenue Memorandum of Understanding with each jurisdiction, increasing the funding contribution from 75 to 100 percent and extending the term through June 30, 2028

8. INFORMATION

A. Attendance Record P19

B. Native Planting Palette Resources for the Coachella Valley P20

C. Local Government Waste Tire Amnesty Grant - TA7 Annual Report P123

D. Coordination of Clean Energy Programs for Residential, Commercial and Industrial Sectors P131

9. PUBLIC COMMENTS ON NON-AGENDA ITEMS

This is the second opportunity for public comment. Any person wishing to address the Energy & Sustainability Committee on items of general interest within the purview of this Committee may do so at this time. Please limit comments to two (2) minutes.

10. ANNOUNCEMENTS

The next meeting of the **Energy & Sustainability Committee** will be held on Thursday, January 8, 2026, at noon at the Coachella Valley Water District, Steve Robbins Administration Building Training Room, 75515 Hovley Lane East, Palm Desert, 92260.

The next meeting of the **Executive Committee** will be held on Monday, December 1, 2025, at 4:00 p.m. at the Coachella Valley Water District, Steve Robbins Administration Building Training Room, 75515 Hovley Lane East, Palm Desert, 92260.

11. ADJOURN

ITEM 2A

Energy & Sustainability Committee
Member Roster
2025 – 2026

VOTING MEMBERS	
City of Blythe	**Mayor Joseph DeConinck**
City of Cathedral City	**Mayor Nancy Ross**
City of Coachella	**Councilmember Stephanie Virgen**
Coachella Valley Water District	**Director Anthony Bianco**
City of Desert Hot Springs	**Councilmember Dirk Voss**
Imperial Irrigation District	**Director JB Hamby**
City of Indian Wells	**Mayor Pro Tem Dana Reed**
City of Indio	**Councilmember Oscar Ortiz, *Chair***
City of La Quinta	**Mayor Linda Evans, *Vice Chair***
Mission Springs Water District	**Director Amber Duff**
City of Palm Desert	**Councilmember Gina Nestande**
City of Palm Springs	**Mayor Ron deHarte**
City of Rancho Mirage	**Mayor Pro Tem Lynn Mallotto**
Riverside County – District 4	**Supervisor V. Manuel Perez**
Torres Martinez Desert Cahuilla Indians	**Tribal Chairman Joseph Mirelez**
Ex-Officio / Non-Voting Members	
Riverside County – District 5	**Supervisor Yxstian Gutierrez**

ITEM 6A

Energy & Sustainability Committee
Meeting Minutes
September 11, 2025

The audio file for this meeting can be found at: http://www.cvag.org/audio.htm

1. **CALL TO ORDER** – The meeting was called to order by Chair Oscar Ortiz, City of Indio, at 12:01 p.m. at the Coachella Valley Water District Steve Robbins Administration Building Training Room, 75515 East Hovely Lane, in the City of Palm Desert. Zoom videoconferencing was available from the City of Blythe and Imperial Irrigation District's office in El Centro.

2. **ROLL CALL** – Roll call was taken and it was determined that a quorum was present.

Members Present	**Agency**
Mayor Joseph DeConinck***	City of Blythe *(via Zoom)*
Mayor Nancy Ross	City of Cathedral City
Councilmember Stephanie Virgen*	City of Coachella
Councilmember Dirk Voss	City of Desert Hot Springs
Director JB Hamby	Imperial Irrigation District *(via Zoom)*
Mayor Pro Tem Dana Reed	City of Indian Wells
Councilmember Oscar Ortiz, *Chair*	City of Indio
Mayor Linda Evans, *Vice Chair*	City of La Quinta
Director Amber Duff	Mission Springs Water District
Councilmember Gina Nestande	City of Palm Desert
Mayor Ron deHarte	City of Palm Springs
Mayor Pro Tem Lynn Mallotto	City of Rancho Mirage
Supervisor V. Manuel Perez**	Riverside County – District 4
Tribal Chair Joseph Mirelez	Torres Martinez Desert Cahuilla Indians

Members/ Ex-Officios Not Present	
Director Anthony Bianco	Coachella Valley Water District
Supervisor Yxstian Gutierrez	Riverside County – District 5

* *Arrived at 5A*
** *Arrived at 7A*
*** *Left after 7B*

3. **PLEDGE OF ALLEGIANCE**

   Chair Ortiz requested a moment of silence to honor those who lost their lives in the September 11, 2001 terrorist attacks. Following the moment of silence, Mayor Pro Tem Dana Reed lead the Pledge of Allegiance.

4. **PUBLIC COMMENTS ON AGENDA ITEMS**

   None

5. **COMMITTEE MEMBER / DIRECTOR COMMENTS**

Program Manager Jacob Alvarez provided an overview of the meeting room logistics and expressed appreciation to Coachella Valley Water District for their hospitality and for accommodating CVAG with a meeting space.

A. Update on regional efforts to address air quality

Assistant Director of Energy & External Affairs Emmanuel Martinez provided an update on ongoing efforts to improve air quality and coordinate with South Coast Air Quality Management District (SCAQMD). It was announced that the Coachella Valley dust summit is scheduled for Thursday, November 6, with additional details to follow at a later date. Brief member discussion ensued.

6. CONSENT CALENDAR

A. Approve the minutes from the May 8, 2025, meeting

B. Authorize the Executive Director to take the necessary to accept $40,000 from the Colmac Air Quality Enhancement Fund Grant Program for the region's Landscape Certification Program, including executing the required agreement with the County of Riverside

IT WAS MOVED BY MAYOR EVANS AND SECONDED BY TRIBAL CHAIR MIRELEZ TO APPROVE THE CONSENT CALENDAR.

THE MOTION CARRIED WITH 13 AYES AND 2 MEMBERS ABSENT FOR THE VOTE.

Mayor DeConinck	**Aye**
Mayor Ross	**Aye**
Councilmember Virgen	**Aye**
Director Bianco	**Absent**
Councilmember Voss	**Aye**
Director Hamby	**Aye**
Mayor Pro Tem Reed	**Aye**
Councilmember Ortiz	**Aye**
Mayor Evans	**Aye**
Director Duff	**Aye**
Councilmember Nestande	**Aye**
Mayor deHarte	**Aye**
Mayor Pro Tem Mallotto	**Aye**
Supervisor Perez	**Absent**
Tribal Chairman Mirelez	**Aye**

6.1 ITEMS HELD OVER FROM THE CONSENT CALENDAR

None

7. DISCUSSION / ACTION

A. Presentation: First Public Hydrogen Authority Municipal Hydrogen Utility

Alexus Merino, Managing Director of the First Public Hydrogen Authority, joined the committee meeting via Zoom and provided a PowerPoint presentation regarding the program.

Member discussion ensued with Ms. Merino responding to questions regarding hydrogen pricing, market trends, delivery logistics, and supply considerations.

No action was taken as this was presented for informational purposes only.

B. Rollout of the Shade Trees for Southern California Deserts Program

Kelli Legakes, tree planting program consultant, delivered a presentation on the shade tree grant awarded to the region, highlighting the goal of planting 6,000 trees across Imperial County and Eastern Riverside Counties by 2028.

Member discussion ensued with Ms. Legakes answering questions regarding the grant details and criteria for tree species selection. Staff indicated they would follow up on additional guidance for trees planting.

No action was taken as this was presented for informational purposes only.

C. Election of Energy & Sustainability Committee Officers

Deputy Executive Director Erica Felci opened the floor for nominations for Chair.

Supervisor Perez nominated Chair Ortiz and Vice Chair Evans to remain in their respective positions.

No other nominations were received.

IT WAS MOVED BY SUPERVISOR PEREZ AND SECONDED BY TRIBAL CHAIR MIRELEZ TO ELECT COUNCILMEMBER ORTIZ AS CHAIR AND MAYOR EVANS AS VICE CHAIR OF THE ENERGY AND SUSTAINABILITY COMMITTEE FOR FISCAL YEAR 2025-26.

THE MOTION CARRIED WITH 13 AYES AND 2 MEMBERS ABSENT FOR THE VOTE.

Mayor DeConinck	**Absent**
Mayor Ross	**Aye**
Councilmember Virgen	**Aye**
Director Bianco	**Absent**
Councilmember Voss	**Aye**
Director Hamby	**Aye**
Mayor Pro Tem Reed	**Aye**
Councilmember Ortiz	**Aye**
Mayor Evans	**Aye**
Director Duff	**Aye**
Councilmember Nestande	**Aye**
Mayor deHarte	**Aye**
Mayor Pro Tem Mallotto	**Aye**

Supervisor Perez	**Aye**
Tribal Chairman Mirelez	**Aye**

8. **INFORMATION** – The following items were provided in the agenda for information only:

   A. Attendance Record

   B. New location of CVAG's public meetings

   C. Coachella Valley Power Agency Update

   D. Used Oil Recycling Annual Report

   E. Inland Regional Energy Network's Business Plan and Executive Committee Update

9. **PUBLIC COMMENTS ON NON-AGENDA ITEMS**

   None

10. **ANNOUNCEMENTS**

    Supervisor Perez reminded members that the Coachella Valley dust summit will be held on Thursday, November 6, at the UCR Palm Desert Campus Auditorium. The event time is to be determined, with additional details to be provided at a later date.

    The next meeting of the **Energy & Sustainability Committee** will be held on Thursday, November 13, 2025, at noon at the Coachella Valley Water District, Steve Robbins Administration Building Training Room, 75515 Hovley Lane East, Palm Desert, 92260.

    The next meeting of the **Executive Committee** will be held on Monday, September 29, 2025, at 4:30 p.m. at the Coachella Valley Water District, Steve Robbins Administration Building Training Room, 75515 Hovley Lane East, Palm Desert, 92260.

11. **ADJOURN** – Chair Ortiz adjourned the meeting at 12:57 p.m.

    Respectfully submitted,

    Elysia Regalado, Deputy Clerk

ITEM 7A

Coachella Valley Association of Governments
Energy & Sustainability Committee
November 13, 2025

STAFF REPORT

Subject: **Climate Pollution Reduction Act Program – Regional Comprehensive Climate Action Plan**

Contact: Jacob Alvarez, Program Manager (jalvarez@cvag.org)

Recommendation: Receive and file the San Bernardino-Ontario-Riverside Metropolitan Statistical Area's Comprehensive Climate Action Plan

Background: In fall 2023, the U.S. Environmental Protection Agency's (EPA) Climate Pollution Reduction Grant (CPRG) planning grant program provided flexible support and funding to the San Bernardino-Ontario-Riverside metropolitan statistical area (MSA) to design climate action plans. The $1 million grant for these planning activities was given to the San Bernardino County Transportation Authority (SBCTA)/Council of Governments (SBCOG), which collaborated with the Western Riverside Council of Governments (WRCOG) and CVAG to complete the work. These three councils of governments also collaborate on the Inland Regional Energy Network (I-REN).

There are two major components of the CPRG Planning grant. The first was a Priority Climate Action Plan (PCAP) for the region. Beginning in 2023, SBCOG, WRCOG, and CVAG staff collaborated to develop this regional PCAP, which identified near-term, high-priority, and implementation-ready measures to reduce greenhouse gas (GHG) pollution and an analysis of GHG emissions reduction that would be achieved through implementation. The PCAP was submitted to the EPA in March 2024.

The second significant component of the grant – and the focus of this staff report – was the development of a Comprehensive Climate Action Plan (CCAP) and greenhouse gas inventory (GHG).

CVAG staff began member jurisdiction outreach in June 2024 in partnership with SBCOG's consultant, ICF. A working group of member jurisdictions requested agency level and community-wide utility data for GHG inventories, reviewed GHG mitigation measures, and coordinated with CVAG to conduct community engagement through a public survey, which circulated a GHG emissions community survey in English and Spanish via community partners, agency website and social media. Through these efforts, staff received 673 responses from the 10 CVAG cities represented in the CCAP. The survey showed most residents were concerned about improving air and water quality and increasing cost-effectiveness and savings, such as lower utility bills.

Shortly after the PCAP was completed, the project team kicked off the CCAP process. The CCAP must be submitted to the EPA by December 1, 2025. The CCAP includes the following elements:

- Comprehensive GHG inventory at the MSA, regional (SBCOG, WRCOG, and CVAG), and individual jurisdiction level (including all CVAG cities);
- GHG emissions projections for 2030 and 2045 at the MSA, regional, and jurisdictional levels;
- GHG reduction targets aligned with California legislation;

- Quantified GHG reduction measures;
- Benefits analysis, which includes an air quality analysis;
- Review of authority to implement;
- Funding identification; and
- Workforce planning analysis

CVAG member jurisdictions' staffs were engaged regularly throughout the process to keep them informed of progress and provided opportunities to provide input and feedback, particularly related to the GHG inventory, projections and reduction measures. For the GHG inventory and projections, the consultant team used two separate socioeconomic datasets from the Riverside County Transportation Model (RIVCOM) and the California Department of Finance, and each jurisdiction selected the most appropriate dataset for their city.

CVAG jurisdiction staffs were also given the opportunity to select relevant GHG reduction measures. There was a total of 34 measures across six key emission sectors, which are building energy, on-road transportation, offroad transportation, solid waste, agriculture, and water and wastewater. These include measures such as building electrification, electric vehicle infrastructure, solid waste diversion, urban tree planting, wastewater equipment upgrades, and water conservation. The GHG reduction measures are described in detail in the CCAP.

Based on the analysis in the CCAP, with implementation of state, regional and local measures identified in the CCAP, all cities within CVAG are expected to reduce GHG emissions by 30 percent from 2023 levels by 2030 on service population basis. For 2045, the state has an overall net zero emissions goal, which would require even further state, regional, and local reduction effort beyond that identified in the CCAP.

None of CVAG's member jurisdictions are required to adopt this plan. However, technical analysis and the CCAP mitigation measures can be used by CVAG's member jurisdictions to support their own local planning efforts. Cities may decide to update their local climate action plan using the information in the CCAP. Cities can also use the CCAP information for grant proposals to help support local sustainability planning and initiatives that can help reduce GHG emissions while achieving other important local priorities. While federal funding for climate-related GHG reduction efforts has been reduced under the current administration, there remains state funding and utility funding opportunities to help defray the cost of implementing many of the local GHG measures.

With this item, Rich Walter from ICF will provide an overview of the CCAP efforts. Following the presentation, staff recommends receiving and filing the San Bernardino-Ontario-Riverside MSA Comprehensive Climate Action Plan (CCAP) as the final deliverable for the CPRG planning grant. This action will allow CVAG and its member jurisdictions to leverage the CCAP's technical analysis and mitigation measures for local planning efforts and to pursue future state and utility funding opportunities.

Fiscal Analysis: There is no additional cost to CVAG for this report. The costs of the services of consultants are covered through EPA's CPRG Grant Award provided SBCOG.

Attachments: San Bernardino-Ontario-Riverside MSA Comprehensive Climate Action Plan and Appendices: https://cvag.org/wp-content/uploads/2025/11/CCAP-and-Appendices.pdf

ITEM 7B

Coachella Valley Association of Governments
Energy & Sustainability Committee
November 13, 2025

STAFF REPORT

Subject: **Inland Regional Energy Network's Business Plan**

Contact: Jacob Alvarez, Program Manager (jalvarez@cvag.org)

Recommendation: Authorize the Energy & Sustainability Committee Chair, Vice Chair, and CVAG's Executive Director to approve the 2028 I-REN application and business plan to continue existing programs and continue the advocacy for expansion of programs that benefit residential homes as well as small and medium commercial buildings

Background: CVAG is collaborating with Western Riverside Council of Governments (WRCOG) and San Bernardino Council of Governments (SBCOG) on a joint Regional Energy Network (REN), known as the Inland Regional Energy Network (I-REN). I-REN is governed by an Executive Committee, with CVAG's votes represented by the CVAG Energy & Sustainability Committee Chair, or Vice Chair as needed.

I-REN is operating on a five-year Business Plan that was approved by the California Public Utilities Commission (CPUC) in November 2021, granting I-REN Program Administrator (PA) status and access to $65 million in Public Purpose Program funds for energy efficiency programs from 2022-2027. The existing Business Plan divides funds into three programmatic areas: Codes and Standards; Workforce Education and Training; and Public Sector.

Staff has provided several updates this year as I-REN's Executive Committee and agency staff discuss the formation of a Business Plan that will guide programming through 2035. In February, CVAG's Executive Committee, at the recommendation of the Energy & Sustainability Committee, provided authorization to the Energy & Sustainability Committee Chair, Vice Chair and CVAG's Executive Director to advocate for the expansion of the plan to include Residential and Commercial (small and medium) sectors, an area of interest for both CVAG and SBCOG. CVAG staff has also been authorized to proceed with developing the plan for the Public, Codes & Standards, and Workforce Education & Training sectors, while analysis was conducted on the new additions.

At the May I-REN Executive Committee meeting, staff presented a comprehensive review of existing statewide and regional ratepayer-funded programs, a direct result of the Energy & Sustainability Committee's advocacy for including Residential and Commercial programs in the Business Plan. As a result, the I-REN Executive Committee authorized the submission of the 2028-2035 Business Plan for the Public, Workforce Education & Training, and Codes & Standards Sectors. It also directed staff to coordinate with existing Energy Efficiency Programs in the Commercial, Residential, and Industrial Sectors to bring more resources to the Inland Empire.

At the July and October I-REN Executive Committee meetings, additional information was provide3d on third-party Commercial and Industrial programs. More information can be found in a separate agenda item as part Third-Party Coordination Activities staff report in this agenda.

The next I-REN Business Plan must be submitted by February 15, 2026. Staff is anticipating an update on the plan's development will be provided to the I-REN Executive Committee when it next meets November 18. Due to ongoing progress, the November presentation will consist of a high-level overview of key anticipated changes, not a full draft plan.

Staff expects that there will be programmatic budget changes in the Business Plan across the three sectors, though details are limited at this time. Specifically, one key change reflected in the business plan is the CPUC's authorization for Regional Energy Networks to incorporate Technical Assistance on Integrated Demand Side Management (IDSM). IDSM combines various resources like energy efficiency, demand response, distributed generation, storage, and electric vehicles into a single strategy. A key objective is to shift energy consumption away from peak hours to reduce overall demand during high-stress periods to keep the lights on or in Coachella Valley's case, keep air conditioning on. IDSM Technical Assistance will be integrated into the I-REN Public Sector Program, providing comprehensive project support. This assistance includes integrated Demand Energy Resources (DER) audits, performance specifications, procurement support, funding and financing analyses and application support, and construction support for DER measures.

The I-REN Executive Committee is only scheduled to meet once more prior – on January 20 – before the plan submittal deadline. Because of the limited Energy & Sustainability Committee meeting dates that occur before this deadline, staff is recommending the Committee authorize the Energy & Sustainability Committee Chair, Vice Chair, and CVAG's Executive Director to approve the 2028 I-REN application and business plan with a continuation of existing programs – while also reinforcing advocacy for programs that benefit residential homes as well as small and medium commercial buildings.

Fiscal Analysis: There is no additional cost to CVAG for these items. Staff time dedicated to I-REN and the costs of the services of consultants are covered through the I-REN budget.

