



WALNUT VALLEY  
WATER DISTRICT

## Exterior Retrofit Irrigation Program (E-RIP) – Phase 2

March 18, 2021



## WATERSMART GRANTS: Small-Scale Water Efficiency Projects

for Fiscal Year 2021

Bureau of Reclamation NOFO No. R21AS00300

**Proposal Submitted to:**  
Bureau of Reclamation  
Financial Assistance Support Section  
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**Project Manager:**  
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Conservation & Special  
Projects Manager  
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## SECTION 1 - TECHNICAL PROPOSAL AND EVALUATION CRITERIA

### A. Executive Summary

Submittal Date: March 18, 2021

Applicant Name: Walnut Valley Water District  
Attn: Erik Hitchman, General Manager  
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Project Manager: Donna DiLaura  
Conservation and Special Programs Manager  
271 S. Brea Canyon Road  
Walnut, County of Los Angeles, CA 91789  
Email: [ddilaura@wvwd.com](mailto:ddilaura@wvwd.com)  
Phone: 909-348-8240

Applicant Category: Category A

Grant Funding Request: \$70,000

Non-Federal Matching Funds: \$79,268.48

Total Project Cost: \$149,268.48

Project Duration: 180 days

Estimated Project Start Date: January 1, 2023

Estimated Project Completion Date: June 30, 2023

Located on Federal Facility: No

Unique Entity Identifier: 066675117

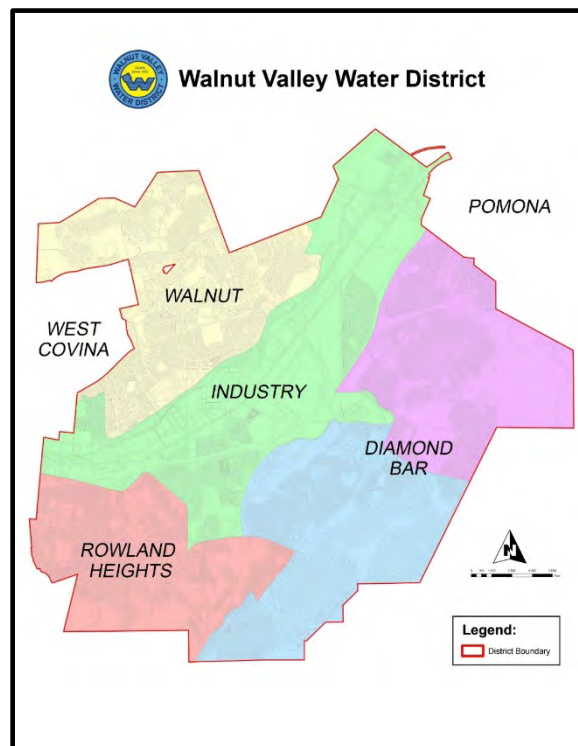


## B. Project Summary

Walnut Valley Water District (WVWD or District) is located 20 miles east of the City of Los Angeles in Southern California’s San Gabriel Valley. WVWD’s Exterior Retrofit Irrigation Program (E-RIP) Phase 2 offers high-water-use customers a free landscape survey and free irrigation system retrofit with the overall goal of improving water-use efficiency via irrigation systems in order to achieve water savings and reliability throughout the District’s service area. Participants of the program will also receive a smart weather-based irrigation controller known as WBIC. The new smart irrigation controller uses local weather data to automatically adjust irrigation schedules to maximize water-use efficiency and plant health. Qualifying sprinklers will be retrofitted with high-efficiency sprinkler nozzles that help reduce waste by applying water more evenly, resulting in less loss to mist and runoff. Minor irrigation system repairs will be made in an effort to reduce outdoor water waste. The landscape survey and retrofit will be conducted by EcoTech Services, Inc.

## C. Project Location

WVWD’s E-RIP Phase 2 project is located within the District’s service area. The District’s service area includes all of the City of Diamond Bar, portions of the cities of Industry, Pomona, Walnut, and West Covina, and the easterly section of the unincorporated area of Rowland Heights. WVWD is located approximately 20 miles east of the City of Los Angeles in the San Gabriel Valley, encompassing an area of approximately 29 square miles with over 27,000 service connections and serving over 100,000 multi-use customers. WVWD is a special district within the state of California and is located within Los Angeles County. None of WVWD’s facilities nor the project location is located on a Federal facility. The project’s latitude is 34.004500 and the longitude is -117.858995. A map of the project location, WVWD service area, is included below.





## **D. Project Description**

The Exterior Retrofit Irrigation Program (E-RIP) Phase 2 to be conducted in partnership with EcoTech Services, Inc. (EcoTech) offers free landscape surveys, weather-based irrigation controllers and high-efficiency nozzle retrofits to targeted residential water consumers. The target audience includes consumers who are on the District's highest water use tier. These efforts aim to reduce water waste and increase water conservation efforts through advanced technology and education. There are three customer qualification requirements that must be met to participate 1) a working exterior irrigation system; 2) a functioning landscape controller (timer); and 3) a high-water-use customer of Walnut Valley Water District.

The District will provide EcoTech with a qualifying customer data base and manage the marketing and promotion of the program to the targeted audience. Outreach includes multilingual efforts. EcoTech will manage direct customer sign-up and scheduling of the survey, also with bilingual customer service capabilities. EcoTech will also be responsible for and tasked with resolution of damaged or defective products as a result of the program.