ITEM 7C

Coachella Valley Association of Governments
Energy & Sustainability Committee
November 13, 2025

STAFF REPORT

Subject: **Contract Amendment for the Regional PM10 Street Sweeping Program**

Contact: Julie Mignogna, Transportation Program Manager (jmignogna@cvag.org)

Recommendation: Authorize the Executive Director to:

1. **Execute Amendment No. 1 to the services contract with Sweeping Corporation of America for regional street sweeping services, adding an additional $279,311 a year and extending through December 31, 2027;**
2. **Take the necessary steps to secure additional funding for the program, including funding from South Coast Air Quality Management District and the County of Riverside**
3. **Execute Amendment No. 7 to the AB 2766 Vehicle Registration Revenue Memorandum of Understanding with each jurisdiction, increasing the funding contribution from 75 to 100 percent and extending the term through June 30, 2028**

Transportation Committee: Concurred (Meeting of Nov. 3)

Background: The Regional PM10 Street Sweeping program is an air quality program focused on addressing PM10 (particulate matter less than 10 microns in size) by removing sand and entrained dust from regional streets in the Coachella Valley. Because the Coachella Valley is in non-attainment for PM10, the program is part of the Coachella Valley's State Implementation Plan (SIP) and is a best available control measure. The goal of the program is to improve air quality and public health by decreasing fugitive PM10 emissions attributed to entrained roadway dust and sand that can pulverized by vehicles and then suspended into the air.

In 2022, CVAG conducted a study of the regional street sweeping program as part of a South Coast Air Quality Management District (SCAQMD) grant agreement. The study was conducted to identify additional ways to make the program more impactful for the Coachella Valley. The study found the program to be effective in addressing PM10 emissions, and it provided several recommendations. These recommendations were included in the regional street sweeping contract that the Executive Committee authorized on December 25, 2022 with CleanStreet, now Sweeping Corporation of America (SCA). The contract was authorized to be three years in duration ending on December 31, 2025, with the option to renew for up to two additional years.

Under the contract, SCA is responsible for sweeping on a bi-weekly basis 1,050 curb miles of regional arterials in the Coachella Valley. Of those, 977 miles are regular streets and 73 miles are special impact streets. Special impact streets, like Dinah Shore Drive, may be swept more often based on need, particularly during the Coachella Valley's windy season from February through May. The existing contract also included a provision for sweeping the CV Link once construction is completed, although the budget for that work was not included in the 2022 contract because CV Link

was still under construction. The chart below shows the annual linear curb miles to be swept for each type as part of the proposed amendment.

Item Description	Unit	Estimated Annual Quantity
Regular Street Sweeping	Linear Curb Miles	23,878
Special Impact Streets	Linear Curb Miles	1,898
Palm Springs Hwy 111	Linear Curb Miles	1,524
CV Link	Linear Miles	1,600

CVAG staff have worked with member jurisdictions' staff and SCA to focus on the program and enhance its performance over the past 15 months. As a result, member agencies are more engaged and have access to sweeping performance data. SCA has responded by increasing the service levels, particularly following Tropical Storm Hilary in 2023 and the ensuing months of increased blowsand and fugitive dust experienced by the Coachella Valley. This focus has increased monthly sweeping costs due to special impact roadways throughout the valley being swept more frequently in response to the additional blowsand and fugitive dust. Approximately $130,530 of the proposed cost increase can be attributed to service level increases.

To continue with this level of service, CVAG staff, based on feedback from the public works staff at the municipal agencies, is recommending Amendment No. 1 to the SCA contract. The amendment will extend the contract term to December 31, 2027 and increase the annual contract amount to continue the more frequent sweeping of special impact streets. The recommended amendment also adds additional budget to account for a five percent increase of fuel and waste disposal process costs and to incorporate the cost of sweeping the CV Link bi-weekly. The five percent increase accounts for approximately $66,380 of the recommended contract increase. The recommended authorization would also authorize the Executive Director and/or Legal Counsel to make clarifying changes prior to execution.

Fiscal Analysis: The proposed SCA contract Amendment No. 1 will add $279,311 a year, increasing the total annual cost of the program from $763,573.96 to $1,042,884.96. The total not to exceed contract amount will increase to $4,655,802.80. There are sufficient accumulated AB 2766 funds available for the additional program costs for Fiscal Year 2025-26. The estimated $82,400 annual cost for the CV Link sweeping services will be funded by regional transportation funds.

In addition to recommending an amendment to the SCA contract, CVAG staff is recommending two authorizations related to the program's funding. CVAG and municipal staff are also reviewing alternatives to maintain the regional street sweeping program at the current service levels in the future. The primary source of funding for the regional street sweeping program comes from AB 2766 Vehicle Subvention funds the member agencies receive each year. Member agencies direct 75 percent of their AB 2766 funds to the regional street sweeping program, which amounts to approximately $450,000 per year. Additional funding sources for the program include a SCAQMD grant that funds $220,000 per year through June 2026, and $27,000 per year from the City of Palm Springs for sweeping 27 curb miles of Highway 111 in the city.

The street sweeping program had included in prior years funding from the Colmac Air Quality Enhancement Funds through the County of Riverside at $150,000 per year. The Colmac funding

agreement ended in June 2025 due to the closing of the Coman Energy biomass plant located in Mecca; however, some funding remains available for the program. CVAG staff is currently coordinating with SCAQMD and the County of Riverside to secure continued SCAQMD and Colmac funding. Should a funding source be secured, staff is requesting authorization for the Executive Director to enter into any necessary agreements with SCAQMD, the County of Riverside or another project partner.

CVAG staff is also recommending that the Executive Director be authorized to enter into amendments to the MOUs with local jurisdictions. CVAG is also coordinating with the cities quarterly as part of the Regional Street Sweeping Program Ad Hoc Committee. Over the years, the AB 2766 funding contribution from the jurisdictions has varied based on the regional street sweeping program's funding needs. The contribution percentage has ranged from 60 to 100%. Due to the end of Colmac funding and SCAQMD grant term expiring in June 2026, an adjustment to the jurisdiction's AB2766 contribution is needed. With this authorization, CVAG staff will coordinate with member agency staff to amend the existing AB 2766 MOUs to allocate 100 percent of each jurisdiction's AB 2766 contribution to the regional street sweeping program. The goal is to ensure the program remains fully funded and that service levels are maintained valleywide through a simplified, collaborative funding structure. Staff recommends that the term of the MOUs also be extended for two additional years, through June 30, 2028, with the increase in AB2766 funding contributions becoming effective on July 1, 2026.

Should additional funding for the regional street sweeping program be secured, CVAG staff would reassess the need for this increased contribution from local jurisdictions.

Attachment:

1. Amendment No. 1 to Services Agreement with Sweeping Corporation of America (SCA)

AMENDMENT NUMBER ONE
to the
SWEEPING CORPORATION OF AMERICA
SERVICES AGREEMENT
for
REGIONAL PM10 ARTERIAL STREET SWEEPING SERVICES

This **AMENDMENT NUMBER ONE** is made and entered into this **1st day of December 2025** by and between the **Coachella Valley Association of Governments**, a California joint powers agency **(CVAG)**, and **Sweeping Corporation of America (Consultant)**, and is made with reference to the following background facts and circumstances. All other terms and conditions shall remain the same as stated in the original Agreement dated **January 1, 2023**, Regional PM10 Arterial Street Sweeping Services.

1. **This Amendment Number One extends the term of the Agreement through December 31, 2027.**
2. **This Amendment Number One authorizes an additional amount not to exceed $279,311.00 a year as updated in Exhibit B. Price Formula for a total annual amount not to exceed $1,042,884.96.**
3. **The total amount payable under this agreement shall not exceed $4,655,802.80 through 2027.**

		Annual Amount
Original Agreement	January 1, 2023	$763,573.96
Amendment Number One	December 1, 2025	$1,042,884.96

Consistent with CVAG Policy 21-02, this amendment shall be executed with the use of electronic or digital signatures in order to be in effect.

IN WITNESS WHEREOF, the parties hereto have caused this **Amendment Number One** to be executed by their duly authorized representatives on this date:

COACHELLA VALLEY ASSOCIATION OF GOVERNMENTS

By: _____
Tom Kirk, CVAG Executive Director

SWEEPING CORPORATION OF AMERICA

By: _____
Tony Cincotta, Regional Vice President

Exhibit B
PRICE FORMULA

Item Description	Unit	Estimated Annual Quantity	Unit Cost	Extended Cost
Regular Street Sweeping	Linear Curb Miles	23,878	$ 34.84	$ 831,909.52
Special Impact Streets	Linear Curb Miles	1,898	$ 42.00	$ 79,716.00
Palm Springs Hwy 111	Linear Curb Miles	1,524	$ 32.06	$ 48,859.44
CV Link	Linear Miles	1,600	$ 51.50	$ 82,400.00
			TOTAL	**$ 1,042,884.96**

ITEM 8A

ENERGY AND SUSTAINABILTY COMMITTEE
ATTENDANCE RECORD
FY 2025-2026

VOTING MEMBERS	**JUL**	**AUG**	**SEP**	**OCT**	**NOV**	**DEC**	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUNE**
City of Blythe	-	-	✓	-		-			-			-
City of Cathedral City	-	-	✓	-		-			-			-
City of Coachella	-	-	✓	-		-			-			-
Coachella Valley Water District	-	-		-		-			-			-
City of Desert Hot Springs	-	-	✓	-		-			-			-
Imperial Irrigation District	-	-	✓	-		-			-			-
City of Indian Wells	-	-	✓	-		-			-			-
City of Indio	-	-	✓	-		-			-			-
City of La Quinta	-	-	✓	-		-			-			-
Mission Springs Water District	-	-	✓	-		-			-			-
City of Palm Desert	-	-	✓	-		-			-			-
City of Palm Springs	-	-	✓	-		-			-			-
City of Rancho Mirage	-	-	✓	-		-			-			-
Riverside County - District 4	-	-	✓	-		-			-			-
Torres Martinez Desert Cahuilla Indians	-	-	✓	-		-			-			-
EX-OFFICIO / NON-VOTING MEMBERS												
Desert Water Agency	-	-		-		-			-			-
Riverside County - District 5	-	-		-		-			-			-

Absent
Vacancy **
No Meeting -
Present ✓

ITEM 8B

Coachella Valley Association of Governments
Energy & Sustainability Committee
November 13, 2025

STAFF REPORT

Subject: **Native Planting Palette Resources for the Coachella Valley**

Contact: Will Steichen, Management Analyst – Conservation (wsteichen@cvag.org)

Recommendation: Information

Background: At its September meeting, the Energy & Sustainability Committee was provided an update on the Shade Trees for Southern California Deserts program that is being launched in partnership with Imperial Irrigation District (IID). The grant-funded program will significantly boost urban greening efforts in Imperial and Riverside County through a three-year, 6,000 tree planting project, of which half will go to the Coachella Valley and the other half to Imperial County communities served by IID.

The discussion led to some questions from members about the use of native and climate-appropriate plants in landscapes throughout the Coachella Valley. CVAG, the Coachella Valley Conservation Commission (CVCC) and other partners have developed several planting palette guides over the years, and this staff report highlights three of them that are intended to assist jurisdictions, land managers, developers, and residents in choosing plant species that support conservation goals, climate resilience, and community well-being.

The Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP), managed by the CVCC, provides an official plant palette in Table 4-112. This includes a comprehensive list of native species suitable for landscaping within the Plan Area. Developed in collaboration with The Living Desert and the Coachella Valley Mountains Conservancy, this palette serves as the foundational resource for ensuring that landscaping within conservation areas and mitigation projects supports native biodiversity.

In 2021, CVAG supported a CivicSpark fellowship that led to the development of an Urban Greening Guide. This guide focuses on building urban greening capacity. It includes a Tree Palette, developed through consultation with arborists, nurseries, University of Riverside, The Living Desert and other experts. It was intended to support cities in implementing climate action plans, pursuing grant funding, and guiding community-level greening projects.

The Friends of the Desert Mountains (FODM) has also produced a Native Planting Guide. The most recent guide, produced in 2023-24, is designed for broad public use. It provides a reader-friendly, visually engaging resource that highlights the ecological, cultural, and practical benefits of native plants. It also complements the more technical palettes by offering a tool that residents, schools, and community groups can easily apply.

Staff is including copies of all three guides as part of this report. Collectively, these resources reinforce the importance of aligning conservation goals with community greening efforts and provide a suite of tools that can be applied across technical, policy, and public-facing contexts.

Fiscal Analysis: There is no additional cost for this informational item.

Attachments:

1. CVMSHCP Plant Palette (Table 4-112)
2. Urban Greening Guide - CivicSpark (2021)
3. Friends of the Desert Mountains' Native Planting Guide

Table 4-112: Coachella Valley Native Plants Recommended for Landscaping[1]

BOTANICAL NAME	COMMON NAME
Trees	
Washingtonia filifera	California Fan Palm
Cercidium floridum	Blue Palo Verde
Chilopsis linearis	Desert Willow
Olneya tesota	Ironwood Tree
Prosopis glandulosa var. torreyana	Honey Mesquite
Shrubs	
Acacia greggii	Cat's Claw Acacia
Ambrosia dumosa	Burro Bush
Atriplex canescens	Four Wing Saltbush
Atriplex lentiformis	Quailbush
Atriplex polycarpa	Cattle Spinach
Baccharis sergiloides	Squaw Water-weed
Bebia juncea	Sweet Bush
Cassia (Senna) covesii	Desert Senna
Condalia parryi	Crucilllo
Crossosoma bigelovii	Crossosoma
Dalea emoryi	Dye Weed
Dalea (Psorothamnus) schottii	Indigo Bush
Datura meteloides	Jimson Weed
Encelia farinosa	Brittle Bush
Ephedra aspera	Mormon Tea
Eriogonum fasciculatum	California Buckwheat
Eriogonum wrightii membranaceum	Wright's Buckwheat
Fagonia laevis	(No Common Name)
Gutierrezia sarothrae	Matchweed
Haplopappus acradenius	Goldenbush
Hibiscus denudatus	Desert Hibiscus
Hoffmannseggia microphylla	Rush Pea
Hymenoclea salsola	Cheesebush
Hyptis emoryi	Desert Lavender
Isomeris arborea	Bladder Pod
Juniperus californica	California Juniper
Krameria grayi	Ratany
Krameria parvifolia	Little-leaved Ratany
Larrea tridentate	Creosote Bush
Lotus rigidus	Desert Rock Pea
Lycium andersonii	Box Thorn
Petalonyx linearis	Long-leaved Sandpaper Plant
Petalonyx thurberi	Sandpaper Plant
Peucephyllum schottii	Pygmy Cedar
Prunus fremontii	Desert Apricot
Rhus ovata	Sugar-bush
Salazaria mexicana	Paper-bag Bush

Table 4-112 (cont.)

BOTANICAL NAME	COMMON NAME
Salvia apiana	White Sage
Salvia eremostachya	Santa Rosa Sage
Salvia vaseyi	Wand Sage
Simmondsia chinensis	Jojoba
Sphaeralcia ambigua	Globemallow (Desert Mallow)
Sphaeralcia ambigua rosacea	Apricot Mallow
Trixis californica	Trixis
Zauschneria californica	California Fuchsia
Groundcovers	
Mirabilis bigelovii	Wishbone Bush (Four O'Clock)
Mirabilis tenuiloba	White Four O'Clock (Thin-lobed)
Vines	
Vitis girdiana	Desert Grape
Accent	
Muhlenbergia rigens	Deer Grass
Herbaceous Perennials[2]	
Adiantum capillus-veneris	Maiden-hair Fern (w)
Carex alma	Sedge (w)
Dalea parryi	Parry Dalea
Eleocharis montevidensis	Spike Rush (w)
Equisetum laevigatum	Horsetail (w)
Juncus bufonis	Toad Rush (w)
Juncus effuses	Juncus (w)
Juncus macrophyllus	Juncus (w)
Juncus mexicanus	Mexican Rush (w)
Juncus xiphioides	Juncus (w)
Notholaena parryi	Parry Cloak Fern
Pallaea mucronata	Bird-foot Fern
Cacti and Succulents	
Agave deserti	Desert Agave
Asclepias albicans	Desert Milkweed (Buggy-whip)
Asclepias subulata	Ajamete
Dudleya arizonica	Live-forever
Dudleya saxosa	Rock Dudleya
Echinocereus engelmannii	Calico Hedgehog Cactus
Ferocactus acanthodes	Barrel Cactus
Fouquieria splendens	Ocotillo
Mamillaria dioica	Nipple Cactus
Mamillaria tetrancistra	Corkseed Cactus
Nolina parryi	Parry Nolina
Opuntia acanthocarpa	Stag-horn or Deer-horn Cholla
Opuntia bigelovii	Teddy Bear or Jumping Cholla
Opuntia basilaris	Beavertail Cactus
Opuntia echinocarpa	Silver or Golden Cholla
Opuntia ramosissima	Pencil Cholla, Darning Needle Cholla

Table 4-112 (cont.)

BOTANICAL NAME	COMMON NAME
Yucca schidigera	Mojave Yucca, Spanish Dagger
Yucca whipplei	Our Lord's Candle

[1] Source: "Coachella Valley Native Plants, Excluding Annuals (0 ft. to approximately 3,000 ft. elevation)." Compiled by Dave Heveron, Garden Collections Manager, and Kirk Anderson, Horticulturist, The Living Desert, May, 2000, for the Coachella Valley Mountains Conservancy.

[2] Common names for herbaceous perennials that are followed by "(w)" indicate a water or riparian species.

Table 4-113: Prohibited Invasive Ornamental Plants[1]

BOTANICAL NAME	COMMON NAME
Acacia spp. (all species except A. greggii)	Acacia (all species except native catclaw acacia)
Arundo donax (✓)	Giant Reed or Arundo Grass
Atriplex semibaccata (✓)	Australian Saltbush
Avena barbata	Slender Wild Oat
Avena fatua	Wild Oat
Brassica tournefortii (✓✓)	African or Saharan Mustard
Bromus madritensis ssp. *rubens* (✓)	Red Brome
Bromus tectorum (✓✓)	Cheat Grass or Downy Brome
Cortaderia jubata [syn.*C. atacamensis*]	Jubata Grass or Andean Pampas Grass
Cortaderia dioica [syn. C. selloana]	Pampas Grass
Descurainia sophia	Tansy Mustard
Eichhornia crassipes	Water Hyacinth
Elaegnus angustifolia	Russian Olive
Foeniculum vulgare	Sweet Fennel
Hirschfeldia incana	Mediterranean or Short-pod Mustard
Lepidium latifolium	Perennial Pepperweed
Lolium multiflorum	Italian Ryegrass
Nerium oleander	Oleander
Nicotiana glauca (✓)	Tree Tobacco
Oenothera berlandieri (#)	Mexican Evening Primrose
Olea europea	European Olive Tree
Parkinsonia aculeata (✓)	Mexican Palo Verde
Pennisetum clandestinum	Kikuyu Grass
Pennisetum setaceum (✓✓)	Fountain Grass
Phoenix canariensis (#)	Canary Island Date Palm
Phoenix dactylifera (#)	Date Palm
Ricinus communis (✓)	Castorbean
Salsola tragus (✓)	Russian Thistle
Schinus molle	Peruvian Pepper Tree or California Pepper
Schinus terebinthifolius	Brazilian Pepper Tree
Schismus arabicus	Mediterranean Grass
Schismus barbatus (✓✓)	Saharan Grass, Abu Mashi
Stipa capensis (✓✓)	No Common Name
Tamarix spp. (all species) (✓✓)	Tamarisk or Salt Cedar
Taeniatherum caput-medusae	Medusa-head

Table 4-113 (cont.)

BOTANICAL NAME	COMMON NAME
Tribulus terrestris	Puncturevine
Vinca major	Periwinkle
Washingtonia robusta	Mexican fan palm
Yucca gloriosa (#)	Spanish Dagger

[1] Sources: California Exotic Pest Plant Council, United States Department of Agriculture-Division of Plant Health and Pest Prevention Services, California Native Plant Society, Fremontia Vol. 26 No. 4, October 1998, The Jepson Manual; Higher Plants of California, and County of San Diego Department of Agriculture.

Key to Table 4-113:
# indicates species not on CalEPPC October 1999 "Exotic Pest Plants of Greatest Ecological Concern in California" list
✓ indicates species known to be invasive in the Plan Area
✓✓ indicates particularly troublesome invasive species

4.5.6 Barriers

Land uses adjacent to or within a Conservation Area shall incorporate barriers in individual project designs to minimize unauthorized public access, domestic animal predation, illegal trespass, or dumping in a Conservation Area. Such barriers may include native landscaping, rocks/boulders, fencing, walls and/or signage.

4.5.7 Grading/Land Development

Manufactured slopes associated with site Development shall not extend into adjacent land in a Conservation Area.

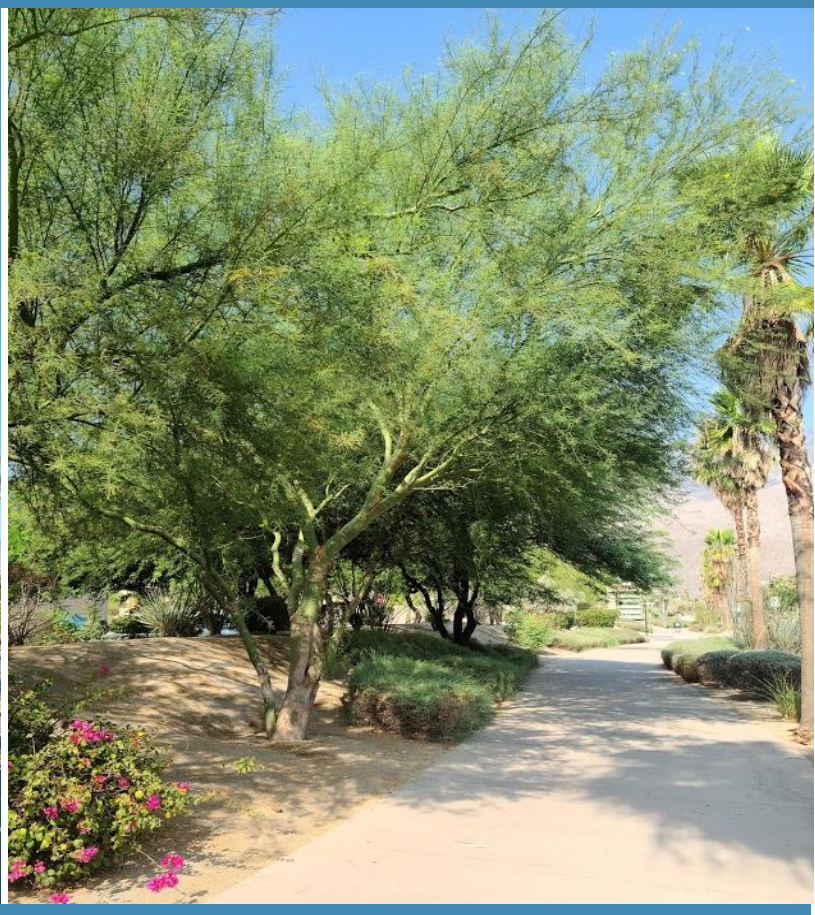
4.6 Impact and Anticipated Levels of Take and Habitat Loss

This section summarizes anticipated Take levels. The information is necessary to assess the Plan's impacts on the Covered Species and the conserved natural communities and to delineate the extent of Take authorized under the permits. A full discussion of the Plan's effects on the Covered Species and conserved natural communities is found in the EIR/EIS accompanying the Plan.

In the Plan, anticipated Take for Listed Species (animal species) for which Habitat distribution models have been developed is measured in terms of Habitat acres affected by the Covered Activities both outside and within the Conservation Areas. For purposes of this calculation, it is assumed that all non-federal lands outside the Conservation Areas may be subject to Take. This represents a worst-case scenario, and Take or Habitat loss at that level is not likely to occur within the 75-year term of the Take Permits. The acres of Take or Habitat loss were determined by overlaying Habitat maps with the Plan Area map, and

Urban Greening Guide

Urban Greening in the Southern California Desert



The best time to plant a tree was 20 years ago. The second-best time is now.

- Chinese proverb

Coachella Valley Association of Governments

October 2021

CVAG

Introduction

The purpose of this guide is to share the benefits of sustainable tree planting with desert homeowners and local jurisdictions to promote urban greening. Urban greening refers to public landscaping and urban forestry projects that create mutually beneficial relationships between city dwellers and their environments. The guide highlights the benefits of trees for cooling, reducing energy consumption, enhancing climate resilience, and promoting wellness. Resources on urban tree planting include tree selection, proper placement for tree planting, and a tree palette.

The desert environment is changing, presenting challenges for growing and maintaining healthy trees. Within the last 20 years, the average yearly temperatures have exceeded the long-term average.[1] Mean temperatures recorded at Coachella Valley weather stations in Indio and Palm Springs have increased 5-6 degrees Fahrenheit over the last 40 years.[2] (WesternRegionalClimateCenterIndioFireStation). Other indicators of climate change affecting trees include drought, heatwaves, record-setting temperature extremes, and increases in damaging insects and disease. These indicators suggest that the desert region should make cooling services a priority, to build resilience to heat-related impacts. Trees offer many benefits to keep urban areas cool in the increasingly hot summers that lie ahead.

> Research done in the Coachella Valley found that areas shaded by trees or vegetation had a ground surface temperature more than 50 degrees F cooler in the summer compared to an exposed, paved parking lot.
>
> - Janet Hartin,
> Area Environmental Horticulture
> Advisor with UC Extension

The information in this guide was compiled from Coachella Valley Association of Governments (CVAG) cities and other desert programs. Arborists, landscape architects, and other landscape professionals were consulted on tree selection and tips for keeping urban trees healthy and long-lived. maintenance practices. These experts provided insight on trees most suitable for the desert climate that helped in development of the tree palette.

Trees, whether for a residential lot, a city park, or to shade a walking path, are an investment of time and money. And, under the best of circumstances, the desert is a challenging environment for trees to grow. Change in the desert climate is affecting the ability for trees to grow successfully and survive for their expected lifespan. Selecting the right tree and ensuring it has the best chance to survive will protect your investment, whether it is one tree for your home, or many trees for a public green space.
There are many great local resources on desert landscaping and trees and this guide is not intended to replace these publications. Check the Resources section to find links to sources with detailed information about planting, irrigation, maintenance, and tree selection.

Acknowledgements

This guide was developed through a collaboration between CVAG and CivicSpark. CivicSpark is a program of the Local Government Commission and Americorps, dedicated to building capacity for local governments by implementing community resilience and sustainability projects. CivicSpark Fellow Tory Brewster developed and authored the guide during her CivicSpark year with CVAG. Energy and Environmental Resources Department staff assisted with the guide development and provided editorial support.

A special thanks to the CVAG Energy and Environmental Resources Committee for identifying urban greening as a priority for the desert region. The concepts for this guide were developed in response to discussions held at Energy and Environment Committee meetings beginning in 2019.

Lastly, thanks to the local experts consulted for the guide. These experts include:

- Jacob Alvarez, Assistant to the City Manager, City of Coachella, Integrated Climate Adaptation and Resiliency Program (ICARP) Technical Advisory Committee Member
- Kirk Anderson, Curator of Gardens, The Living Desert Zoo and Gardens
- Lori Gavitt, Horticulturist/Arborist, The Reserve
- Ron Gregory, Vice President and Director of Landscape Architecture, MSA Consulting, Inc.
- Janet Hartin, Area Environmental Horticulture Advisor, UC Cooperative Extension
- Chris Hermann, President/CEO, Hermann Design Group
- Darrell Jenerette, Landscape and Ecosystem Scientist, Professor of Botany and Plant Sciences and Director, Center for Conservation Biology at University of California, Riverside
- Randy Myers, Owner, Randy G. Myers Nursery
- Paul Ortega, Principal, Paul Ortega Landscape Design and Consulting
- Deanna Pressgrove, Environmental Conservation Manager, City of Cathedral City
- Chris Thompson, President, Green Desert Nursery

Prepared by:
Tory Brewster
CivicSpark Fellow
2020/2021

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Section 1:
Benefits of Trees

NATURAL / ENVIRONMENTAL BENEFITS

Section 1: Benefits of Trees

The desert region is becoming increasingly urbanized. Green spaces in a community are of vital importance to the urban ecosystem. The benefits to humans from nature are known as ecosystem services, often defined as direct and indirect contributions of natural systems to human well-being. We depend on nature for local ecosystem services that have a substantial impact on the quality of life in our communities. Urban greening encourages communities to enhance urban green spaces including parks, street trees, urban trails, desert washes, and cultivated land.

Natural/Environmental Benefits:

Trees offer many environmental benefits in the urban environment. Trees will:

- Reduce energy use through cooling effects and shading buildings
- Improve air quality by absorbing and filtering pollutants
- Reduce urban heat island effect
- Provide habitat for wildlife and enhance biodiversity
- Manage stormwater, reduce flooding, and improve water quality
- Reduce greenhouse gases by carbon sequestration and avoided carbon emissions from reduced energy use
- Beautify a neighborhood
- Reduce exposure to harmful UV radiation[3]

Cooling Benefits of Trees

A significant benefit of urban trees is their ability to moderate temperature and microclimate. Planting the right tree in the right place is key to maximizing the energy-saving and other benefits that trees provide. When planted properly, a single tree can:

- save a homeowner up to 20% on energy costs.
- directly shade your home or buildings, decreasing the need for air conditioning and reducing your energy bill,
- make your home or office more comfortable
- protect your family's health by improving air quality, providing cooling shade for outdoor activities

Trees along the west facing side of buildings shade windows and walls from direct sun. Palm Desert City Hall

The cooling benefits of trees are enhanced by the tree's "canopy", the total amount of leaves and branches which intercept sunlight. Shade from tree canopies creates cool areas underneath by intercepting solar radiation and preventing the warming of the land surface. Selecting trees with broad canopies will provide more shade in parking lots and other urban spaces.

In urban heat islands, nighttime temperatures can be as much as 22° F higher as the heat is gradually released from buildings and pavement.

- *Center for Climate Change and Health*

Improve Air Quality

As urban temperatures increase, so too do airborne pollutants and smog.[4] Trees benefit urban environments by removing significant amounts of major air pollutants, equal to removing the carbon dioxide emissions from 138,510 cars. The ecosystem service urban trees provide is valued at $5.4 billion dollars. The value is based on avoided health care costs, productivity losses associated with adverse health events, and longer lifespans.[5]

Across an entire city, small changes in air temperature could be a huge benefit as it can slow the formation of smog. Just a couple of degrees can also reduce peak power demand, by reducing the energy load from air conditioning.

-Lawrence Berkeley National Laboratory

Provide Windbreaks

Trees also decrease the wind speed under their canopy and shield buildings from cold winter breezes.[6] The more compact the foliage on the group of trees, the more effective the windbreak.[7] To create windbreaks, plant trees north and northwest of a structure. Planting trees on the north and northwest of a building can reduce energy use in the winter.[8] In an area with consistently strong winds like the Coachella Valley, this is yet another benefit of trees.

Enhance Wildlife Habitat and Biodiversity

Just as they provide benefits to humans, urban trees and green spaces provide habitat for wildlife. A lot of attention has been focused on the importance of bees and other pollinators to the ecosystem and the agricultural economy. Selecting specific trees that meet the needs of pollinators encourage these beneficial critters and increase their chance of reproduction. Green spaces and urban trees, especially native species also:

- provide food for wildlife.
- offer nesting and roosting sites for many birds in an urban environment.
- serve as habitat corridors, providing pathways for wildlife to reach surrounding natural habitat.
- provide resources for urban animals, increase biodiversity in urban green spaces.

Desert willow flowers in a parking lot attract birds, bees, hummingbirds

Within urban green spaces, enhancing biodiversity by planting a variety of tree species improves the quality and quantity of habitat for wildlife, reduces the risk of pest infestations, disease, and increase resilience.[9] Sustainable ways of managing urban trees to attract wildlife include avoiding disturbance when pruning to nest sites during the nesting season and avoiding herbicide use. By managing urban trees sustainably, our communities will be enriched by the presence of birds, bats, bees, and other beneficial wildlife for years to come. New management options should be tested and incorporated into local plans to improve sustainable and biologically rich urban green areas.

> Ultimately we need to recognize that while humans continue to build urban landscapes, we share these spaces with other species.
>
> *David Suzuki*

Tree Inventory

Another way to promote biodiversity is to inventory the trees in a community to establish a baseline for setting management objectives. An inventory provides a way for a community to determine what trees they have and where they are planted. Tree inventories collect information on tree species, location, and overall health. Inventories can be conducted on all trees in a municipality, a sample of trees, or on select trees. Data can be used to identify management objectives, identify the diversity of species in an area, and provide information on tree age. Forest assessment tools include the American Forests' CITYgreens and the United States Forest Service's i-Tree (please see Resources section).

ECONOMIC BENEFITS & ENERGY SAVINGS

Economic Benefits:

Besides the beauty they add to urban green spaces, trees have many benefits, including economic benefits. For the United States, the total economic value of the natural benefits that trees provide, including cooling and reduced building energy use, pollution removal, carbon sequestration, and avoided pollutant emissions is $18.3 billion annually or $687 per acre of urban tree cover.[10]

Trees will:

- Save energy and cut costs for summer cooling (shade) and winter heating (windbreak)
- Increase property values, benefiting owners and increasing local tax revenues
- Boost business/commercial district activity and appeal

- Support green industry jobs
- Reduce costs to taxpayers for traditional “grey” infrastructure
- Increase pavement life
- Provide recyclable material such as mulch

Energy Savings:

> Trees can help reduce the roughly 40% of all US energy consumption that is generated by residential and commercial buildings.
>
> -*Vibrant Cities Lab*

Another significant benefit of urban trees is their ability to moderate temperature and microclimate. Shade trees intercept sunlight before it warms a building. Numerous studies suggest they keep your home and property cooler and reduce energy and cooling needs by 20 percent or more. Urban trees also reduce stormwater runoff, minimize soil erosion, and improve urban air quality by reducing smog, which also results in cost savings.

SOCIAL AND WELLNESS BENEFITS: EQUITY IN URBAN GREENING

Social and Wellness Benefits: Equity in Urban Greening

Cities globally have incorporated sustainable development into their planning and led the way in responding to the world’s ecological crisis by “going green.” In addition to natural benefits and cost savings, urban greening provides social and health benefits. Urban green space accessibility is considered as the key to urban sustainability progress, not only environmentally, but also economically and socially.

Though not an exhaustive list, some of these social and equity benefits include:

- Promote public health and wellness
- Encourage physical activity and strengthen community engagement
- Offer safe places to gather
- Reduce crime
- Enhance neighborhoods by creating attractive, shaded outdoor spaces
- Promote social equity and environmental justice in underserved communities
- Create visual and sound buffers
- Create and enhance walkable streets

Health

An increase in the number and intensity of heatwaves has been linked with heatstroke, hypothermia, and increased death rates. The health benefits of pollution removal by trees have been shown to reduce incidences of human mortality and significantly reduce incidences of acute respiratory symptoms.

A relaxing green space at Cancer Survivors' Park, Rancho Mirage

These benefits increase as population density increases because more people receive the pollution removal benefits of trees. Vegetation cover, greenness, has been associated with other health effects such as childhood obesity rates. In addition, research shows that urban trees and vegetation can increase mental energy, improve worker attitudes on the job, and reduce stress, anger, depression, and anxiety.

Supporting Underserved Communities

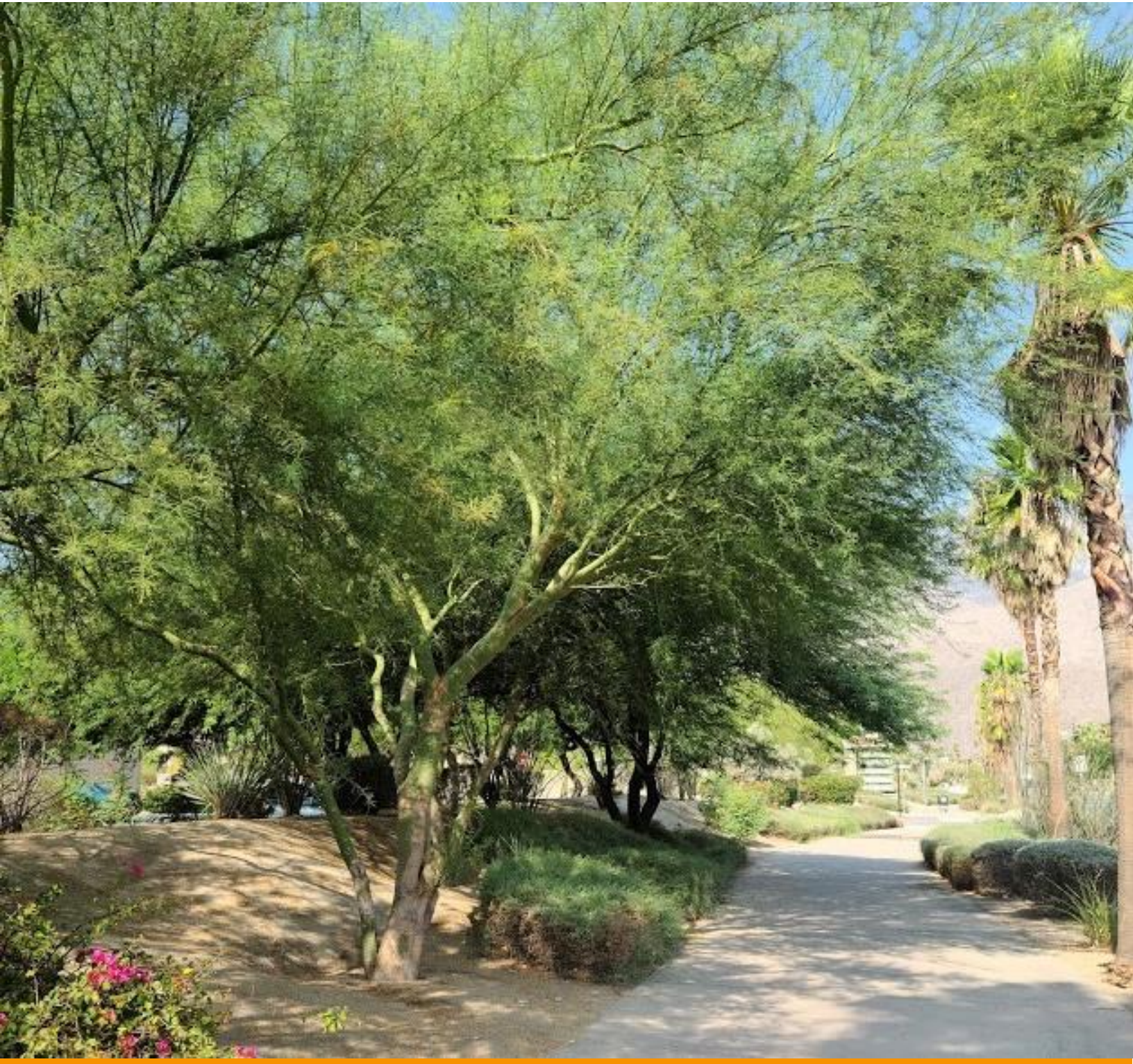
Inequalities in the availability of urban greening enhancements and associated benefits can occur in areas with fewer homeowners and more rental housing. Renters do not own and control the property where they reside and so may be less able to plant and maintain trees. Renters also have a higher rate of mobility than homeowners. Trees require long-term maintenance, and renters may be less able to take on the responsibility. Therefore, areas dominated by rental housing are less likely to have tree cover and receive the natural benefits trees provide.