### Landscape Surveys

EcoTech technicians shall conduct an exterior water-use survey at each qualifying site. The main objective of the survey will be to gather site information in order to evaluate the potential for water savings through the retrofit of devices and to determine equipment needs. EcoTech's technicians shall run the participants irrigation system in order to assess operating conditions and to note current system problems. EcoTech has created a Water-Use Data Collection Form to be filled out during the surveys, which will be presented to WVWD for further development and approval before the program commences. The form will gather data on the landscape, the existing irrigation system and the existing irrigation controller. This form will be stored digitally and sent through email but print copies will be available to the homeowner upon request. Technicians will review all surveyed components related to landscape water use with the participating customer.

### Product Procurement

EcoTech shall be responsible for all product procurement which includes various options for WaterSense approved smart controllers, including controllers from Weathermatic, Rachio, Rainbird and Hunter. The Weathermatic and Hunter controller models include a weather sensor that is installed on-site. The weather sensor provides climate data to the controller in order to modify the minutes and days of irrigation. The Rachio and Rainbird controllers are Wi-Fi based controllers that use an internet connection to download local weather data and automatically adjust the irrigation schedule. An alternative option would be to upgrade the participant's existing controller with a weather sensor, only if the existing model allows for such an upgrade. The standard high-efficiency nozzle chosen for this program is the MP Rotator by Hunter Industries. Rain Bird HE-VAN and R-VAN nozzles are good alternatives for homes with high water pressure or restrictive watering schedules. These nozzles conserve water by improving the system's distribution uniformity. These rotating nozzles are used to retrofit existing fixed spray head bodies. Product descriptions and images are provided in Appendix 1.



### Controller & Nozzle Installation

EcoTech technicians shall install equipment following all manufacturer recommendations and industry approved guidelines. The Program allows for up to two (2) controllers per site. Upon installation of the new equipment, technicians shall activate, commission, and test newly installed devices. EcoTech has developed an Installation Verification Form which will need to be signed by the customer to certify and confirm the type and number of equipment installed. This form will be stored digitally and sent through email but print copies will be available to the homeowner upon request. A signed form will serve as certification that equipment has been activated and tested and is approved as fully functional by the customer.

### Irrigation System Repairs

EcoTech shall only retrofit systems that do not have major irrigation issues, such as broken irrigation lines or broken valves. Retrofitting systems that are in poor condition will not result in water savings. If necessary, technicians will perform minor irrigation repairs before completing retrofit work as agreed upon by WVWD. A list of qualifying minor repairs are included in Appendix 1. Major irrigation problems shall be reported to the participating homeowner. The homeowner will be responsible for repairing major irrigation problems prior to participating in the program. All controller and nozzle installations will follow manufacturer specifications and industry standards.

### Follow-Up Site Visits

During the course of the program it may become necessary to revisit a home for several reasons including, but not limited to; customer complaints, training, or product warranty call. If these situations arise, WVWD will provide EcoTech with approval for the follow-up visit to resolve the situation with the homeowner.



## E. Evaluation Criteria

### E.1.1 Evaluation Criterion A— Project Benefits

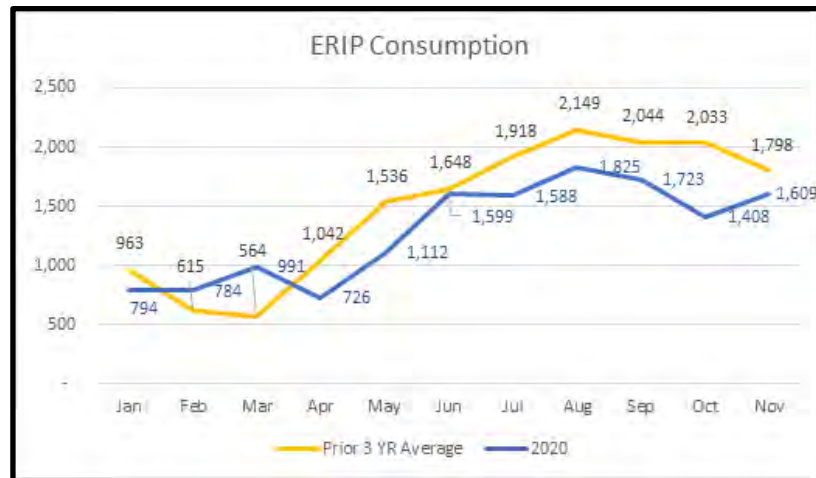
The E-RIP Phase 2 project will provide much needed technical assistance and funding to repair irrigation system leaks, educate the participants in water use efficiency, and ultimately reduce residential water waste. Building on the success of the pilot study conducted in 2020, which resulted in a 13% reduction in water use for the project participants, E-RIP Phase 2 will be offered to an expanded list of WVWD customers and include more flexibility to offer funding for minor repairs.

- **Describe the expected benefits and outcomes of implementing the proposed project.**

The expected benefits and outcomes of the proposed project include:

- Increased water supply reliability
  - District wide water savings
  - Water efficient landscape management
  - Increased water conservation efforts
  - Implementation of WaterSense and innovative technology products
  - Reduced water waste at residential properties
  - Targeted water use efficiency education and outreach
  - Financial assistance to participants who may otherwise not be able to make water efficient upgrades
  - Increased affordability of monthly water bills for customers
- **What are the benefits to the applicant’s water supply delivery system?**  
 Direct water savings to the District’s water supply delivery system. Based on water savings results from WVWD’s E-RIP pilot study, the District tracked an average of 13% water savings over an 11-month period. Results of WVWD’s pilot study are included below.