Equity assessments should be done to consider the current distribution of greening services in traditionally disadvantaged and marginalized communities.

When people have access to natural elements, they experience better health outcomes.[11] Public housing residents report that they can better cope with major life stressors such as poverty, the threat of violence, and raising children in impoverished conditions when green spaces are available.[12]

> Growth is inevitable and desirable, but destruction of community character is not. The question is not whether your part of the world is going to change. The question is how.
>
> *-Edward T. McMahon*

When planning an urban greening initiative, it is essential to incorporate principles of environmental justice and involve community members from underserved communities.



Section 2:
Best Locations for Tree Planting

Section 2: Best Locations for Tree Planting

General Planting Considerations

Placement: Right Tree, Right Place

Proper tree placement can make a big difference in the benefits that tree provides for the urban ecosystem. Planting a tree that is too large for the space provided or in an area that is inadequate for the tree will reduce its success and likely reduce lifespan.[13] One of the principles of selecting the right location to plant trees is using the "Right tree, Right place" method.[14]

These trees have enough space to grow to mature height and are well-placed to provide shade for park seating, creating a natural "cooling center." Cathedral City Hall

Right Tree

In making a tree selection, think about the multiple benefits your tree will offer. A tree to provide shade can also support pollinators, provide nest sites for birds, and edible fruits for humans. Here are some suggestions to think about when selecting the right tree:

- The tree's full-grown size is suited for your site and the space available to plant the tree. The Tree Palette (please see Section 5) can be used to check the size of the tree.
- Only vigorous, healthy trees should be selected because unhealthy trees may present hazards, introduce disease, and unnecessarily increase costs.
- Native species should always be preferred when planting trees in urban areas.
- Native species are better adapted to the local environment, which means they will grow more efficiently and require less water and maintenance.
- Native species also provide better habitat resources for native bees, pollinators, birds, and other wildlife species.
- Cultivars and non-native species that are not invasive may also be selected. Make sure they are tree species that do well in the desert climate and are water efficient.
- When selecting plants for urban greening, think about future shifts in the range of native species due to climate change. As temperatures warm, the range of commonly used desert tree species and their natural boundaries will shift as well.[15]

- Other factors to consider are climate, soil, environmental conditions, planting space, existing vegetation, aesthetics, land ownership and regulations, social influences, and maintenance requirements.[16]

Right Place

Our experts emphasized the importance of planning and design considerations before planting trees. When considering the right place to plant a tree, here are some things to think about:

These trees provide shade at southwest corner of building. It is best to plant trees a minimum of 15-20 feet away from your foundation. Indio City Hall

- Purpose for planting the tree.
- Soil, sun, and moisture conditions
- Tree location (the right place),
- Species growth and form (the right tree)
  - **Height.** Will the tree bump into anything when it is fully grown? Size of a tree at maturity indicates how far away from pavement and powerlines trees should be planted.
  - **Canopy spread.** How wide will the tree grow? Trees with a large canopy provide the most shade and reduce heat.
  - **Form or shape.** Round and V-Shaped species offer the most shade. A columnar tree will grow in less space but may not offer as much shade.
  - **Is the tree deciduous or evergreen?** Will it lose its leaves in the winter?
  - **Growth rate.** How long will it take for your tree to reach its full height? Slow growing species typically live longer than fast growing species.
- Undesirable features. The type of litter a tree drops, such as flowers, berries, pods, sap, and thorns, should be considered for trees in parking lots and other public settings.
- Hardiness zone indicates the temperature extremes in which a tree can be expected to grow. To encourage longer tree life, plant trees in locations where they have enough space to grow. Depending on the mature size of the tree, suggested minimum widths of planting sites for trees are:
- 3 to 4 feet for small trees,
- 4 to 6 feet for medium trees, and
- Greater than 6 feet for large trees

A common theme in the comments from experts was that trees in this region don't live as long as they should, sometimes dying in 15 years or less. Factors that contribute to tree longevity include proper irrigation, permeable surfaces/pavements, quality of tree selected, space the tree needs to grow, and proper maintenance. Some of the challenges for urban trees in the desert region include:

- Improper maintenance and irrigation seem to be the most common issues affecting landscape trees in the desert region.
- Space needs to be big enough for tree to grow. Need larger planters, especially in parking lots.
- Use native species as much as possible.
- Select trees based on low water use.
- Good drainage is essential. Permeable pavers and other permeable materials allow some water to percolate.
- Irrigation is critical to success of trees. Trees need deep watering, not the same schedule as your lawn. Need more frequent watering at first, but over time more infrequent, longer duration (deeper) watering.
    - Drip irrigation allows water to slowly percolate into soil
    - Try an “ooze tube” – 25 ft soaker hose coiled around the base of the tree (less expensive too)
    - Smart timers help deliver water at best schedule
- Pruning and trimming practices need improvement. Don’t top trees as they are more likely to fail. Select trees that don’t interfere with powerlines.
- Allow trees to develop their own natural shape. Allow tree to develop with multiple trunks which better support the tree canopy at maturity and reduce branches breaking.
- Avoid monocultures – use a diversity of tree species.
- Plant palettes from ten years ago need to be updated. There’s a “new normal” affecting trees - extreme heat, climate change, new diseases, and problem insects.
- Plants with more leaves will absorb more CO_2.
- Trees that grow too fast can be weak, get too big, then branches snap.
- Prioritize shade for cooling benefits, reducing heat-related illness.
- Need to allocate money/resources to maintain trees. Avoid species that require too much maintenance.
- Use tree species that are “desert tested.” Our climate is very different from other regions; be cautious with “out of area” recommendations
- Incorporating water saving measures in urban greening projects reduces the cost of water. Creating natural drainage swales or basins that absorb water are two ways to save water.
- Education is needed about tree selection, maintenance, pruning, watering, trees that enhance biodiversity. Involve water agencies, master gardeners, others.

This multi-trunk tree provides shade for sidewalk and seating area and has enough space to grow into its mature height. Along Fred Waring, Palm Desert.

A local arborist or tree care professional, utility company, local nursery, or county extension office can help with proper tree placement.[17]

Shade

In the desert, shade is the first step to reduce energy consumption and save money. Placement of a tree is the key to energy savings. Shade trees do affect summertime electricity use, but the amount of the savings depends on the location of the tree. Strategically placed trees that shade roofs, walls, and walkways will block and dissipate the sun's rays, shielding buildings from unwanted heat.

So, determine the best location for tree planting to maximize the shade benefits of a tree. Trees planted on the south and west sides (or the southwest corner) of a building will create shade from the summer sun, especially in the afternoon, the hottest part of the day.[18] Planting trees on the west side of your property can save as much as 35 percent off air-conditioning bills. Planting trees to shade windows and walls also adds comfort and value to homes and other buildings.

> On the south side of a building, a medium size deciduous tree can reduce irradiance by 80% with leaves on it and 40% leafless, generating energy savings of 2 to 7%
>
> - *Vibrant Cities Lab*

Trees planted along this south-facing wall provide shade for this building during the hottest part of the day.

SPECIFIC SITE GUIDELINES

Specific Site Guidelines

This section looks at some of the things to consider when planting trees in specific sites and provides some suggestions. Consider the opportunities to take advantage of multiple benefits of trees. For example, a parking lot with broad canopy trees offers a lot of shade and also nesting sites for birds. Can the tree be placed to provide shade for a parking lot, a sidewalk, a building at the same time?

Trees planted along a sidewalk on the west-facing side of this building provide multiple shade benefits

Desert willow in parking lot provide shade and produce showy flowers that attract pollinators.

Public Spaces

The size of the tree canopy is an important factor when it comes to selecting trees for parking lots, sidewalks, and other areas where maximum shade is desired. Using the cooling services trees provide is enhanced by placing them in areas where shade is most needed, around well-used park benches, bus stops, walkways, or to shade buildings.

Parking Lots

- Make shade the priority in parking lots
- Larger planters will give trees the room they need to grow and support larger trees which provide more shade.
- Some trees produce sticky substances or fruits, less desirable in parking lots
- How many trees? Suggestions include one tree for four parking spaces, 13 to 15 trees per 1,000 square feet.

Mature Palo verde trees create deep shade in this parking lot. Cathedral City

- Select for lower maintenance, water efficiency, heat tolerance
- Also consider cool pavements, lighter colored to reflect more heat from the sun. Cool pavements reflect as much as 30 to 50 percent of the sun's energy, compared to only 5 percent for new asphalt and 10 to 20 percent for aged asphalt.

Tall slender trees offer limited shade in parking lots. Look for tree species with a broad canopy.

Date palm trees in a parking lot provide a visual statement but offer limited shade.

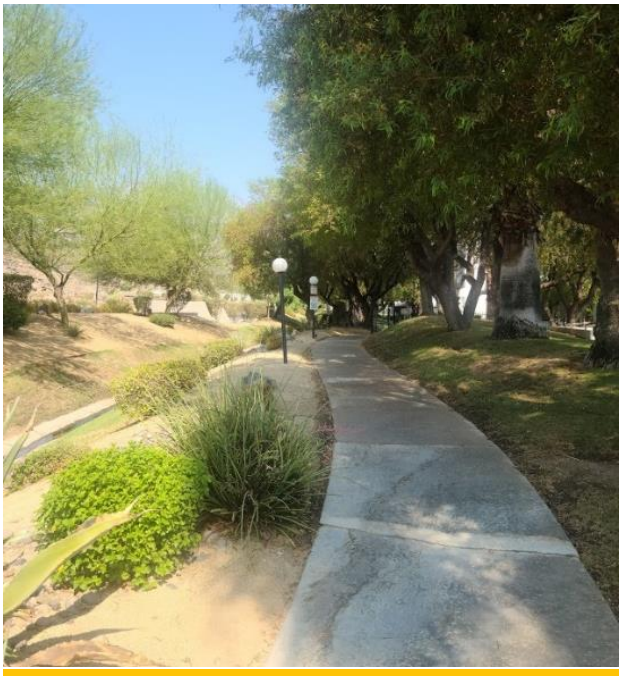
Trees with a broad canopy like these mesquite trees provide deep shade in a parking lot.

Allowing parking lot trees to develop multiple trunks helps support the canopy as the tree matures and creates more shade.

Sidewalks

Creating attractive sidewalks that offer shade and a welcoming environment are increasingly desirable as cities strive to make their streets and public areas more pedestrian and bicycle friendly. Sidewalk landscaping and street trees look attractive, provide habitat for birds and butterflies, and enhance community livability. Adding permeable paving and retention planters improve soil health and help reduce stormwater runoff.

- Planting strips for trees should be a minimum of 3 feet wide
- Use native and drought tolerant species
- Choose deep-rooted tree species which tolerate flooding or drought, need low or no irrigation when established.
- Look for trees that provide multiple benefits – shade, wildlife habitat, soil aeration
- If ongoing irrigation is needed, project should have access to metered water source



Trees provide shading to sidewalks along Highway 111 in Palm Springs.

Cluster of mesquites, palo verde, and palms increase biodiversity and provide deep shade.

Bringing nature back into the city is a way to deal with sprawl. If cities feel a little more natural, people like to live there rather than moving out and dividing up another piece of land that shouldn't be touched.

- *Stone Gossard*

Which sidewalk . . .

. . . Would you rather walk on?

Medians

Attractively landscaped street medians provide esthetic and environmental benefits in urban settings. Streets in urban areas are often wider than necessary and can be enhanced with trees and landscaping. Center medians or landscaped buffers along the edge of urban streets can help reduce traffic speeds while providing beneficial environmental services, such as stormwater retention and greenhouse gas reduction. Additionally, increased pedestrian and bicycle use can improve the overall health of the population and reduce dependence on fossil-fuel based transportation. Here are some suggestions for planting trees in medians:

- Trees may be planted in medians four feet or wider, including curbs.
- Median trees should have arching canopy structures for visibility; upright and columnar trees work well.
- Tree species selected for planting on median strips that are 4 to 6 feet wide should be expected to grow to trunk diameters no greater than 12 inches.
- On median strips greater than 6 feet wide, trees obtaining larger diameters may be used.
- Choose drought tolerant / water efficient, low maintenance species
- Trees with columnar form are appropriate for narrower planting spaces such as small streets, alleys, and narrow medians.

- Trees located in medians should have a vertical clearance of the lowest branch of 8 feet in height over the median, and 14 feet in height for any portion of the tree that overhangs the roadway.
- Landscaped medians reduce impervious space in the roadway, allowing stormwater infiltration or retention in the exposed soil. Medians can also be designed to retain, cleanse, and infiltrate stormwater runoff from the roadway. Where stormwater management is intended in the median, the street should be graded to drain toward the median.

Use tall columnar trees, such as palms, and smaller trees in medians. Use broad canopy trees, such as mesquite, along sidewalks for maximum shade. Palms provide very little shade as a sidewalk tree.

Safety

Once a site is identified, make sure that it is suitable for trees. Some important considerations include:

- Safety—trees should not be planted very close to buildings or in locations where they could impair driver visibility or otherwise cause traffic problems.
- Trees should not be grown in an area where they are likely to interfere with existing underground or overhead utility infrastructure.

Consider utility lines, sidewalks, and driveways when choosing a location.

Conduct a visual inspection and use PA One Call (pa1call.org/PA811/Public/) to ensure that the proposed site will not require tree planting in a utility right of way.

URBAN GREENING AT HOME

Use the principles of Right Tree, Right Place. Before you plant a tree around your home, determine the best location to maximize the shade benefits of a tree. Spend some time observing the path of the sun and where shade on your roof, walls and windows is most needed, especially in the afternoon, the hottest part of the day.[19] Planting trees to shade windows and walls also adds comfort and value to your home.

Shade is the first step to reduce energy consumption and save money. Shade your:

- Walls & windows. Start on the south and west-facing walls
- Outdoor air conditioner – it will run cooler.[20]
- Concrete (driveways, patios) to reduce glare
- Concrete to reduce radiated heat (heat island effect)

Plant some trees to save some green:

- Trees enhance the microclimate and are the first line of defense against unwanted heat.
- Trees and green spaces around your home provides shade on buildings and can decrease air conditionings costs by 20%
- Select trees that balance shade and water use. Some trees just gulp too much water
- Trees add value to your property

Mature palo verde trees planted on the southwest corner (left photo) and south-facing (right photo) of the home provide shade during the hottest part of the day.

Irrigation is critical to the success of trees.

- Trees need deep watering, not the same schedule as your lawn. More frequent watering at first, but over time more infrequent, longer duration (deeper) watering.
- Drip irrigation allows water to slowly percolate into soil
- Try an “ooze tube” – 25 ft soaker hose coiled around the base of the tree (less expensive too)
- Smart timers help deliver water at best and most efficient schedule. Check with your water district about smart timer rebate programs.

Section 3:
Tree Palette

Section 3: Tree Palette

The following tree palette includes native and water efficient trees that are suited to the desert climate. The tree palette includes recommendations from local landscape experts consulted during preparation of this guide. Information presented about each tree was gathered using sources found in the Resources appendix.

The use of local native species is strongly encouraged. Native species are highlighted in green, including cultivars of native species.

SCIENTIFIC NAME	COMMON NAME	DESCRIPTION					MAINTENANCE						EMISSIONS REDUCTION	
Scientific Name	Common Name	Evergreen (E) or Deciduous (D)	Height (Feet)	Width (Feet)	Longevity (Years)	Shade Low (L), Moderate (M), Dense (D) in Leaf	Maintenance Level High (H), Medium (M), Low (L)	Native	Litter	Pest & Diseases	Biodiversity	Health, Safety & Environmental Concerns	CO2 Sequestered (lbs.) Tree Lifetime	CO2 Sequestered ($) Tree Lifetime
Acacia aneura	mulga	E	15-20	15-20	50-150	M			dry fruit	invasive shot hole borer, root rot	attracts birds, not deer palatable	branch strength medium, root damage potential low, allergy health hazard	65.4	1.52
Acacia farnesiana	sweet acacia	D	15-25	15-25	<50	M			dry fruit	resistant to Texas root rot, susceptible to invasive shot hole borer, caterpillars, root rot	attracts birds, not deer palatable	branch strength weak, root damage potential low, allergy health hazard, biogenic emissions moderate	20	0.40

SCIENTIFIC NAME	COMMON NAME	DESCRIPTION					MAINTENANCE						EMISSIONS REDUCTION	
Acacia greggii (now Senegalia greggii)	catclaw acacia	E	25	20-30		D		•			deer resistant			
Acacia stenophylla	shoestring acacia	E	20-30	10-20	<50	L			dry fruit	susceptible to invasive shot hole borer	attracts birds, not deer palatable	branch strength weak, allergy health hazard	558.3	12.99
Albizia julibrissin	silk tree, mimosa tree	D	20-35	20	<50	L	H		flowers, dry fruit	susceptible to invasive shot hole borer, caterpillars, armillaria, fusarium and root rot	attracts birds, not deer palatable	branch strength medium weak, root damage potential moderate, allergy health hazard, biogenic emissions moderate	56.3	1.31
Bauhinia variegata	purple orchid tree	D	20-35	20-35	40-150	M	M		dry fruit	susceptible to aphids	attracts birds	branch strength medium, root damage potential low, no known health hazard, biogenic emissions moderate	819.7	19.06
Brahea armata	Mexican blue palm	E	20-50	12-25	50-150	M	M		wet fruit	resistant to Texas root rot, susceptible to crown rot	attracts butterflies	branch strength medium, root damage potential low, no known health hazard	368.7	8.57
Butia capitata	pindo palm	E	25	10-12			M		edible fruit	susceptible to root rot and scales	deer resistant, attracts mammals			

SCIENTIFIC NAME	COMMON NAME	DESCRIPTION					MAINTENANCE						EMISSIONS REDUCTION	
Callistemon viminalis	weeping bottlebrush	E	15-20	15-20	40-150	M	M		dry fruit	susceptible to armillaria and root rot	wildlife use fruit, attracts birds and bees, not deer palatable	branch strength medium, root damage potential low, allergy health hazard, biogenic emissions high, fire resistance favorable	56	1.30
Chamaerops humilis	Mediterranean fan palm	E	10-15	10-15	<150	M	M		fruit	resistant to Texas root rot	not deer palatable	branch strength strong, root damage potential low, no known health hazards	80.8	1.88
Chilopsis linearis	desert willow	D	15-30	10-20	40-150	L	M	•	dry fruit	resistant to Texas root rot, susceptible to root rot	attracts birds, wildlife use fruit	branch strength medium, root damage potential low, allergy health hazard, biogenic emissions moderate	136.7	3.18
Chorisia speciosa	silk floss tree, kapok	D	35-50	40-55		M	M		dry fruit	no concerns	attracts birds			
Cupressus arizonica	Arizona cypress	E	40	40		D	L			susceptible to leaf blight	deer resistant			
Eucalyptus microtheca	coolibah	E	35-50	25	50-150	D	M		dry fruit	resistant to Texas root rot and verticillium, susceptible to beetle borers, armillaria and root rot		branch strength medium, root damage potential moderate, no known health hazards	228.5	5.31

SCIENTIFIC NAME	COMMON NAME	DESCRIPTION					MAINTENANCE						EMISSIONS REDUCTION	
Eucalyptus spathulata	swamp mallee	E	20-40	20	50-150	M	M		dry fruit	resistant to Texas root rot and verticillium, susceptible to beetle borers, armillaria, phytophthora and root rot	attracts birds, not deer palatable	branch strength medium, root damage potential low, no known health hazards		
Eucalyptus papuana	ghost gum	E	65	20-50		M	L		dry fruit	susceptible to armillaria, phytophthora, root rot and beetle borers, resistant to Texas root rot and verticillium	deer resistant, attracts birds	no known hazards		
Fraxinus uhdei	majestic beauty ash, evergreen ash	E	70-80	60	50-150	M	M		dry fruit	resistant to armillaria, susceptible to scales and white fly, root rot, sooty mold and verticillium	desirable wildlife plant	Branch strength medium, root damage potential moderate, allergy health hazard, fire resistance favorable	990	23.02
Geijera parviflora	Australian willow	E	25-35	20	50-150	M	M		dry fruit	resistant to armillaria	attracts bees, wildlife use fruit	branch strength medium, root damage potential low, no known health hazards, biogenic emissions moderate	7913.6	184.05

SCIENTIFIC NAME	COMMON NAME	DESCRIPTION					MAINTENANCE						EMISSIONS REDUCTION	
Lagerstroemia indica	crape myrtle	D	25	25	50-150	M	M		dry fruit	resistant to Texas root rot, susceptible to aphids, powdery mildew and sooty mold	attracts birds	branch strength medium, root damage potential low, no known health hazards, biogenic emissions low	1353	31.47
Lysiloma watsonii v. thornberi	feather tree	D	15	12-15	<50		M		dry fruit	resistant to Texas root rot	deer resistant, attracts birds	no known hazards		
Melaleuca quinquenervia	cajeput tree	E	20-40	15-25	50-150	M	M		dry fruit	susceptible to phytophthora and root rot	attracts birds and bees, wildlife use fruit	branch strength medium, root damage potential low, allergy and irritant health hazard, biogenic emissions high		
Olneya tesota	desert ironwood	E	15-30	15-30	50-150	L	L	•	dry fruit		desirable wildlife plant	branch strength strong, root damage potential low, no known health hazards, biogenic emissions moderate	227.1	5.28
Parkinsonia x 'Desert Museum'	desert museum palo verde	D	15-20	20-25	40-150	M	M	•	dry fruit		desirable wildlife plant, attracts bees	branch strength medium, root damage potential low, no known health hazards, biogenic emissions moderate		

SCIENTIFIC NAME	COMMON NAME	DESCRIPTION					MAINTENANCE						EMISSIONS REDUCTION	
Parkinsonia florida	blue palo verde	D	25	15-20	50-150	L	L	•	dry fruit		attracts birds and bees, wildlife use fruit	branch strength medium, root damage potential low, no known health hazard, biogenic emissions moderate	474.3	11.03
Phoenix dactylifera	date palm	E	80-100	20-40	50-150	M	M		dry fruit and leaves	resistant to Texas root rot	attracts birds, wildlife use fruit	branch strength strong, root damage potential moderate, allergy health hazard, biogenic emissions high	132.3	3.08
Pinus eldarica	Afghan pine, Mondale pine	E	30-80	15-25	50-150	D	L		dry fruit	resistant to verticillium, susceptible to aphids and armillaria	attracts birds and squirrels, not deer palatable, wildlife use fruit	branch strength medium strong, root damage potential moderate, allergy health hazard	2468.10	57.40
Pinus pinea	Italian stone pine	E	40-80	40-60	50-150	D	M		dry fruit	resistant to verticillium, susceptible to aphids, armillaria, phytophthora, root rot, pitch canker	attracts birds and squirrels, not deer palatable, wildlife use fruit	branch strength weak to medium weak, root damage potential moderate, allergy health hazard		
Pistacia chinensis	Chinese pistache	D	25-35	25-35	>150	M	M			resistant to armillaria, susceptible to verticillium and root rot	attracts birds	branch strength strong, root damage potential low, allergy health hazard, biogenic emissions moderate	1515.50	35.25

SCIENTIFIC NAME	COMMON NAME	DESCRIPTION					MAINTENANCE						EMISSIONS REDUCTION	
Prosopis chilensis	Chilean mesquite	D	30	30	50-150	L	L		dry fruit		attracts birds	branch strength medium, root damage potential low, no known health hazards	563.2	13.10
Prosopis glandulosa v. glandulosa	honey mesquite	E	25-35	25-35		L	L	•	fruit and leaves		attracts birds and mammals, wildlife use fruit	root damage potential low	774.8	18.02
Prosopis hybrid phoenix	phoenix mesquite	E	30	30		M	L				attracts bees			
Prosopis pubescens	screwbean mesquite	D	10-33				L	•	twisted seed pods		attracts a wide variety of animals, host to the marine blue and Leda ministreak, and Palmer's metalmark butterfly		1347.60	31.34
Prosopis velutina	velvet mesquite	D	30	30	50-100	L	L		dry fruit		attracts birds and bees	branch strength medium, root damage potential low, no known health hazards	55.4	1.29
Prunus cerasifera	thunder cloud, purple plum	D	20	20	<50	D	M		wet fruit	susceptible to caterpillars, armillaria, root rot, rust, sooty mold and verticillium	attracts birds	branch strength medium, root damage potential low, no known health hazards, fire resistance favorable	471.7	10.97

SCIENTIFIC NAME	COMMON NAME	DESCRIPTION					MAINTENANCE						EMISSIONS REDUCTION	
Punica granatum	pomegranate	D	20	15	50-100	D	M		wet fruit	resistant to Texas root rot, susceptible to plant bug, white fly, chlorosis and sooty mold	desirable wildlife plant	branch strength medium, root damage potential low, no known health hazards, fire resistance favorable		
Quercus virginiana	southern live oak	E	40-80	60-100	>150	M	M		dry fruit	resistant to verticillium, susceptible to insect galls, armillaria, phytophthora and root rot	attracts birds and squirrels	branch strength strong, root damage potential moderate, allergy and poisonous health hazard, biogenic emissions high	6717.10	156.22
Rhapis excelsa	slender lady palm	E	5-15	5-15	50-150	M	M		dry fruit	resistant to Texas root rot		branch strength medium, root damage potential low, no known health hazards, biogenic emissions low		
Rhus lancea	African sumac	E	20-30	20-35	50-150	M	M		dry fruit	susceptible to root rot and verticillium	attracts birds	branch strength medium, root damage potential low, no known health hazards, biogenic emissions low, fire resistance favorable	127.2	2.96
Sophora secundiflora	Texas mountain laurel	E	15-25	10-15	50-150	M	L		dry fruit		attracts bees	branch strength medium, root damage potential low, poisonous health hazards	117.5	2.73

SCIENTIFIC NAME	COMMON NAME	DESCRIPTION					MAINTENANCE						EMISSIONS REDUCTION	
Syagrus romanzoffiana arecastrum romanzoffianum	queen palm	E	50	25-30			M			susceptible to butt rot, armillaria, root rot, scales, and spider mites, resistant to Texas root rot	deer resistant, attracts birds		750.1	17.44
Trachycarpus fortunei	windmill palm	E	30	10	50-150	D	M		dry fruit	resistant to Texas root rot		branch strength medium		
Ulmus parvifolia	evergreen elm, little leaf elm	D	45	35-50			M		dry fruit	susceptible to Dutch elm disease, armillaria, phytophthora, root rot, aphids, beetle borers, beetle leaves, and caterpillars		allergy health hazards	5086	118.28
Vitex agnus-castus	chaste tree	D	10-15	15-20	50-150	M	L		dry fruit	resistant to armillaria	attracts bees	branch strength medium weak, root damage potential low, no known health hazard	31.6	0.73
Washingtonia filifera	California fan palm	E	50-70	10-20	50-150	D	M	•	dry fruit and leaves	resistant to Texas root rot, susceptible to armillaria		branch strength medium strong, root damage potential moderate, allergy health hazard, biogenic emissions moderate, fire resistance favorable	480.6	11.18

SCIENTIFIC NAME	COMMON NAME	DESCRIPTION					MAINTENANCE						EMISSIONS REDUCTION	
Washingtonia robusta	Mexican fan palm	E	80-100	5-10	50-100	D	M		dry fruit and leaves	resistant to Texas root rot, susceptible to beetle borers		branch strength medium strong, root damage potential moderate, allergy health hazard, biogenic emissions moderate, fire resistance favorable	489.5	11.38

Section 4: Planning

Section 4: Planning

Initial Planning Guidance

Urban greening initiatives require hard work, dedication, and advanced planning. Most urban greening grants require the completion of a project proposal (See Appendix I for more information on grants). This section describes how to create a project proposal that can be used for both grant applications and local funding greening initiatives.

In the initial planning stages, it is crucial to outline urban greening goals, consider whether the project is eligible for urban greening grants, and complete a basic plan overview. Afterward, use the project outline to complete the advanced planning steps.

Define Project Objectives

To begin planning, start by defining the purpose of the urban greening project. Describe who the beneficiaries will be and what the intended services are. Examples of project objectives include:

- Improve the environment
- Increase the value of your property
- Provide a shaded space for recreation
- Prevent soil erosion by wind or water
- Provide habitat and food for wildlife
- Conserve energy

Cathedral City Council plants trees at Cathedral City Elementary School for Clean Air Day
Desert Sun, 10/17/2019

Project Plan Overview

After project goals have been determined, create a project overview to specify how this project will be implemented. Consult local experts to aid in this process. A project plan overview should include:

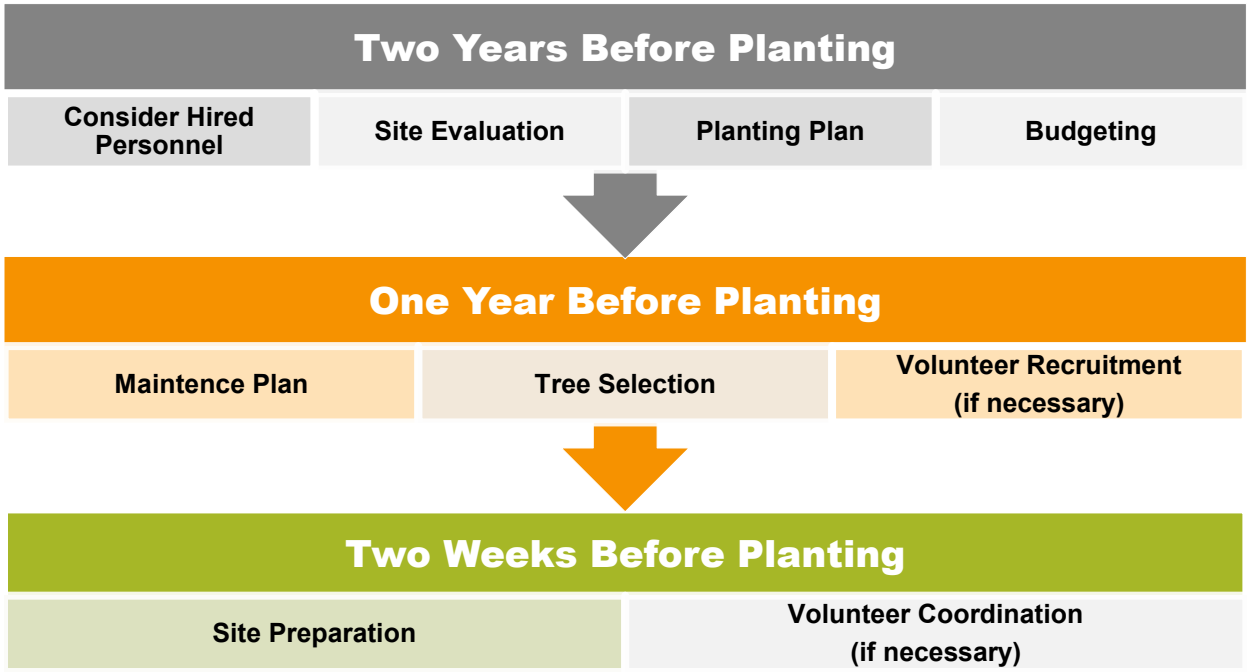
- A description of your objectives
- A map of the property and a site description
- Detailed plans for site preparation
- The number of trees required by species
- Planting arrangement and tree spacing
- Plans to control unwanted vegetation

Advanced Planning

Outline Plan for Project

Foster long-term sustainability within the project by outlining objectives for a year, two years, and beyond the initial tree planting. The purpose of the outline is to plan specific tasks that need to be finished.

Consider the following timeline and corresponding planning steps when outlining a project plan. An example outline is included in Appendix II.



Consider Hired Personnel

Consider which contracts and consultants will be working on the projects. Define who the personnel will be and how they will be contributing to the project.

Site Evaluation

Several factors about a site will determine what tree species will do well and what type of planting stock will be the most successful.

These factors include:

- Soil type and level of compaction
- Soil moisture and average precipitation rates
- Light availability

- Slope
- Air quality
- Level of foot traffic
- Existing vegetative cover

It is best to have an arborist or other landscape professional assess the site before developing a planting plan. Low or no-cost services may be available through local master gardeners. In addition, certain landowners may have people on staff, such as grounds managers or landscape architects, who can also help. Once a site evaluation is completed, the next step is to develop a planting plan.

Planting Plan

Essential elements of a planting plan will be influenced by the site conditions, project goals, and available budget, and include the following:

- Size of area to be planted
- Recommended tree density
- Species selection and number of each species
- Location of various species and spacing on the site
- Recommended planting stock type (bare root vs. containerized vs. ball and burlap)
- Inventory of other supplies needed (e.g., tree shelters, stakes, support cables, or zip ties)

Coachella Grapefruit Blvd. Urban Greening and Connectivity Project. City of Coachella. February 2021

Site Selection

Network with community stakeholders and interest groups to help identify sites that would benefit from additional trees. These include:

- Municipal officials and employees (public works departments, park and recreation departments)
- School districts
- Local environmental, social justice, gardening groups or other grassroots organizations
- Holders of large tracts of private land (commercial, industrial, and agricultural)
- Holders of large tracts of public land (state or federal facilities)

Maintenance Plan

A long-term maintenance plan is a good idea for any tree planting. A maintenance plan should include an irrigation plan, vegetation clearance plan. As well as information on spot inspections, how invasive species will be monitored, and the replacement of dead trees.

Irrigation/watering Plan: Does the planting plan call for any watering in addition to average precipitation? If so, the maintenance plan should describe who will water the trees and how often.

Vegetation Clearing: Vegetation should be cleared from around the base of newly planted trees at least once per year to decrease cover for voles and other rodents that like to chew on small trees.

The mulched spot around the young tree should be 4- to 6-feet in diameter. The maintenance plan should identify who will clear the vegetation and what method will be used. Vegetation clearing can generally be stopped once the trees reach 4- to 5-inches in trunk diameter.

> Unlike the urban development that I see taking over and swallowing up our precious soil, when we interact with our environment in a way that allows for regeneration and natural spaces, the outcome can be beautiful.
>
> - *Cory Trepanier*

Spot Inspections: The planting site should be spot-inspected twice a year, preferably once after leaf-out in May and once in October or November. During the examination, any downed or leaning trees should be straightened. Any damage to shelters or cages used to protect trees from animals should also be noted and corrected, if possible.

Finally, any dead or unhealthy trees should be emphasized. The maintenance plan should identify who will conduct these inspections and the person that will keep inspection notes from year to year.

Replacing Dead Trees: It is expected that some planted trees will die before maturity, and there is generally a strong relationship between the size of trees at planting and the rate of survivorship. Ball and burlapped trees and large containerized trees will survive significantly higher than tiny bare-root seedlings.

If there are project goals related to canopy cover or buffering a water body, replacing some or all the trees that perish may be necessary. The maintenance plan should identify who will make decisions about replacements and be responsible for coordinating replacements.

Invasive Species Monitoring: Invasive species are not native to a particular area and prone to establishing large numbers, out-competing, or otherwise harming native species. All newly planted tree sites should be monitored for new invasions with special

care to eliminate any species that are either known pests to trees or on the state noxious plant list.

Tree Selection (Year Before)

Most people aren't thinking too much about trees in the winter. But most large nurseries start collecting orders, substantial orders, during winter, several months in advance of planting. Ordering too late means you run the risk that nurseries will be out of trees in the species and sizes desired, requiring substitutions.

Orders should be planned for other supplies such as tree shelters or cages (the number and type should be specified in the planting plan), mulch, and stakes (numbers and lengths should be stated in the planting plan). Stakes made of white oak wood are the most rot-resistant and are recommended for wet sites. Drier upland sites will be fine with stakes made of other hardwoods, such as locusts.

Volunteers or Hired Labor

Tree planting is a great way to get people of all ages involved in bettering their local community. Engaging with various volunteer groups promotes community engagement.

The following types of groups may be ready and willing to supply volunteers.

Early on, agree on a planting date with each volunteer group, get a rough estimate of how many volunteers will be on-site, and obtain any government clearances that may be necessary to work with children or youth volunteers.

Site Preparation

Use the maintenance plan to prepare a site for tree planting. Consider the following site preparation steps when creating the maintenance plan:

- Remove any existing, unwanted plants through physical means (mowing or using a brush hog if necessary). Use lawn flags to mark the spots where trees should be planted according to the planting plan. Flags should be color-coded or otherwise labeled to indicate tree species.
- If the maintenance plan calls for mowing and herbicide to keep the vegetation around the base of trees, it is best to mow and conduct the first herbicide application before the trees are planted. Spray a spot roughly 4 to 6 feet in diameter around the space where the tree will be planted.

- The use of herbicide should always be done by a trained professional and strictly according to label instructions. If heavy equipment is used for digging holes, have the equipment dig the pits before the planting.
- Likewise, if the volunteer or labor pool for hand planting is too small for the project size, digging and planting should be broken into two different days.