**Figure 1 - WVWD E-RIP Pilot Study (2020) Consumption Tracking**





**Figure 2 - WVWD E-RIP Pilot Study (2020) 11-Month Consumption Tracking**

Row Labels	2017	2018	2019	Prior 3 YR	2020	Grand Total
Jan	510	1,488	890	963	794	3,682
Feb	255	1,139	450	615	784	2,628
Mar	440	839	414	564	991	2,684
Apr	1,157	740	1,229	1,042	726	3,852
May	1,561	1,661	1,385	1,536	1,112	5,719
Jun	1,940	1,811	1,193	1,648	1,599	6,543
Jul	1,975	1,896	1,884	1,918	1,588	7,343
Aug	2,205	2,237	2,004	2,149	1,825	8,271
Sep	1,811	2,403	1,919	2,044	1,723	7,856
Oct	2,091	1,930	2,077	2,033	1,408	7,506
Nov	1,849	1,651	1,893	1,798	1,609	7,002
Grand Total	15,794	17,795	15,338	16,309	14,159	63,086
Percentage Water Savings					13.2%	
Water Units					2,150	
Savings					\$ 8,578.50	

- **If other benefits are expected, explain those as well. Consider the following:**
  - **Extent to which the proposed project improves overall water supply reliability**  
 The proposed project will assist in improved overall water supply reliability by reducing water waste in the District’s service area through irrigation and landscape improvements. A reduction in water waste will allow the District’s potable water supply to be better managed and stored.
  - **The expected geographic scope benefits from the proposed project (e.g., local, sub-basin, basin)**  
 The proposed project will directly benefit WVWD’s service area, it will also have a geographic benefit of relieving tension on the Lower Colorado River Basin and the State Water Project, from which the District’s water supply comes from.
  - **Extent to which the proposed project will increase collaboration and information sharing among water managers in the region**  
 Program tracking and direct water savings from the proposed project will be shared with WVWD’s wholesale water retailer Three Valleys Municipal Water District and the Metropolitan Water District of Southern California. WVWD is a regular participant of conservation round tables and water use efficiency workgroups with the goal of sharing project information and increased regional collaboration. Information shared from this project will result in a greater understanding of consumer behavior and water savings tools that produce results and open a dialogue among





member agencies. Member agencies within the groups mentioned above include over 26 Southern California water agencies and municipalities.

- **Any anticipated positive impacts/benefits to local sectors and economies (e.g., agriculture, environment, recreation, tourism)**  
Increased landscape management and water savings are anticipated benefits/positive impacts of the proposed project. WVWD, being located in Southern California’s drought region seeks to improve water management through water-use efficiency practices that benefit the environment by ensuring that water being used for irrigation purposes is being done so under environmentally efficient purposes.
- **Extent to which the project will complement work done in coordination with NRCS in the area (e.g., with a direct connection to the district’s water supply). Describe any on-farm efficiency work that is currently being completed or is anticipated to be completed in the future using NRCS assistance through EQIP or other programs.**  
Not applicable.

### **E.1.2 Evaluation Criterion B— Planning Efforts Supporting the Project**

**Describe how your project is supported by an existing planning effort.**

The implementation of the proposed project, E-RIP Phase 2, as a water conservation measure is included in the District’s 2019 Strategic Vision Plan and the 2020 Water Use Efficiency (WUE) Strategic Plan. The project streamlines water conservation management efforts that support water supply reliability. The implementation of irrigation upgrades through innovative technology allows customers to regularly engage with their water usage and increase their landscape management through conservation.

- **Does the proposed project implement a goal or address a need or problem identified in the existing planning effort?**  
The proposed project meets target goals and objectives included in the WUE Plan and is an approved conservation measure to promote wherever possible and practicable the use of water conservation practices and to provide the District’s customers with educational opportunities to learn about the benefits of water efficiency and conservation. Approved conservation measures outlined in the WUE Plan are included in Appendix 2.
- **Explain how the proposed project has been determined as a priority in the existing planning effort as opposed to other potential projects/measures.**  
Lessons learned from the District’s E-RIP pilot study show that repairs and upgrades to irrigation systems result in immediate and quantitative reductions in water waste and



water cost savings. This project provides much needed additional funding for anticipated customer repairs. WVWD has incorporated this project in its 2020 Water Use Efficiency Strategic Plan to ensure that the District can better serve customers who require assistance with program repairs, and who also fit the District’s targeted audience for overall increased water use efficiency.

### E.1.3. Evaluation Criterion C—Project Implementation

- **Describe the implementation plan for the proposed project. Please include an estimated project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates.**

**Figure 3 – Project Implementation**

<b>Estimated Project Schedule – Exterior Retrofit Irrigation Program Phase 2</b>		
<b>Task/Milestone</b>	<b>Date</b>	<b>Proposed Work</b>
Project Start	January 1, 2023	Launch Phase 2
Customer Information Campaign	January – May, 2023	Multi-phase Outreach Efforts
Customer Surveys	January 7- June 30, 2023	EcoTech Site Visits
Project Completion	June 30, 2023	Complete Phase 2

- **Describe any permits that will be required, along with the process for obtaining such permits.**  
 There are no required permits anticipated for the project.
- **Identify and describe any engineering or design work performed specifically in support of the proposed project.**  
 This proposed project does not require any engineering or design work.
- **Describe any new policies or administrative actions required to implement the project.** There are no new policies or administrative actions required to implement the project.
- **Describe the timeline for completion of environmental and cultural resource compliance. Was the timeline for completion of environmental and cultural resource compliance discussed with the local Reclamation office?**  
 There are not any environmental and cultural resource compliance matters to address for this project.