Budgeting

Planning for a tree-planting program or applying for an urban greening grant will require a budget assessment. To estimate the cost of your project, consider the following expenses:

- Contractors for Construction and Site Preparation
  - Asphalt removal or related hardscaping where plantings involve the establishment of a new permanent planting site.
  - Hardscape cuts
  - Expansion of existing planting sites.
  - Up to 50% of soil testing costs to determine the needs for the site.
  - Other related construction costs.
- Trees and planting materials
  - Cost of trees
  - Stakes, ties, and root collars are proportional to the number of trees planted.
  - Wood chip surface mulch, soil amendments in areas of hard clay soil or sandy soil.
  - The soil was needed for backfill
  - Structural pruning stake adjustment and removal for newly planted trees.
  - Water-wise or hydro-zone irrigation and supplies.
  - Replacement costs for trees planted in the first two years of the project.
- Equipment
  - Purchased or rented materials and tools required for project purposes.
  - Pruning and gardening supplies.
  - Personal protective equipment.
  - Other related expenses.
- Acknowledgment signage
  - Construction and material costs
- Education/Outreach Component
  - Development of educational materials.
  - Outreach relevant to the scope of the proposed project.
- Administrative costs directly related to the implementation of the project
  - Mileage to and from the project site.
  - Liability insurance for project implementation.
  - Materials for personnel hired solely for this project.
- Indirect costs

Appendix I: Grants

Grant Eligibility

Grants significantly reduce the cost of urban greening projects. Urban greening grants typically have standards for eligible and ineligible projects. These standards must be followed when planning an urban greening project that requires financial support. Decide whether project objectives align with grant eligibility requirements. Eligibility may vary depending on the grant. Below are some examples of projects eligible for urban greening grants.

- Establishment, enhancement, and expansion of neighborhood parks and community spaces.
- Greening of public lands and structures, including schoolyards, may include incorporating riparian habitat for water capture and providing for other public and wildlife benefits.
- Green streets and alleyways.
- Non-motorized urban trails that provide safe routes for travel between residences, workplaces, commercial centers, and schools
- Urban heat island mitigation and energy conservation efforts. All eligible projects must result in GHG reductions by including at least one of the following activities:
  - Sequester and store carbon by planting trees
  - Reduce building energy use by strategically planting trees to shade buildings
  - Reduce commute vehicle miles traveled by constructing bicycle paths, bicycle lanes, or pedestrian facilities that provide safe routes for travel between residences, workplaces, commercial centers, and schools

Grant Resources

This is a list of some of the grant programs that focus on urban greening, tree planting, and urban forest resilience. It is not a comprehensive list and some grant programs may be pending future funding. It is anticipated that additional funding opportunities for urban greening programs will arise in the future as efforts to address climate change and urban community resilience increase.

Urban Greening Program. California Natural Resources Agency.

- Funds local green infrastructure projects to reduce emissions, expand green space, and create more sustainable communities. The program is part of "California Climate Investments," funded by the state's cap and trade auction revenues.
- Check the program website for funding availability and future updates. To find out more: https://resources.ca.gov/grants/urban-greening
- Some examples of local projects funded by this program:
  - Riverside County Transportation Dept. Mecca Neighborhood Park and Greening Project, $1,093,708. 2021. The project will create two green street

corridors in the community of Mecca, including planting trees and developing a pocket park within a park-poor and tree-poor community. http://rivcocob.org/proceeds/2021/p2021_02_09_files/03.29001.pdf

- ❖ City of Coachella. Grapefruit Boulevard Urban Greening and Connectivity Project. Project to plant 288 trees along Grapefruit Blvd, provide pedestrian facilities and bicycle lanes. $3,189,153. 2018. Project broke ground in February 2021.
  - http://www.caclimateinvestments.ca.gov/2020-profiles/urban-greening;
  - https://www.desertsun.com/story/news/2018/11/02/coachella-receives-3-19-m-state-grant-urban-greening/1860673002/
  - https://nbcpalmsprings.com/2021/02/05/officials-in-coachella-break-ground-for-grapefruit-blvd-urban-greening-and-connectivity-project/

California ReLeaf

- California ReLeaf is a non-profit organization that works statewide with community-based groups, individuals, industry, and government agencies, to contribute to the livability of our cities and the protection of our environment by planting and caring for trees. They also increase access to urban forestry funding by providing sub-grants to community groups. They maintain a list of other public grant programs for urban forest or urban greening projects.
- To find out more: https://californiareleaf.org/programs/grants/

Urban and Community Forestry Challenge Cost Share Grant Program. USDA Forest Service

- Funds innovative proposals for programs to address urban and community forest resilience and planning disaster mitigation strategies for urban forests.
- The 2021 funding cycle closed on April 21, 2021.
- To find out more: https://www.fs.usda.gov/managing-land/urban-forests/ucf

Urban Flood Protection Grant Program. California Natural Resources Agency

- Funds stormwater capture and reuse, restoration of urban watersheds, and increasing permeable surfaces to help reduce flooding. Urban forestry example projects “retrofit/naturalize a stormwater detention basin by introducing trees, vegetation, and soils to slow, spread and filter runoff, increase infiltration, and create wildlife habitat.”
- Awards for current cycle anticipated in August 2021.
- To find out more: https://resources.ca.gov/grants/ufp

Appendix II: Resources

Appendix II: Resources

Tree Selection and Care

The following list of resources cover a diversity of topics related to tree selection and care. Many of these resources were recommended by the experts consulted in preparing this guide. This is not an exhaustive list but focuses on resources that are particularly relevant for desert landscapes.

University of California Resources

Master Gardener Helpline (specifically for addressing home horticulture issues in the Coachella Valley) - email: anrmgindio@ucanr.edu

Sustainable Landscaping in California: https://anrcatalog.ucanr.edu/Details.aspx?itemNo=8504

Keeping Plants Alive Under Drought and Water Restrictions: https://anrcatalog.ucanr.edu/Details.aspx?itemNo=8553

Lawn Watering Guide for California: https://anrcatalog.ucanr.edu/Details.aspx?itemNo=8044

Use of Graywater in CA Landscapes: https://anrcatalog.ucanr.edu/Details.aspx?itemNo=8536

Univ. of CA ANR Landscape Publication: https://anrcatalog.ucanr.edu/Items.aspx?hierId=250000

Univ. of CA ANR Pest Management Publication: http://ipm.ucanr.edu/

Univ. of CA IPM Diagnostic Tool for Identifying Diseases and Insect Pests: https://www2.ipm.ucanr.edu/diagnostics/

Plant a Tree. Leave a Legacy! Janet Hartin's Blog: https://ucanr.edu/b/~T4C

Trees Come First Under the Drought, Janet Hartin's Blog: https://ucanr.edu/b/~D6C

Other Tree Maintenance Resources

Lush & Efficient: Desert-Friendly Landscaping in the Coachella Valley, Coachella Valley Water District: https://www.cvwd.org/DocumentCenter/View/4916/2016-Lush--Efficient-New-Revised-Edition-PDF?bidId=

Free and credible information from the International Society of Arboriculture: https://www.treesaregood.org

Find a certified arborist: https://www.treesaregood.org/findanarborist

Educational fact sheets' on trees (proper planting, pruning, staking, benefits of trees, etc.): https://www.treesaregood.org/education

SEARCHABLE TREE / PLANT FINDERS

Searchable Tree / Plant Finders

A great way to identify trees for your urban greening project or planting at home is to consult tree and plant finder websites. The following list includes some useful resources to help you with trees selection.

Be sure to look for trees that will grow in your climate zone.

Sunset magazine climate zones:
https://www.sunset.com/garden/climate-zones/sunset-climate-zone-california-desert

U.S. Department of Agriculture Plant Hardiness zones: https://planthardiness.ars.usda.gov/

Tree/Plant Finders

SelecTree: A Tree Selection Guide. Urban Forest Ecosystems Institute (UFEI), California State Polytechnic University: https://selectree.calpoly.edu

- Select a tree by name or desirable characteristics. Includes tree photos, characteristics, planting considerations. Urban Tree Key helps you identify a tree.

Calscape: Restore Nature one Garden at a Time. California Native Plant Society (CNPS):
http://www.calscape.org/

- Find out which plants are really native to your area, figure out which plants you want to plant, where to buy them and how to grow them. Type in your address to get list of trees and other native plants that do well in your area.

Water Use Classification of Landscape Species (WUCOLS): http://ucanr.edu/sites/WUCOLS

- The University of California Agriculture and Natural Resources (UCANR) tool provides guidance in the selection and care of landscape plants relative to their water needs. WUCOLS helps estimate the amount of water and type of irrigation for a tree project.

i-Tree: Tools for Assessing and Managing Forest and Community Trees.
https://www.itreetools.org/

- i-Tree provides data that you can use to demonstrate value of trees, the environmental benefits that trees provide, and set priorities for more effective decision-making in your community. The i-Tree Planting tool can be used to estimate tree carbon storage, energy savings, and pollution reduction for trees to be planted.

The Sustainable Urban Forest: A Step-by-Step Guide.
https://www.itreetools.org/documents/485/Sustainable_Urban_Forest_Guide_14Nov2016_pw6WcW0.pdf

- Alliance for Community Trees. Arbor Day Foundation.

Other Resources

- Greening without Gentrification Guide

https://www.ioes.ucla.edu/wp-content/uploads/Parks-Related-Anti-Displacement-Strategies-report-with-appendix.pdf.

Allergy-Free Gardening
http://www.allergyfree-gardening.com/

- Allergy free Gardening Considerations for Asthmatic and Sensitive Residents

Urban Greening and Related Plans

The City of Indio's Transformative Climate Communities Plan. January 2021. https://indiotccplan.com/wp-content/uploads/2021/01/IndioTCC-FINAL_150dpi.pdf.

City of Palm Springs Sustainability Plan. May 2016. Urban Forests and Natural Systems (pages 47-51). https://www.palmspringsca.gov/home/showdocument?id=44449

City of Palm Springs Inventory of Public Trees and Urban Forest Management Report. June 2015. City of Palm Springs Inventory of Public Trees. City of Palm Springs GIS Based Tree Inventory and Urban Forest Management System powerpoint: https://www.palmspringsca.gov/home/showdocument?id=37335

City of Palm Springs website: Sustainability & Recycling, Tree Programs. https://www.palmspringsca.gov/services/sustainability-and-recycling/urban-sustainability-mobility/urban-forestry-initiatives

Imperial County Community Emissions Reduction Program: Project Plan Urban Greening Program for The El Centro-Heber-Calexico Corridor. Prepared for the El Centro-Hebe-Calexico AB 617 Community Steering Committee, by Ramboll US Consulting, Inc. Los Angeles, CA. February 2021. https://apcd.imperialcounty.org/wp-content/uploads/2021/03/Urban-Greening-Project-Plan.pdf.

City of Phoenix Tree and Shade Master Plan. 2010. https://www.phoenix.gov/parkssite/Documents/PKS_Forestry/PKS_Forestry_Tree_and_Shade_Master_Plan.pdf

Cathedral City council plants tree at Cathedral City Elementary School for Clean Air Day https://www.desertsun.com/story/news/local/neighbors/2019/10/17/cathedral-city-council-plants-tree-elementary-school-clean-air-day/4015447002/

Section 4: Advanced Planning Sample Outline

Year One -- Summer through early Fall	Year Two -- Late Winter through early spring	Year Two and Beyond
Determine your objectives for planting trees	Receive nursery invoice, confirmation of the order	Inspect your trees regularly.
Inspect your planting site	Arrange for equipment, volunteer help, or contract tree planters	Control vegetation and insect or disease problems promptly.
Prepare a planting plan	Receive your seedlings. Transport and handle with care!	
Prepare your site for planting	Store your trees properly on-site and plant your trees within two days	
Control competing vegetation	Monitor your seedlings and control vegetation if required	
Improve drainage if necessary		
Order your trees from MNR or a private nursery		

Appendix III: References

Appendix III: References

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PLANT NATIVE

Your Guide To Growing Native Plant Species Of the Coachella Valley

PRODUCED BY

Friends of the **Desert Mountains**

DESERTMOUNTAINS.ORG

Thank you for planting native plants, Coachella Valley.

People often think that the idea of land conservation and protecting native species and habitat is a monumental task. Planting native is an excellent way to start. It's better for the environment, saves water, encourages local flora and fauna to flourish ... and reduces invasive species.

We thank you for taking this small step on the journey to caring for our desert lands.

CONNECT TO THE LAND WITH FRIENDS!

Friends of the Desert Mountains
51-500 Highway 74
Palm Desert, CA 92260
760-568-9918
friends@desertmountains.org
DesertMountains.org

Friends of the Desert Mountains

Thank You to Our Partners!

This project is funded by the Coachella Valley Mountains Conservancy's Climate, Resilience and Community Access Grant Program, administered by the Coachella Valley Mountains Conservancy, a state agency within the California Natural Resources Agency.

CALIFORNIA
NATIVE PLANT
SOCIETY

Friends of the
Desert Mountains

DESERTMOUNTAINS.ORG
@FRIENDSOFTHEDESERT

Introduction to Native Plants

Native plants are plants that originated in a certain region and have evolved over many generations to survive in their local environment.

This planting guide contains information about native plants found throughout the Coachella Valley. These plants have adapted to their environment over thousands of years in order to survive our hot and dry desert conditions.

Why should we plant native species?

Planting native plants can be a very effective and affordable way to help our local species thrive while they face the challenges of climate change and human development.

We hope this guide helps you learn more about Coachella Valley native plants so that you can join the movement to restore and protect our native species while helping to improve our environment and take care of our natural resources.

Friends of the Desert Mountains

DESERTMOUNTAINS.ORG
@FRIENDSOFTHEDESERT

Languages

Plants in this guide are listed with 4 names:

English in Large Bold
Scientific name in italics
Spanish name in small letters
Cahuilla name in small bold

Example

HONEY MESQUITE

Honey Mesquite
Neltuma glandulosa
Mesquite Dulce
ily

SPANISH TRANSLATION PROVIDED BY EDELI REYES, TRANSLATION SPECIALIST FOR FRIENDS OF THE DESERT MOUNTAINS

CAHUILLA TRANSLATION PROVIDED BY SIENNA THOMAS, BOARD MEMBER AT FRIENDS OF THE DESERT MOUNTAINS

Symbols

Plants in this guide are also listed with symbols related to their benefits and traits

HABITAT

Bee Habitat 

Butterfly Habitat 

Hummingbird Habitat 

Bird Habitat 

SUNLIGHT

Full Sun 

Part Shade 

CONSUMPTION/TOOLS

Food Source 

Medicinal 

Toxic** 

Tools 

WATER USAGE

Low Water Use 

Moderate Water Use 

High Water Use 

**EVERY PERSON/PET REACTS DIFFERENTLY TO DIFFERENT PLANTS. ALWAYS USE CARE WHEN HANDLING NEW PLANTS THAT YOUR BODY HAS NOT BEEN EXPOSED TO IN THE PAST

Benefits of Native Planting

1 Water Conservation

MANY OF OUR NATIVE PLANTS HAVE EVOLVED OVER THOUSANDS OF YEARS TO LIVE OFF OF MINIMAL WATER SUPPLIES IN THE DESERT.

USING THESE PLANTS IN OUR LANDSCAPING CAN HELP US DRASTICALLY REDUCE THE WATER USED IN OUR NEIGHBORHOODS.

2 Biodiversity

NATIVE PLANTS WILL HELP PROVIDE FOOD AND HABITAT FOR THE NATIVE WILDLIFE THAT THEY HAVE EVOLVED WITH FOR MANY GENERATIONS.

THESE HABITAT RELATIONSHIPS ARE IMPORTANT TO CONSERVE IN ORDER TO HAVE A HEALTHY ECOLOGY.

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Benefits of Native Planting

3

Urban Greening/ Climate Resilience

USING LARGE NATIVE TREES AND SHRUBS IN OUR NEIGHBORHOODS CAN BE AN INEXPENSIVE WAY OF BUILDING OUT THE GREEN INFRASTRUCTURE WE NEED TO BE CLIMATE RESILIENT.

NATIVE TREES AND SHRUBS CAN THRIVE WITH MINIMAL WATER AND CREATE SHADE THAT HAS COOLING EFFECTS ON OUR YARDS AND PAVEMENT.

4

Food Sources

MANY OF OUR NATIVE PLANTS HAVE BEEN A FOOD SOURCE FOR THOUSANDS OF YEARS TO THE LOCAL INDIGENOUS POPULATION, THE CAHUILLA.

SOME NATIVE FOODS IN THE COACHELLA VALLEY INCLUDE PRICKLY PEAR (FRUIT AND CACTUS ARE EDIBLE), PALO VERDE BEANS, AND MESQUITE FLOWER.

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Benefits of Native Planting

5 Medicine

THE LOCAL CAHUILLA TRIBES HAVE ALSO USED MANY OF OUR NATIVE PLANTS AS MEDICINE FOR MANY GENERATIONS

ONE PLANT THAT IS WIDELY USED IN BOTH THE CAHUILLA COMMUNITY AS WELL AS THE MEXICAN COMMUNITY IS THE CREOSOTE BUSH OR "LA GOBERNADORA"

6 Tools and Resources

THE CAHUILLA TRIBES HAVE MANY USES FOR THE DIFFERENT STEMS AND FIBERS OF OUR NATIVE PLANTS

MANY STRUCTURES WERE MADE OUT OF PALM FRONDS FROM THE CALIFORNIA FAN PALM, OR "MAUL" IN CAHUILLA. THEY ALSO USED THE FIBERS FROM THE YUCCA PLANT TO MAKE CLOTHING AND BASKETS

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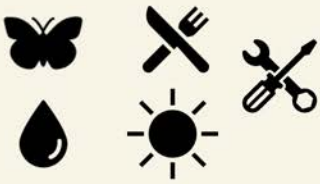
Trees

DESERT IRONWOOD



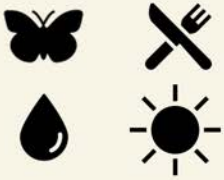
Desert Ironwood

Olneya tesota

Palo Fierro

The Desert Ironwood is a rare, long-lived tree native to the Sonoran Desert, with some trees reaching around 800 years old. It serves as a nurse plant, providing shade for other flora and fauna. When incorporating a Desert Ironwood into your landscape, avoid overwatering and limit pruning to no more than 20% during the dormant season to prevent tree death.

BLUE PALO VERDE



Blue Palo Verde

Parkinsonia florida

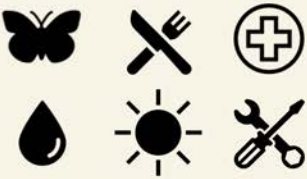
Palo Verde Azul

u'uwet/ankichem

The blue palo verde supports various insects, like native bees, and provides nesting for desert birds. Its name reflects its bluish-green bark, which allows for low-level photosynthesis, enabling the tree to drop leaves during dry seasons to conserve water. In landscaping, avoid overwatering, as it can cause root rot and reduce lifespan; infrequent deep watering every 3 to 4 weeks during dry periods is recommended.

Trees

HONEY MESQUITE

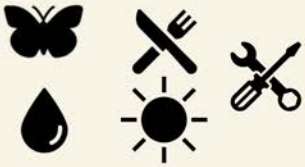


Honey Mesquite

Neltuma glandulosa
(Formerly Prosopis glandulosa)
Mesquite Dulce
ily

The honey mesquite is a rapidly growing tree that can reach heights of up to 50 feet, boasting a taproot that extends up to 160 feet underground to access water. This tree produces seed pods that are not only important for wildlife, but also hold significant value for indigenous tribes. To enhance wildlife habitat, consider allowing the tree to develop a thicket by reducing your pruning efforts.

SCREWBEAN MESQUITE



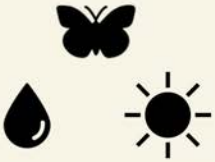
Screwbean Mesquite

Strombocarpa pubescens
(Formerly Prosopis pubescens)
Tornillo
qwinyal

This species exhibits numerous similarities in flower type, color, and overall tree appearance with the honey mesquite. However, its seed pods are distinctly different, featuring tightly twisted shapes. Like other legumes, this tree modifies the soil composition beneath its canopy, enriching it with essential nutrients, including nitrogen.