#### E.1.4. Evaluation Criterion D— Nexus to Reclamation

- **Is the proposed project connected to a Reclamation project or activity? If so, how?**

Please consider the following:

- **Does the applicant receive Reclamation project water?**
- **Is the project on Reclamation project lands or involving Reclamation facilities?**
- **Is the project in the same basin as a Reclamation project or activity?**
- **Will the proposed work contribute water to a basin where a Reclamation project is located?**

The proposed E-RIP Phase 2 project is associated with the Lower Colorado River Basin. The District receives imported water from the Metropolitan Water District of Southern California, which relies on water resources from the Colorado River Aqueduct, and the State Water Project in Northern California. The project itself does not directly involve Reclamation project lands or Reclamation facilities, nor does WVWD receive water from a Reclamation project. While the proposed project does not involve Reclamation projects, WVWD's proposal would increase the availability of the overall water supply through improvements in water use efficiency and conservation. Currently, WVWD imports 100% of its potable water supply, the proposed project would alleviate some pressure on the Lower Colorado River Basin resulting in greater availability for other agencies that depend on these same water resources and aid in water reliability and conservation efforts. The proposed project supports increased water use efficiency and conservation efforts, which would help Reclamation in meeting federal Indian trust responsibility to protect tribal treaty rights, lands, assets, and resources.

- **Will the project benefit any tribe(s)?**

The District's service area does not directly provide water to tribes. However, water savings from the project will result in decreased demand on the SWP and Lower Colorado River Basin, a source of water for rural and Indian tribes. WVWD relies on imported water supplies from the Colorado River Basin via the Colorado River Aqueduct and the State Water Project (SWP). The implementation of the proposed project supports conservation efforts that would reduce dependence on these water supplies resulting in potentially more water available to tribal and rural communities that depend on these impacted sources.



## SECTION 2 - PROJECT BUDGET

### A. Funding Plan and Letters of Commitment

Walnut Valley Water District will pay for its cost-share requirement by utilizing funds from its general budget. The District does not have any third-party funding sources contributing to this project. The District maintains a strong financial standing. A copy of the District’s audited financial statements, for the past five years, are available at [www.wvwd.com/transparency-and-accountability/](http://www.wvwd.com/transparency-and-accountability/).

The budget proposal does not include any project costs that have been or may be incurred prior to award. The funding plan anticipates that WaterSMART grant funds will be used in conjunction with District funds for all costs associated with the project. Aside from this WaterSMART FY 2021 funding request, there are no other pending funding requests.

### B. Budget Proposal

Table 1.—Total Project Cost Table

Source	Amount
Costs to be reimbursed with the request Federal funding	\$70,000.00
Costs to be paid by the applicant	\$79,268.48
Value of third-party contributions	\$0.00
<b>TOTAL PROJECT COST</b>	<b>\$149,268.48</b>

Table 2.—Sample Budget Proposal Format

	COMPUTATION		Quantity Type	TOTAL COST
	\$	Quantity		
<b>Salaries and Wages</b>				
Conservation & Special Projects Manager	\$57.64	48	Hours	\$2,766.72
<b>Fringe Benefits</b>				
Conservation & Special Projects Manager	\$27.12	48	Hours	\$1,301.76
<b>Travel</b>				
N/A				\$
<b>Equipment</b>				
N/A				\$
<b>Supplies and Materials</b>				
N/A				\$
<b>Contractual/Construction</b>				
EcoTech Services, Inc.	\$4,400	33	Contract	\$145,200
<b>Other</b>				
N/A				\$
<b>TOTAL DIRECT</b>				<b>\$ 149,268.48</b>
<b>Indirect Costs</b>				
N/A				\$
<b>TOTAL ESTIMATED PROJECT COSTS</b>				<b>\$ 149,268.48</b>



## C. Budget Narrative

### *Salaries and Wages*

The hourly rates listed for Walnut Valley Water District staff exclude fringe benefits and represent an estimate of the District forces that will be employed to complete the project.

Key personnel for the project includes:

- Project Manager – Donna DiLaura, Conservation & Special Projects Manager

### *Fringe Benefits*

Fringe benefits are included in the budget for District staff and range from 32 to 56 percent of staff salaries. The salary ranges for all positions are available at <https://www.wvwd.com/wp-content/uploads/2020/03/WVWD-Salary-Charts-1-20.pdf>[www.wvwd.com](https://www.wvwd.com).

### *Travel*

Travel is not included in this budget proposal.

### *Equipment*

Equipment to complete the proposed project does not have a value more than \$5,000. The equipment is classified as materials and supplies included under contractual cost in the budget proposal.

### *Materials and Supplies*

Materials and supplies will be furnished and installed under the contract with EcoTech Services, Inc. the equipment is included as a contractual cost in the budget proposal.

### *Contractual*

WVWD will enter into a contractual agreement with EcoTech Services, Inc. to implement and complete the proposed project according to the estimated project schedule included in Figure 3. This contractual partnership began in 2019-2020 for the completion of the E-RIP pilot study. The estimated costs for this project, included in the Budget Proposal, cover the quick estimate for the average home that includes the landscape survey, upgraded weather based irrigation controller WBIC, updated sprinkler nozzles, and minor repairs. The District assumes 33 program participants at an average cost per home not to exceed \$4,400.00. Actual cost per home will vary based on the condition of their current irrigation system. A copy of the proposed costs from the pilot study for reference is included in Appendix 1.

### *Third-Party In-Kind Contributions*

None.

### *Environmental and Regulatory Compliance Costs*

None.



*Other Expenses*

None.

*Indirect Costs*

None.

The District will inform Reclamation of any variation from the budget proposal.



## SECTION 3 - ENVIRONMENTAL AND CULTURAL RESOURCES COMPLIANCE

- **Will the proposed project impact the surrounding environment (e.g., soil [dust], air, water [quality and quantity], animal habitat)? Please briefly describe all earth-disturbing work and any work that will affect the air, water, or animal habitat in the project area. Please also explain the impacts of such work on the surrounding environment and any steps that could be taken to minimize the impacts.**

The proposed project will not impact the surrounding environment. Earth-disturbing work is not anticipated.