Trees

SMOKE TREE



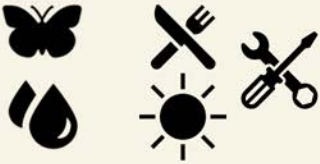
Smoke Tree

Psorodendron spinosum

Palo de Cenizo

The common name of this tree is derived from its unique appearance. From afar, it resembles a plume of smoke due to its shape and grayish hue. This species is vital for native bees and other pollinators, making it a fantastic accent in your garden or landscape. If you're looking to add summer-blooming plants to your garden, this is the perfect choice, as it produces a stunning display of purple flowers.

DESERT WILLOW



Desert Willow

Chilopsis linearis

Mimbre

qaankish

The Desert Willow resembles true willows in leaf shape but is not a true willow. Numerous cultivars exhibit various flower colors, leaf sizes, and seed pod quantities. It is visited by various pollinators from hummingbirds to butterflies while also supporting other wildlife. It is winter deciduous, so there's no need to be concerned if it seems to be lifeless as temperatures drop.

Trees

CALIFORNIA FAN PALM

California Fan Palm

Washingtonia filifera

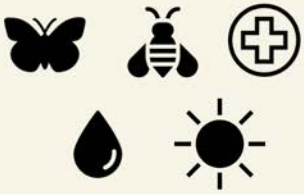
Palma Abanico

maul

The California fan palm is the only palm species native to the Western United States. Once established, it doesn't need much water. Its dead leaves do not drop; instead, they droop down, creating a protective skirt around the trunk while also offering shelter for wildlife.

Shrubs

CREOSOTE BUSH



Creosote Bush

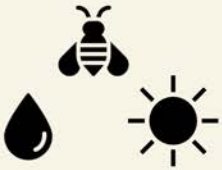
Larrea tridentata

Gobernadora

atukul

Creosote is a prominent shrub found throughout our desert region and other deserts in North America, including the Mojave. It supports a diverse range of pollinators, hosting over 120 native bee species, many of which are specialized in creosote pollen. This makes it an essential addition to any native plant garden.

DESERT LAVENDER



Desert Lavender

Condea emoryi

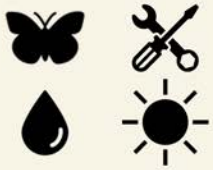
Salvia del Desierto

nishxily

The white color of the plant reflects sunlight, aiding in temperature regulation. Its hairy leaves capture moisture, minimizing water loss. Being part of the mint family, it emits a delightful fragrance. With its tall, upright growth habit, it can serve as an informal hedge for privacy while requiring less upkeep compared to a traditional hedge.

Shrubs

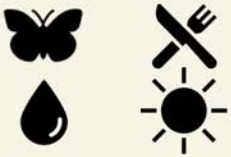
JOJOBA



Jojoba
Simmondsia chinensis
Jojoba
qawnaxal

The jojoba plant is dioecious, meaning that male and female flowers grow on separate plants. Female flowers will only produce seeds if there is a nearby male flower plant. Additionally, jojoba can be utilized to create attractive hedges around your home.

OCOTILLO



Ocotillo
Fouquieria splendens
Ocotillo
utush

The Ocotillo boasts a distinctive appearance that makes it an excellent choice as an accent plant. However, due to its thorns, it's best to position it in low-traffic areas. Be cautious with watering, as overwatering can be detrimental to its health, and pruning is not advisable for this species.

Shrubs

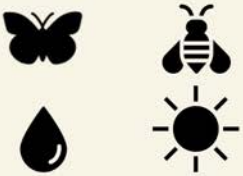
CHUPAROSA

Chuparosa

Justicia californica
Chuparosa
pisily

The name "chuparosa" translates to "hummingbird" due to its vibrant red tubular flowers that draw these delightful creatures in. If maintaining feeders seems too demanding, this native plant is an excellent choice for luring hummingbirds to your garden.

BRITTLEBUSH



Brittlebush

Encelia farinosa
Flor de Rocío
pa'akal

Brittle bush is a vital addition to native plant gardens. This small, rounded shrub can grow up to 5 feet tall and features grayish leaves along with vibrant yellow composite flowerheads which attract a variety of pollinators and wildlife that depend on its seeds. It requires minimal maintenance and resources. To achieve a lush appearance, simply provide supplemental water once a month.

Shrubs

CHEESEBUSH

Cheesebush

Ambrosia salsola

Jecota

The cheesebush is a shrub that typically grows 4-5ft tall. Its foliage is known for having a cheese-like aroma, which is how it got its common name. The plant produces small cream-colored flowers that bloom in clusters and is also beneficial for native pollinators.

RUSH MILKWEED

Rush Milkweed

Asclepias subulata

Candelilla Bronca

kivat or kiyal

Rush milkweed belongs to the milkweed family and serves as a crucial host plant for the endangered monarch butterfly in desert environments. Adult monarchs exclusively lay their eggs on milkweed, while the caterpillars feed on its leaves. The milkweed contains cardenolides, which are consumed by the larvae, making the butterflies toxic and protecting them from predators.

Shrubs

CALIFORNIA BUCKWHEAT

California Buckwheat

Eriogonum fasciculatum

Flor de borrego

hulaqal

California buckwheat is prevalent throughout California, including our desert region. The evolution of this flower adds visual interest to your garden throughout the seasons. The blooms begin as white and gradually transform into a striking reddish-copper hue. Additionally, it provides support to various native insect and bird species.

CATCLAW ACACIA

Catclaw Acacia

Senegalia greggii

Tepame/ Uña de gato

sichingily

Catclaw is a hardy and sizable shrub, typically ranging from 10 to 15 feet in height, distinguished by its hooked thorns, which inspire its common name. Due to the thorns, it is best planted in areas with low foot traffic. This shrub produces clusters of cream-yellow flowers that develop into bean pods resembling those of the honey mesquite.

Shrubs

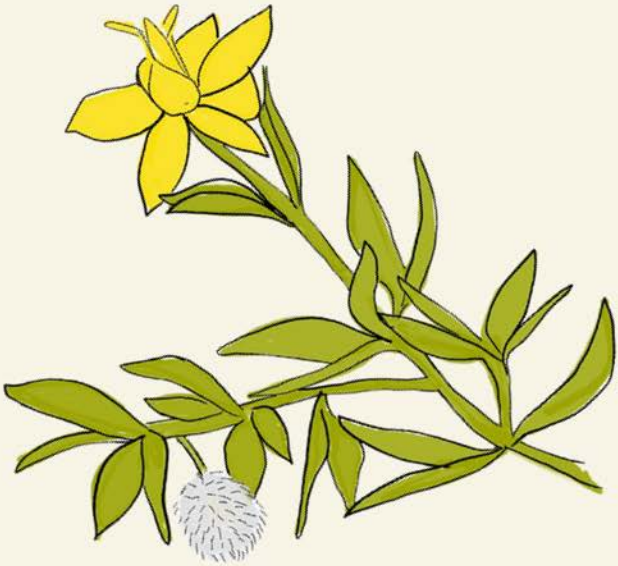
SWEETBUSH

Sweetbush

Bebbia juncea

Palo dulce

Sweetbush is a smaller shrub that can grow up to 5 feet tall, typically featuring a few narrow leaves or none. It produces vibrant yellow discoid flowers that bloom during the spring and summer, attracting not only insect pollinators but also delighting the chuckwalla lizard.



Succulents

SILVER CHOLLA

Silver Cholla

Clylindropuntia echinocarpa

Choya Plateada

The silver cholla features 1 to 2 inch long spines that provide a shield for birds like the cactus wren, which frequently nest among the chollas, ensuring protection from predators. Additionally, cholla cactus species support pollinators while contributing a unique aesthetic to your garden.

BARREL CACTUS

Barrel Cactus

Ferocactus cylindraceus

Biznaga barril de Baja California

kupash

This cylindrical cactus can grow up to 8 feet tall and adds a striking accent to any garden with its vibrant red spines. It is a slow-growing species featuring a floral crown that blooms in early summer. To thrive, it requires well-draining soil, as poor drainage can lead to root rot.

Succulents

BEAVERTAIL CACTUS

PRICKLY PEAR CACTUS

Beavertail Prickly Pear Cactus

Opuntia basilaris var basilaris
Nopal Del Castor
manal

The beavertail cactus is an excellent choice for pot cultivation, as it typically remains low in height but can spread up to 5 feet wide. Its pads resemble a beaver's tail, which is how it earned its common name. While the beavertail cactus is spineless, each pad features dense clusters of glochids that may cause irritation.

Desert Prickly Pear Cactus

Opuntia phaeacantha
Nopal de Chihuahua
qexe'yily

The desert prickly pear features flat green pads adorned with spines that measure about 1 inch in length. Its flowers display a vibrant range of colors, including orange, pink, yellow, and red, blooming during the spring and summer months. This plant produces edible, red, fleshy fruit that not only adds visual appeal to your garden throughout the seasons but also offers resources for local wildlife.

Grasses

DEER GRASS

Deer Grass

Muhlenbergia rigens

Liebdrilla de venado

suul

Deergrass is a rapidly growing perennial bunchgrass that can reach heights of up to 4 feet, featuring tall spikes adorned with small yellow flowers. It thrives in a variety of soil types, from sandy to clay, and prefers full sun or partial shade. Additionally, it offers food and shelter for nesting or denning animals.

BIG GALLETA

Big Galleta

Pleuraphis rigida

Zacate galleta gigante

Big Galleta is a clumping bunchgrass that usually reaches a height of 3 feet and a width of 4 feet. Its flowering period varies by region, featuring small purple inflorescences. This grass primarily reproduces through rhizomes and can be cut back to the ground. Ecologically, it serves as a nurse plant, offering food and habitat for wildlife, including bighorn sheep.

Perennials

DESERT MARIGOLD

Desert Marigold

Baileya multiradiata

Hierba Amarilla

This small perennial can reach a height of up to 2 feet. It features bright, daisy-like flowers alongside grayish leaves. This plant thrives in containers, making it ideal for a patio garden with limited space. While it has a lifespan of a few years, it is capable of reseeding itself effortlessly.

APRICOT MALLOW

Apricot Mallow

Sphaeralcea ambigua

Malva del Desierto

Also known as the desert globe mallow, this perennial plant typically reaches an average height of 3 feet. While its most common color is a vibrant orange, it can also bloom in shades of lavender, red, or pink. This variety is another excellent choice for patio gardens, especially in spaces with limited room.

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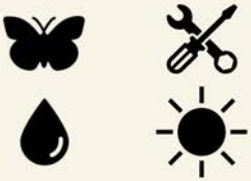
Perennials

DESERT TOBACCO

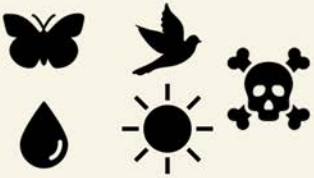


Desert Tobacco

Nicotiana obtusifolia
Tabaco de Coyote
pivat

Desert tobacco may be less frequently seen in landscaping, but it is a stunning perennial that can reach heights of up to 3 feet, showcasing small, funnel-shaped cream-colored flowers. This plant is usually found growing between rocks and boulders in the wild.

DESERT MILKWEED



Desert Milkweed

Asclepias erosa
Algodoncillo del Desierto
kivat or kiyal

If you're short on space for a shrub but want to provide a habitat for monarch and queen caterpillars, consider the desert milkweed. This herbaceous perennial usually reaches a height of just 4 feet. Although it will die back as an annual herb, its roots will remain alive, enabling the plant to regrow in the following season.

Invasive Species

Invasive species can spread widely into our natural lands and take up resources from our native plant species. They can also increase the risk of wildfire due to their fast-growing and fast-spreading nature.

Avoid using these plants in your garden to prevent them from spreading into our deserts and mountains!

FOUNTAIN GRASS

Fountain Grass

Cenchrus setaceus

Fountain grass has very light seeds that float long distances in the wind, and they thrive in our desert environments. These plants can be hard to remove and are now easily found throughout our surrounding mountains.

SALT CEDAR/ TAMARISK

Salt Cedar/Tamarisk

Tamarix ramosissima

Salt Cedar, of the Tamarisk family, was often used in the past to build large barriers against wind and noise. Unfortunately, their seeds have spread all throughout our region. These plants can be very hard to manage with strong roots that can be hard to remove completely. They are very heavy water users pulling up to 200 gallons of water every day per plant from our local aquifer.

Invasive Species

Smallflower Tamarisk
Tamarix parviflora

Spanish Broom
Spartium junceum

Himalayan Blackberry
Rubus armeniacus

Parrot's Feather
Myriophyllum aquaticum

Purple Loosestrife
Lythrum salicaria

Scotch Broom (Common Broom)
Cytisus scoparius

Pampas Grass
Cortaderia jubata

Giant Reed
Arundo donax

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Planting Techniques Provided by the Mojave Desert Land Trust

The Mojave Desert Land Trust acquires and permanently protects ecologically significant land throughout the California desert. We focus on parcels within national parks and preserves, wilderness areas, areas of critical environmental concern, and wildlife corridors. MDLT has conveyed more tracts of land to the National Park system nationwide than any other non-profit since 2006.

MDLT's plant conservation program includes a native plant nursery, a conservation seed bank, and a demonstration garden. We grow native plants for desert restoration projects and to empower locals to plant native plants at home. The Mojave Desert Seed Bank serves as an insurance policy for the desert's future.

For more information visit MDLT.org

How to Take Care of Native Plants in the Coachella Valley

When to Plant

The best time to plant perennials, shrubs and trees is during the fall and early winter.

This gives plants time to establish a healthy root system and build energy for the growing season.

Annuals are best sown or planted from October to late November.

How to Take Care of Native Plants in the Coachella Valley

Choosing Your Soil

Most native plants perform better without fertilizer or actually respond negatively to fertilizer.

Desert native plants are adapted to soils that are low in nutrients, so adding extra nitrogen in the form of compost or fertilizer is not necessary.

In addition, nitrogen promotes foliar growth, and may actually delay root establishment.

Mulching with inorganic materials like rocks or gravel is recommended instead of organic materials like bark. Mulching in general can be helpful in retaining moisture, reducing erosion, and controlling weeds.

How to Take Care of Native Plants in the Coachella Valley

Planting Technique

Start by replacing the loosened backfill you removed while digging the hole.

Gently tamp it down so the plant is stable. You can add more water as you fill the hole or afterwards. Avoid burying the collar of the plant.

Build a berm with the extra soil around the outer dimensions of the hole to retain water.

How to Take Care of Native Plants in the Coachella Valley

Planting Technique

Water the root ball and the planting area thoroughly after planting. Remove any nursery stakes, if present. If necessary, re-stake the plant loosely.

Avoid pruning at this time. A "nurse rock" should be placed on the south side of the plant to maintain soil moisture, but keep it a few inches away from the base of the plant.

Caging small plants with hardware cloth is recommended to protect them from hungry wildlife.

How to Take Care of Native Plants in the Coachella Valley

Watering

Many native plants can survive with minimal supplemental water once they are established (after 2-5 years).

New plants, however, need to be watered more frequently than established plants.

Always water deeply. Light, frequent irrigations create shallow, weak root systems.

Deep, less frequent irrigations encourage deep strong root systems that can tolerate longer periods of drought.

How to Take Care of Native Plants in the Coachella Valley

Basic Watering Schedule for new plants

Weeks 1-2: Water every 1-2 days in summer and 3-4 days fall through spring

Weeks 3-4: Water every 3-4 days in summer and 6-7 days fall through spring

Weeks 5-6: Water every 4-6 days in summer and 7-10 days fall through spring

Weeks 7-8: Water every 7 days in summer and every 10-14 days fall through spring

After week 8: Gradually extend the time between irrigation until the plants are established (2-5 years)

How to Take Care of Native Plants in the Coachella Valley

Basic Watering Schedule for new plants

After the first summer there is rarely a need to irrigate more than once a week.

Once established after the first couple of years, plants with the exception of annuals can be watered once every 1-3 weeks in summer and 2-4 weeks fall through spring.

***Keep in mind, this is just a suggestive guide. One must always pay attention to the plant and the weather.

How to Take Care of Native Plants in the Coachella Valley

Staking and Pruning

When possible, remove stakes at the time of planting. If stakes are needed, make sure they are loose and allow the plant to sway without falling over.

This will allow the trunk of the plant to become stronger in response to the wind.

Never allow ties to become tight around the trunk. Remove or adjust stakes after one year.

Pruning will be dependent of the individual plant species. It is best to prune trees while they are still young, but wait until after the first year. Leave growth on the lower trunk for up to two years to allow the tree to grow strong.

How to Take Care of Native Plants in the Coachella Valley

Typical signs of plant stress: Underwatering

- Soil in the lower portion of the root ball is dry
- Older leaves turn yellow/brown and drop off
- Leaves are wilted or drooping
- Leaves curl upward or inward
- Stems or branches die back

How to Take Care of Native Plants in the Coachella Valley

Typical signs of plant stress: Overwatering

- Soil is constantly damp, especially around the base of the main stem
- Leaves turn light green, yellow or become dull
- Young shoots are wilted or drooping
- Leaves are green yet brittle, or wilted but not dropping
- Algae and/or mushrooms are on or around plants

How to Take Care of Native Plants in the Coachella Valley

What If I Can't Plant My New Plant Right Away

We recommend that you plant your new plant in the ground because it will be easier to maintain. Yet sometimes, that is not always possible right away.

If you will keep your plant in its container, please place it somewhere that gets plenty of indirect sunlight, but not direct full sun.

You will need to pay attention to the soil moisture and water when the soil becomes dry. During this phase, it is advantageous to use a cage to protect the plant from hungry animals.

Local Nurseries with Native Plants

List provided by California Native Plant Society Riverside - San Bernardino Chapter

- Bob Williams Nursey in Indio
- Cactus Mart & Morongo Hardware in Morongo Valley
- Desert Strawhouse Native Plant Nursery in Sky Valley
- Mojave Desert Land Trust Native Plant Nursery in Joshua Tree
- GDNC Cactus & Desert Plant Nursery in Desert Hot Springs
- Green Desert Nursey in Indio
- Moller's Garden Center, Inc in Palm Desert
- Mariscal Cactus & Succulents in Desert Hot Springs
- Moon Valley Nurseries in Coachella
- Macias Nursey INC. in Thousand Palms and Mecca

Learn More

Visit the following websites and organizations to learn more about native planting!

- calscape.org
- calflora.org
- Mojave Desert Land Trust - mdlt.org
- deserthorticulturalsociety.org
- Lush & Efficient - Drought tolerant gardening publication by Coachella Valley Water District
- California Native Plant Society San Bernardino & Riverside Counties Chapters

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→ desertmountains.org ←

ABOUT FRIENDS

AS FRIENDS OF THE DESERT MOUNTAINS, WE ARE DEDICATED TO BUILDING A COMMUNITY OF SUPPORT TO HELP PRESERVE THE UNIQUE WILDLIFE AND SCENIC BEAUTY OF THE COACHELLA VALLEY AND OUR DESERT MOUNTAINS. WE ACQUIRE AND PRESERVE WILDLANDS, PROMOTE STEWARDSHIP OF TRAILS, CONDUCT EDUCATIONAL PROGRAMS, AND SUPPORT ECOLOGICAL RESEARCH.