- **Are you aware of any species listed or proposed to be listed as a Federal threatened or endangered species, or designated critical habitat in the project area? If so, would they be affected by any activities associated with the proposed project?**

It is not anticipated or expected that any species would be affected by activities associated with the proposed project.

- **Are there wetlands or other surface waters inside the project boundaries that potentially fall under CWA jurisdiction as “Waters of the United States?” If so, please describe and estimate any impacts the proposed project may have.**

There are no wetlands or other surface waters inside the proposed project boundaries nor any that fall under CWA jurisdiction as “Water of the United States.”

- **When was the water delivery system constructed?**

WVWD’s water delivery system was originally constructed in 1956, major construction and expansion of the distribution system continued in 1956-1957 with the Joint Water Line and in 1992-1993 with the Badillo/Grand Transmission Main. System expansion, repair, and rehabilitation projects have been ongoing since the time of original construction.

- **Will the proposed project result in any modification of or effects to, individual features of an irrigation system (e.g., headgates, canals, or flumes)? If so, state when those features were constructed and describe the nature and timing of any extensive alterations or modifications to those features completed previously.**

The proposed project will not result in any modifications or effects to the individual features of an irrigation system.

- **Are any buildings, structures, or features in the irrigation district listed or eligible for listing on the National Register of Historic Places? A cultural resources specialist at your local Reclamation office or the State Historic Preservation Office can assist in answering this question.**

There are no buildings, structures, or features in the district listed or eligible for listing on the National Register of Historic Places.



- **Are there any known archeological sites in the proposed project area?**

There are no known archeological sites in the proposed project area.

- **Will the proposed project have a disproportionately high and adverse effect on low income or minority populations?**

No. In fact, this proposed project will help those customers who cannot afford to pay a contractor to make the needed repairs. This proposed project will result in less water waste, and we expect this will result in a lower water bill. The District's customer population includes residents who meet the definition of economically disadvantaged. By empowering customers with knowledge and access of their water usage, they will be able to better manage their conservation efforts and experience water savings on a monthly basis.

- **Will the proposed project limit access to and ceremonial use of Indian sacred sites or result in other impacts on tribal lands?**

The proposed project will not limit access to and ceremonial use of Indian sacred sites or result in other negative impacts on tribal lands. The project could potentially benefit tribal lands and communities receiving water from the State Water Project or the Colorado River Aqueduct by an increase in water supply availability from water use efficiency and conservation efforts that are a major component of this project.

- **Will the proposed project contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area?**

The proposed project will not contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to the project area.





## **SECTION 4 - REQUIRED PERMITS OR APPROVALS**

There are no required permits anticipated or expected for this project

## **SECTION 5 - LETTERS OF PROJECT SUPPORT**

Letters of support from the following entities are included in Appendix 3:

- Three Valleys Municipal Water District
- Metropolitan Water District of Southern California

## **SECTION 6 - OFFICIAL RESOLUTION**

Walnut Valley Water District's Board of Directors adopted an official resolution to authorize the General Manager and his designee to apply for, receive, and enter into a cooperative agreement and administer a grant for the Bureau of Reclamation's Small-Scale Water Efficiency Projects Grant on Monday, March 15, 2021 (Appendix 4). The District has the capability to provide the amount of funding and/or in-kind contributions that is required to complete the proposed project as specified in the funding plan and will work with Reclamation to meet established deadlines for entering into a grant or cooperative agreement.

## **SECTION 7 - UNIQUE ENTITY IDENTIFIER**

WVWD registered in the System for Award Management (SAM) prior to submission of this application and maintains an active SAM registration with current information. The District will continue to maintain this information at all times during which an active Federal award or application or plan under consideration by the Bureau of Reclamation. The District's unique entity identifier is 066675117.



## Appendices:

- Appendix 1: E-RIP Pilot Study Contract Proposal
- Appendix 2: Water Use Efficiency (WUE) Strategic Plan Conservation Measures
- Appendix 3: Letters of Project Support
- Appendix 4: Official Resolution



*proposal*



# EXTERIOR RETROFIT IRRIGATION PROGRAM



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Monrovia, CA 91016  
www.ecotechservices.net

Malcolm McLaren, President  
(626) 733-2056  
mmclaren@ecotechservices.net

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**Type of Business:** Corporation / California

**Business License:** BUS2015-00452 / issued by City of Monrovia

**Federal Tax Identification Number:** 45-4731434

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License #988204

## THE ECOTECH ADVANTAGE

- Turnkey Program Solutions
- Dedicated Manager Assigned to Project
- Fully Staffed Customer Service Department
- Certified Field Technicians
- Company Uniforms & ID Badges
- Branded Fleet Vehicles w/ Logos & Phone #
- Dependable Track Record
- No 1099's, No Up-Sales

Our goal as your contractor is to be the least of your worries. When it comes to project management, you as our client come first. We use the goal and the spirit of your project in all of our decision making.

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*Walnut Valley Water District  
Exterior Retrofit Irrigation Program*

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## LETTER OF TRANSMITTAL

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May 13, 2020

Donna DiLaura  
Conservation Manager  
Walnut Valley Water District  
ddilaura@wvwd.com  
909-348-8240

EcoTech Services, Inc. (EcoTech) is proud to submit this proposal to Walnut Valley Water District (WVWD) to provide irrigation controller and nozzle retrofits for the District's top 1% of residential water consumers. We applaud your commitment to water conservation.

With over seven years of experience in the landscaping and water conservation industry, EcoTech is well positioned to provide cost effective and successful solutions. The company has maintained a long tradition of promoting water conservation within landscaping and has created and managed a wide variety of multi-faceted programs.

Throughout this proposal EcoTech will reveal its familiarity with the scope of work required for a successful irrigation retrofit program and the company's capability of performing timely and quality work to achieve your objectives.

I am authorized to bind my company to this proposal, which includes the facts and figures herein.

Sincerely,



Malcolm McLaren  
President  
mmclaren@ecotechservices.net  
(626) 788-5654

# Scope of Work



EcoTech understands that WVWD would like to offer free landscape surveys, weather-based irrigation controllers and high-efficiency nozzle retrofits to a targeted top 1% of residential water consumers. The overall goal of the program is to improve water-use efficiency in irrigation systems in order to achieve water savings. EcoTech has the experience and infrastructure to offer WVWD a complete turn-key solution for this program.

## Program Marketing & Customer Qualification

- WVWD will be responsible for providing a list of eligible service addresses that qualify for the Program. EcoTech shall use the list of addresses as qualifying criteria to determine customer eligibility.
- WVWD will market the program and send it directly to the targeted customers. The marketing will explain the purpose of the Program, list the benefits it provides to participants, eligibility requirements and information on how to sign up.
- WVWD will be responsible for the development and distribution of marketing materials. However, EcoTech may assist with marketing tasks upon request.
- EcoTech will provide a toll-free phone number to be given to potential participants. The toll-free line shall be staffed by EcoTech's bilingual customer service team during regular business hours.
- EcoTech can also offer a dedicated, custom program page on EcoTech's website where customers can be directed to review program information, eligibility requirements, the release of liability, product spec sheets, and FAQs. This web page would also allow customers to apply for the program online. All online application information is securely sent to EcoTech's customer service team for follow-up.
- EcoTech's customer service team will receive phone calls from potential program participants to explain the program in more detail and confirm specific information related to participation eligibility requirements. Once participants are approved, EcoTech will schedule the survey and retrofits.

## Customer Service

- EcoTech will provide bilingual (English/Spanish) customer service representatives on a toll-free line to assist customers. Representatives will be available Monday through Friday from 8:00 a.m. to 4:30 p.m.
- An automated after-hours greeting will be set up to accept customers' messages in both English and Spanish and all messages shall be returned *within two business days*. All call-backs and resolutions taken will be recorded in the database.
- EcoTech will be responsible for receiving service calls for any damaged or defective product and shall provide replacement parts to customers in a timely manner.
- EcoTech prides itself in the ability to provide a quick response and resolution to any situation that may arise. Any emergencies that should arise will take priority.
- Service calls and actions taken to resolve issues shall be logged in EcoTech's program database for reference.

## Landscape Surveys

- EcoTech technicians shall conduct an exterior water-use survey at each qualifying site. The main objective of the survey will be to gather site information in order to evaluate the potential for water savings through the retrofit of devices and to determine equipment needs.
- EcoTech's technicians shall run the irrigation system in order to assess operating conditions and to



note current system problems.

- EcoTech has created a water-use data collection form to be filled out during the surveys, which will be presented to WVWD for further development and approval before the Program commences. The form will gather data on the landscape, the existing irrigation system and the existing irrigation controller. This form will be stored digitally and sent through email but print copies will be available to homeowner upon request.
- Technicians will review all surveyed components related to landscape water use with the participating customer.

## **Product Procurement**

- EcoTech shall be responsible for all product procurement.
- Our proposal includes various options for WaterSense approved smart controllers, including controllers from Weathermatic, Rachio, Rainbird and Hunter.
- The Weathermatic and Hunter controller models include a weather sensor that is installed on-site. The weather sensor provides climate data to the controller in order to modify the minutes and days of irrigation.
- The Rachio and Rainbird controllers are Wi-Fi based controllers that use an internet connection to download local weather data and automatically adjust the irrigation schedule.
- All controllers are SWAT tested and listed under MWD's list of approved controllers.
- A fourth option would be to upgrade the participant's existing controller with a weather sensor, only if the existing model allows for such an upgrade.
- The standard high-efficiency nozzle chosen for this program is the MP Rotator by Hunter Industries.
- Rain Bird HE-VAN and R-VAN nozzles are good alternatives for homes with high water pressure or restrictive watering schedules.
- These nozzles are SWAT approved and conserve water by improving the system's distribution uniformity. These rotating nozzles are used to retrofit existing fixed spray head bodies.

## **Controller & Nozzle Installation**

- EcoTech technicians shall install equipment following all manufacturer recommendations and industry approved guidelines.
- The Program allows for up to two (2) controllers per site. If customers want additional controllers, they will need to hire and pay EcoTech directly and separately to install them.
- Upon installation of the new equipment, technicians shall activate, commission and test newly installed devices.
- EcoTech has developed an Installation Verification Form which will need to be signed by the customer to certify and confirm the type and number of equipment installed. This form will be stored digitally and sent through email but print copies will be available to homeowner upon request. A signed form will serve as certification that equipment has been activated and tested and is approved as fully functional by the customer.

## **Irrigation System Repairs**

- EcoTech shall only retrofit systems that do not have major irrigation issues, such as broken irrigation lines or broken valves. Retrofitting systems that are in poor condition will not result in water savings.
- If necessary, technicians can perform minor irrigation repairs before completing retrofit work if WVWD agrees.
- These repairs will be billable to WVWD at fixed rates per repair type (see Proposed Cost), with a max cap repair budget calculated as \$20 per active station at the address.
- Major irrigation problems shall be reported to the participating homeowner. The homeowner will be





responsible for repairing major irrigation problems prior to participating in the program.