FRIENDS OF THE DESERT MOUNTAINS WORKS WITH BIOLOGISTS, CONSERVATIONISTS, AND GOVERNMENT AGENCIES TO IDENTIFY KEY LANDS FOR PROTECTION. WE SELECT LAND FOR ITS SCENIC, BIOLOGICAL, RECREATIONAL, OR CULTURAL SIGNIFICANCE, AND THEN OFFER TO PURCHASE IT FROM WILLING SELLERS AT FAIR MARKET VALUE. THROUGH THESE KEY ACQUISITIONS, WE GIVE PERMANENT PROTECTION TO THE BEAUTY, CHARACTER, AND DIVERSITY OF THE COACHELLA VALLEY.

Friends of the Desert Mountains

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ABOUT FRIENDS

FRIENDS OF THE DESERT MOUNTAINS HAS WORKED IN LAND CONSERVATION SINCE 1987. WE UNDERSTAND THAT, WITHOUT THE SUPPORT OF FUTURE GENERATIONS, OUR PRESERVATION EFFORTS MAY BE IN VAIN. FOR THIS REASON, WE HAVE MADE IT OUR MISSION TO REACH OUT TO TOMORROW'S LEADERS.

WE STEWARD THE LAND, SUPPORT THE NATIONAL MONUMENT VISITOR CENTER, AND HELP TO EDUCATE OUR COMMUNITY. WE GO INTO THE FIELD WITH STUDENTS, LEAD HIKES, AND SHARE CLASSES FOR ALL AGES ON ENVIRONMENTAL EDUCATION. BY DOING SO, WE HOPE TO REVEAL THE WONDERS OF THE FRAGILE DESERT AND MOUNTAINS WE CALL HOME AND INSTILL AN ENVIRONMENTAL AWARENESS THAT WILL LAST A LIFETIME.

MY NOTES ABOUT MY PLANTS!

MY NOTES ABOUT MY PLANTS!

MY NOTES ABOUT MY PLANTS!

Friends of the
Desert Mountains

VISIT FRIENDS AT THE SANTA ROSA AND SAN JACINTO MOUNTAINS NATIONAL MONUMENT VISITOR CENTER

51-500 HIGHWAY 74
PALM DESERT
CALIFORNIA

DESERTMOUNTAINS.ORG
760.568.9918

ITEM 8C

Coachella Valley Association of Governments
Energy & Sustainability Committee
November 13, 2025

STAFF REPORT

Subject: **Local Government Waste Tire Amnesty Grant - TA7 Annual Report**

Contact: Eman Nazir, Management Analyst (enazir@cvag.org)

Recommendation: Information

Background: CVAG, in partnership with its member jurisdictions has long supported state-funded recycling programs for waste tires and used oil. Funded by the California Department of Resources Recycling and Recovery (CalRecycle), the Local Government Waste Tire Amnesty Grant provides residents free, convenient disposal options, reducing illegal dumping, preventing contamination, and raising public awareness.

On April 15, 2024, CVAG received a Notice to Proceed for the TA7 Grant Cycle, which ran through October 31, 2025, with $50,000 in funding. Through its consultant, the Southern California Mountains Foundation (SCMF), CVAG coordinated nine community tire amnesty events across the Coachella Valley. Outreach efforts included bilingual communication and collaboration with local tire shops to support education and promote participation. These efforts collected and recycled 1,597 tires—about 0.8 tons.

Events were held at multiple locations. There were two held in Desert Hot Springs, three held in Indio, and one each in Blythe, Coachella, Thermal, and Thousand Palms

At the close of each cycle, CVAG is required to submit an Annual Report to CalRecycle. The 2025 Annual Report was submitted on October 15, 2025, detailing program activities, outcomes, expenditures, and recommendations.

Looking ahead, CVAG has recently released a Request for Proposals (RFP) to select a consultant for the TA8 Waste Tire Amnesty Program, which is anticipated to begin in Spring 2026. A recommended contract will come to CVAG's committees for consideration in early 2026.

Fiscal Analysis: There is no cost to CVAG for this informational update.

Attachments:

1. TA7 – Waste Tire Amnesty Grant Program Narrative Annual Report
2. TA7 – Waste Tire Amnesty Grant Program Final Report Summary

Southern California Mountains Foundation (SCMF)

Waste Tire Recycling Program

In Partnership with the Coachella Valley Association of Governments

Report Performance Period
6/24/2024 - 10/1/2025

Project Summary:

The Southern California Mountains Foundation's Urban Conservation Corps (SCMF-UCC), in collaboration with the Coachella Valley Association of Governments (CVAG), coordinated and executed Waste Tire Recycling Amnesty Events, marketed the events throughout the Coachella Valley, provided program monitoring and tracking for all waste tire recycling events, and provided meeting and reporting support as requested.

Waste Tire Recycling Program Accomplishments:

SCMF-UCC was able to coordinate and complete 9 Community Tire Amnesty Events between June 24, 2024, to September 30, 2025. We invited the public to bring their waste tires for proper disposal at these events. We contacted approximately 10 local tire shops to educate them on properly disposing of waste tires and to assist in advertising our amnesty events and to encourage their customers to properly dispose of tires and attend our amnesty events. We created flyers both in English and Spanish to distribute in the communities where each event was to be held. During these events, UCCIE was able to collect and properly recycle **1,597 tires**, totaling **0.7985 tons**.

The photos below are from our Tire Amnesty event in Thermal at the College of the Desert's Mecca Campus. The address for the location is 61120 Buchanan St, Thermal, CA 92274. This event went very well, and we collected 354 tires. The staff at College of the Desert were very pleased with this event, and they are looking forward to coordinating future events with the UCC.

Other Tire amnesty events in the Coachella Valley.

On 8/24/25, we had a tire amnesty event at Della S. Lindley Elementary School in Thousand Palms; the address is 31495 Robert Rd, Thousand Palms, CA 92276, and we collected 16 tires from the community.

On 9/28/24, we had a tire amnesty event at Rancho Las Flores Park and Event Venue in Coachella; the address is 48400 Van Buren St, Coachella, CA 92236, and we collected 526 tires from the community.

On 11/30/24, we had a tire amnesty event at Sky Valley Community Center in Sky Valley; the address is 20905 Hot Springs Rd, CA 92241, and we collected 17 tires from the community.

On 12/14/24, we had a tire amnesty event at Miller Community Park in Blythe; the address is 14th Ave. & S Lovekin Blvd, Blythe, CA 92225, and we collected 545 tires from the community.

On 1/25/25, we had a tire amnesty event at Sky Valley Community Center in Sky Valley; the address is 20906 Hot Springs Rd, CA, and we collected 5 tires from the community.

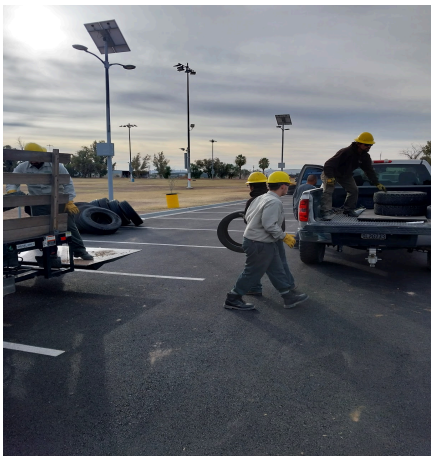
On 5/17/25, we had a tire amnesty event at the Assembly of God Church in Indio; the address is 46923 Calhoun St, Indio, CA 92201, and we collected 18 tires from the community.

On 7/19/25, we had a tire amnesty event at the Assembly of God Church in Indio; the address is 46923 Calhoun St, Indio, CA 92201, and we collected 110 tires from the community.

On 8/24/25, we had a tire amnesty event at College of the Desert in Thermal; the address is 61120 Buchanan St., Thermal, CA 92274, and we collected 354 tires from the community.

On 8/14/25, we had a tire amnesty event at our SCMF Urban Conservation Corps location in Indio. The address is 82579 Fleming Way, Unit C, Indio, CA 92201, and we collected 6 tires from the community.

Below are some pictures of the events, and representative flyers for the events.




*Maximo 9 llantas por persona
ACCEPTED ITEMS
• Televisores y monitores CRT
• Pantallas planas
• Televisores de proyección trasera
• Laptops
• Computadoras de escritorio y CPUs
• Teléfonos celulares y smartphones
• Escáneres e impresoras
• Cámaras digitales y videograbadoras
• Sumas automáticas y calculadoras
• Equipos de red y servidores
• Equipos de sonido
• Radios, reproductores de casetes y CD
• Equipos telefónicos y radios de comunicación (walkie-talkies)
• Proyectores
EVENTO DE AMNISTÍA PARA RESIDUOS ELECTRÓNICOS Y LLANTAS
Organizado por Urban Conservation Corps
Vengan a dejar sus residuos electrónico y llantas GRATIS sin cobro Urban Conservation Corps oficina
NOT ACCEPTED
• Focos o bombillas de cualquier tipo
• "Basura tecnológica" como CDs, VHS y DVDs
• Baterías (excepto las instaladas en laptops o celulares)
• Electrodomésticos grandes (como refrigeradores o estufas)
• Aires acondicionados
• Muebles de cualquier tipo
UBICACIÓN
82-579 Fleming Way
Suite C, Indio, CA
92201
CONTÁCTENOS
cmitchell@mountainsfoundation.org
Sabado - El 13th De Septiembre De 2025
Horario: 7:00am-12:00pm
ECOLÓGICO
CalRecycle
CVAG


*Maximum 9 Tires per Person! Without permit!
ACCEPTED ITEMS
• TV and CRT monitors
• Flat Screens
• Rear Projection TVs
• Laptops
• PC and CPUs
• Cellphones, Smartphones
• Scanners and Printers
• Digital Cameras and Video Cameras
• Adding Machines and Calculators
• Networking/Server Equipment
• Stereo Equipment
• Radios,Tape and CD players
• Telephonic Equipment and Walkie-Talkies
• Projectors
E-WASTE & TIRE AMNESTY EVENT
Hosted by the Urban Conservation Corps.
Come and drop off your used Tires and E-waste for FREE* at Urban Conservation Corps Office
NOT ACCEPTED
• Lightbulbs of any kind
• Techno trash such as CDs, VHS and DVDs
• Batteries (except laptop and cell phone batteries installed in the device
• Large appliances of any kind (refrigerators, stoves)
• Air conditioners
• Furniture of any kind
Location
82-579 Fleming Way
Suite C, Indio, CA
92201
Contact Us
cmitchell@mountainsfoundation.org
Saturday - September 13th, 2025
Time: 7:00am-12:00pm
Eco-Friendly Disposal
CalRecycle
CVAG

State Of California
CalRecycle 754 (Rev. 9/2024)

Department of Resources Recycling and Recovery
Division of Circular Economy/Firm/Financial Resources Section A

Local Government Waste Tire Amnesty Grant Program
Payment Request Checklist and Final Report

This is a "dual-purpose" form:

- Checklist (page 1) – providing payment request guidance
- Final Report (page 2) – required for **final** payment request

Instructions: Upload completed form to the GMS "Reports Tab".

Final Payment Request Checklist

Date: 10/9/2025
Grantee Name: Coachella Valley Association of Governments
Grant Number Assigned by CalRecycle: TA7-23-0038

Notice to Proceed date: 4/15/2024 (costs incurred prior to this date are ineligible)

Grant Payment Request (General Grant Forms - CalRecycle 87)

☑ Box 6 check "Final."
☑ Box 7 is the total amount of expenditures being claimed.
☑ Box 14 contains e-signature (digital) of person authorized in Resolution or Letter of Designation.

Expenditure Itemization Summary (Tire Amnesty Grant Forms - CalRecycle 755)
itemize all expenses since the last payment request.

☑ Contains sufficient detail to match each entry to an invoice.
☑ The form should reflect the same line-items on the 'Budget" form.

Supporting Documentation Use highlighting and/or notes to indicate applicable information on each document for clarity.

☑ Personnel Expenditure Summary, (General Grant Forms - CalRecycle 165 or similar) if personnel hours claimed.
☑ Cost and Payment Documentation is needed for all expenditures; reference the "Procedures and Requirements resource document for details. Each line-item listed on the CalRecycle 755 will require documentation showing the cost and "proof" that the item has been paid. (Invoices, Receipts or Copies of paid checks are common examples)
☑ Copies of all public education/advertising artwork (not previously submitted for approval) funded by the Grant.
☑ Waste Tire manifests, if applicable.

Reliable Contractor Form (General Grant Forms - CalRecycle 168)

☑ Reliable Contractor Declaration – Ensure this form has been completed for all contractors and submitted in GMS – Reports tab.

State Of California
CalRecycle 754 (Rev. 9/2024)

Department of Resources Recycling and Recovery
Division of Circular Economy/Firm/Financial Resources Section A

Final Report

☑ Grantee agrees with the following disclaimer:

> *"The statements and conclusions of this report are those of the Grantee and not necessarily those of the Department of Resources Recycling and Recovery, its employees, or the State of California. The State makes no warranty, express or implied, and assumes no liability for the information contained in the succeeding text."*

This form should reflect work since receipt of the Notice to Proceed to the end of the grant term.

Total number of tires or passenger tire equivalent" (PTE) collected during the grant term:

1597

Provide information regarding the success of the grant program in reducing the number of illegally disposed waste tires.

This program encouraged members of the public primarily in disadvantaged communities to dispose of waste tires responsibly by giving them the oopportunity to bring them to a location in their community and drop them off free of charge. Community members and partner agencies and organizations appreciate these events and the resulting reduction in the number of illegally dumped tires. At the same time, this program is giving young adults paid work experience opportunities to not only clean up their communities, but also to learn important job skills like work ethic, teamwork, communication, and community engagement, while also reducing the number of illegally dumped tires,1,597 in total.

Describe any findings or recommendations that you feel could improve the Tire Amnesty Program.

Easing the permitting process through partner municipalities, and increasing awareness of the public benefit of this program would help to increase the number of venues willing to allow such events to take place.

Eman Nazir
Eman Nazir (Oct 9, 2025 11:19:51 PDT)

Signature (does not have to be signatory)

10/9/2025

Date

2024Sept12CalRecycle 754 - PR and Final Progress Report

Final Audit Report 2025-10-09

Created:	2025-10-09
By:	Eman Nazir (enazir@cvag.org)
Status:	Signed
Transaction ID:	CBJCHBCAABAAvkb7W4-XAfkPiKxgZxpTmdB-wbCWc3ME

"2024Sept12CalRecycle 754 - PR and Final Progress Report" History

Document created by Eman Nazir (enazir@cvag.org)
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Agreement completed.
2025-10-09 - 6:19:51 PM GMT

ITEM 8D

Coachella Valley Association of Governments
Energy & Sustainability Committee
November 13, 2025

STAFF REPORT

Subject: **Coordination of Clean Energy Programs for Residential, Commercial and Industrial Sectors**

Contact: Eman Nazir, Management Analyst (enazir@cvag.org)

Recommendation: Information

Background: CVAG is collaborating with Western Riverside Council of Governments (WRCOG) and San Bernardino Council of Governments (SBCOG) on a joint Regional Energy Network (REN), known as the Inland Regional Energy Network (I-REN). In addition to its own programs, I-REN has been working with other clean energy programs to make it easier for residents and businesses across the Inland Empire to access the programs. CVAG staff provided an overview of these coordination efforts when the I-REN Executive Committee met on October 21, and staff is recapping the information for CVAG's Energy & Sustainability Committee with this report.

One of the largest new investments to the region is the Equitable Building Decarbonization (EBD) program, funded by the California Energy Commission. The program aims to reduce greenhouse gas (GHG) emissions in homes by funding decarbonization retrofits to low- and moderate-income households. The Statewide Incentive Program also incentivizes the increased adoption of low-carbon technologies. The EBD also helps achieve climate goals by encouraging resiliency to extreme heat, improving indoor air quality, addressing energy affordability and providing electric grid support.

In 2024, the California Energy Commission awarded $329 million to the Southern California Equitable Building Decarbonization Coalition (SoCal EBD Coalition), led by Los Angeles County, to launch a residential Direct Install Program across the Southern Region. I-REN, as a coalition partner, was allocated approximately $1.35 million to support marketing and outreach in Riverside and San Bernardino Counties. This program will fund no-cost home retrofits such as heat pumps, efficient appliances, insulation, and other upgrades that reduce energy use and cut utility bills. Administration of the program in the I-REN region is guided by a Memorandum of Understanding (MOU) between WRCOG and Los Angeles County, with WRCOG contracting with the Inland Empire Community Foundation (IECF) to oversee program administration across I-REN territories.

Within the Inland Empire, the CEC has identified Initial Community Focus Areas (ICFAs). CVAG staff continues to analyze the maps to better understand how the ICFAs were developed and what that means for program eligibility. For example, the CEC identified "Indio" as a subregional label for the Coachella Valley, although CVAG staff's preliminary review indicates that it actually encompasses parts of Indio, Coachella, and Bermuda Dunes. Staff will continue to update CVAG's member jurisdictions based on the who is eligible for program participation.

At present, several program elements remain in development. In the coming months, WRCOG and ICF will contract a Program Advisor and coordinate with local community based organizations to help with engagements. Residential project installations are expected to start by early to mid-2026. CVAG

staff will be tracking this program and preparing a strategic framework to ensure the Coachella Valley is positioned to capture its fair share of program resources once implementation begins.

In addition to the EBD program, I-REN partners are identifying third-party residential, commercial, and industrial energy efficiency programs that can complement I-REN's efforts. CVAG staff is leading coordination on the residential programs, consistent with the February 2025 direction from the Executive Committee and the Energy & Sustainability Committee to advocate for energy efficiency programs benefiting Residential and Commercial (small and medium) building sectors as part of the I-REN Business Plan development.

To date, three programs have been engaged:

- Maroma Energy Services (MES) – MES delivers no-cost residential energy conservation measures, including efficient appliances, solar photovoltaics (PV) systems, and weatherization. MES' initiatives include the Energy Savings Assistance Program, Low-Income Weatherization Program, and SCE's Building Electrification offerings. Staff have already engaged with MES to align referral pathways and are developing plans for coordinated outreach that leverages I-REN's existing community connections. MES staff provided an update to the I-REN Executive Committee on October 21, 2025, and CVAG staff will be leading coordination with MES and other residential partners to integrate their programs into community events and city-level engagements.

- Cascade Energy – Cascade supports commercial and industrial corporations with metering, energy monitoring, project identification, and emissions reduction strategies. Their services help organizations identify efficiency upgrades, maximize incentives, and track savings. Staff met with Cascade to discuss engagement approaches, and Cascade is preparing to pilot a referral-based model using I-REN's regional connections until broader outreach strategies are implemented.

- South Coast Air Quality Management District (SCAQMD)– Go Zero Incentive Program – As previously outlined to CVAG's Energy & Sustainability Committee Go Zero offers' rebates of up to $4,000 for single-family, multifamily, and small businesses replacing gas space or water heating equipment with Energy Start heat pumps, with higher incentives in SB 535-designated communities. The program also provides application assistance and installer training. Staff have begun coordination with SCAQMD to align outreach efforts.

Staff will continue evaluating additional programs to expand resources for residents, businesses, and local governments, and will provide regular updates to the Committee on progress.

Fiscal Analysis: There is no cost to CVAG for this informational update.