- All controller and nozzle installations will follow manufacturer specifications and industry standards.

### **Old Controller Recycling**

- EcoTech proposes to store old controllers that have been removed during the Program for a period of six months in case a particular homeowner decides to return the Smart Controller.
- EcoTech shall recycle old controllers through an approved e-waste facility six months post-installation.
- The re-installation of a participant's old controller is not covered by this Program.

### **Data Collection & Management**

- EcoTech shall collect and store all program information in a robust and secure cloud-based database dedicated to the program. This cloud-based system allows seamless customer management and central data storage from initial contact to the final customer follow-up visit.
- EcoTech shall capture each participant's information, including the following:
  - Contact information (i.e. name, address, phone, account number and pre-qualification info)
  - Landscape survey data
  - Product installation information
  - Warranty/replacement part information
  - Release of liability and agreement to participation guidelines
- Program forms, in triplicate, are available for WVWD at print cost. If WVWD requests a customized form for this program, EcoTech shall provide a cost estimate for the development of the custom form requested.
- After data entry and final billing, physical program forms will become the property and responsibility of WVWD. EcoTech is happy to shred these forms to protect customer confidentiality at WVWD's request.

### **Program Reporting**

EcoTech shall provide an Excel spreadsheet to WVWD to serve as the program report. The report shall include the participant's information, product installation data, and minor irrigation system repairs performed and any service calls. Reports will be accompanied by invoices for product and services provided.

### **Follow-Up Site Visits**

During the course of the program it may become necessary to revisit a home for several reasons including but not limited to; customer complaints, training, or product warranty call. If these situations arise and WVWD approves the follow-up visit the cost below will cover the time it takes to resolve the situation with the homeowner. If additional material is required it will be billed at the rate provided above.



## WARRANTY

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### **EcoTech Services Warranty**

- *Workmanship*
  - EcoTech Services warrants the installation of products to be free from defects in workmanship from the date the installation of the product is completed for a period of one (1) year of normal use.
  - Workmanship warranty does not include any damages or defects caused by vandalism, misuse or modifications of the product, or “acts of god.”
- *Product*
  - EcoTech warrants the product used during installation for a period of one (1) year of normal use.
  - Product warranty does not include normal wear and tear or any modifications made to the product after EcoTech’s installation.
- EcoTech will have the right to inspect the areas at issue to determine the cause of the alleged defects. If the defects are determined to be within the scope of the workmanship warranty, EcoTech will make the necessary repairs at EcoTech’s expense.

### **Manufacturer’s Limited Warranty**

- Manufacturer’s warranty will differ with each manufacturer and product.
- Program participants are given manufacturer’s product literature and owner’s manual, which will contain warranty information.
- After EcoTech’s one (1) year product warranty has expired it is the program participant’s responsibility to contact the manufacturer for any warranty issues.



# Proposed Cost



QUICK ESTIMATE FOR AVERAGE HOME	COST
Survey, Hunter ICC2 controller expanded to 24 stations, 200 MP Rotator nozzles and max budget system repairs	\$4,000
<i>These are quick estimates to help with program budgeting only. Actual cost per home will vary.</i>	

This cost proposal includes all tasks and deliverables listed in the Scope of Work. The cost per unit below is all inclusive of taxes and overhead associated with product purchasing. Further details are available in the Product Specifications section.

*For multi-year contracts, a 3% cost increase will be added each year during the life of the contract.*

## LANDSCAPE SURVEYS

Survey examines all landscape and irrigation items described in the scope or work.

LANDSCAPE SURVEY	COST
Up to 32 irrigation stations at single address	\$360
Cost per additional station over 32	\$35



## WEATHER-BASED IRRIGATION CONTROLLERS

The fee schedule below lists the standard controllers proposed for this program. The Weathermatic and Hunter controller models include a weather station that is installed on-site and does not require Wi-Fi at the home. The weather station provides climate data to the controller in order to modify the minutes and days of irrigation. The Hunter controllers are a new pilot product for this program that are more cost-effective and could lower the average cost per home. Weathermatic controllers are still included to offer a variety of brand names that homeowners and EcoTech trusts. The Rachio and Rainbird controllers are a Wi-Fi based controller that uses the home's Wi-Fi signal to download weather data and automatically adjust the irrigation schedule. All controllers are SWAT tested and listed under MWD's list of approved controllers.

*Proposed cost includes product and installation.*

NO WI-FI REQUIRED	BASE STATIONS	MAX STATIONS	COST
<b>Weathermatic SL1600</b> <i>4 station expansion module</i>	4	16	\$725 \$55
<b>Weathermatic SL4800</b> <i>12 station expansion module</i>	12	48	\$1,015 \$155
<b>Hunter X-Core</b>	<i>Fixed at 8</i>		\$600
<b>Hunter PRO-C</b> <i>3 sta. / 9 sta. expansion module</i>	4	16	\$610 \$50 / \$140
<b>Hunter ICC2</b> <i>4 sta. / 8 sta. / 22 sta. expansion module</i>	8	38	\$700 \$80 / \$130 / \$260

HOME WI-FI REQUIRED	BASE STATIONS	MAX STATIONS	COST
<b>Rachio 3</b>	Fixed up to 16		\$660
<b>Rainbird ESP-TM2</b>	Fixed up to 12		\$680
<b>Rainbird ESP-Me3</b> <i>3 sta. / 6 sta. expansion module</i>	4	22	\$610 \$50 / \$80



## HIGH-EFFICIENCY NOZZLE

The proposed options of nozzles for this program are the Hunter MP Rotator and the Rainbird HE-VAN and R-VAN Series. These nozzles are used to replace existing fixed arc nozzles on spray sprinkler bodies. High efficiency nozzles apply water at a significantly lower rate and with increased uniformity (even coverage). There may be situations where a broken sprinkler body, valve wiring, or high water pressure does not allow for the installation of nozzles. We propose to fix these problems first in order to allow for a complete and effective retrofit of nozzles within an irrigation zone. Minor sprinkler system repairs are billed separately from the installation of the high efficiency nozzles.

<b>HIGH-EFFICIENCY NOZZLES</b>	<b>COST</b>
<b>Rainbird HE-VAN Series</b>	<b>\$7</b>
<b>Rainbird R-VAN Series</b>	<b>\$11</b>
<b>Hunter MP Rotator</b>	<b>\$11</b>



## MINOR IRRIGATION REPAIRS

In an effort for fairness to all program participants, EcoTesh proposes that the minor irrigation repair budget per home should be on a sliding scale based on irrigated area at the home. For simplicity, this will be determined by the number of active irrigation stations. The repair budget will be calculated as the number of active irrigation stations times \$20 (i.e. 20 active stations x \$20 = \$400 repair budget). The repair types listed below cover 99% of what EcoTech technicians encounter at a residential home. If a needed repair is not covered by this list, EcoTech will bill \$50/hr plus a 10% product procurement fee.

The California Energy Commission Resolution 19-0814-7 mandates that only pressure regulated sprinkler bodies shall be bought and sold in California starting October 1st, 2020. This means that the pricing for standard bodies and standard bodies with check valve listed below will no longer be available starting October 1st, 2020.

*Proposed cost includes product and installation.*

REPAIR TYPE			COST PER EACH
<b>Sprinkler Body Change Out</b>  (if existing body is metal, repair cost is +\$10 per body)	<b>Standard Body</b> (unavailable starting Oct. 2020)	2"	\$8
		4"	\$7
		6"	\$15
		12"	\$35
	<b>Standard Body w/ Check Valve</b> (unavailable starting Oct. 2020)	4"	\$10
		6"	\$20
		12"	\$40
	<b>Pressure Regulating Body</b>	4"	\$10
		6"	\$20
		12"	\$40
	<b>Pressure Regulating Body w/ Check Valve</b>	4"	\$15
		6"	\$25
12"		\$45	
<b>Minor Irrigation Break</b>			\$20
<b>Major Irrigation Break (root-bound line, over 18" deep, 4' + line break)</b>			\$60
<b>Shrub Adaptor Repair/Swap (+\$2 for metal sprinkler swap)</b>			\$3
<b>Valve Replacement</b>			\$35
<b>Valve Re-Wiring</b>			\$10
<b>Riser Addition or Replacement</b>			\$5



## FOLLOW-UP SITE VISIT

During the course of the program it may become necessary to revisit a home for several reasons including, but not limited to; customer complaints, training, or product warranty call. If these situations arise and WVWD approves, the follow-up visit cost below will cover the time it takes to resolve the situation with the homeowner. If additional material is required it will be billed at the rate provided above.

MISCELLANEOUS	COST
Follow-Up Site Visit	\$150

For payment, checks must be made payable to EcoTech Services, Inc. Any payment or billing questions should be directed to:

Veronica Quezada  
Director of Accounting  
vquezada@ecotechservices.net  
626-788-5652



# Product Specifications



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Weathermatic SmartLine Controller	15
Rachio 3 Controller	17
Rain Bird ESP-TM2 Controller	19
Rain Bird ESP-Me3 Controller	21
Hunter X-CORE Controller	23
Hunter PRO-C Controller	24
Hunter ICC2 Controller	25
Hunter MP Rotator Nozzle	26
Rain Bird HE-VAN Nozzle	27
Rain Bird R-VAN Nozzle	28

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# SmartLine<sup>®</sup>

The Smart Irrigation Controller



With over 500,000 SmartLine Controllers saving vast amounts of water around the world, your next project will be added to the growing list. The SmartLine feature set exceeds that of most high-end controllers, yet was engineered to make ET-Based Water Management affordable for any sized project.



**1,000 gallons** given per controller

Our mission is to deliver clean drinking water to thousands of families in need, and to inspire our partners to put water first in irrigation, design, installation, and maintenance.



# SMARTLINE® FEATURES

## TWO CONTROLLERS IN ONE

The "Basic" mode programs exactly like the conventional controllers used by most manufacturers. There's no need to learn a new method. The "Smart" mode is where the power lies. Combined with our SLW Series Weather Stations, SmartLine becomes an ET-Based water-saving controller that automatically adjusts watering times 365 days a year.

## SMART MODE

ET Watering adjusts the duration, frequency, and soak time by several factors. Weather Data combined with geographical location, sprinkler type, plant type, soil type, and a fine tuning option, enables your SmartLine controller to make precise watering decisions.

## ACCESS YOUR SMARTLINE CONTROLLER FROM VIRTUALLY ANYWHERE

The days of irrigation controllers being programmed once, and left alone for months, is over. Adding the SmartLink Network gives you access to your SmartLine controllers via your Computer, Tablet, or Smartphone. Irrigation Management made simple, affordable, and packed with features.

## BACKLIT LCD / REAL TIME CLOCK / CALENDAR & NON-VOLATILE PROGRAM MEMORY

No flashlight required in dark basements and garages. No battery required! On board memory chip retains time, date and program information even during a power outage

## OMIT TIMES / DAYS / DATES SEASONAL % ADJUST BY MONTH BY PROGRAM

Automatically comply with local water restrictions; eliminate irrigated water lost to evaporation in the heat of the day; stop irrigation on lawn maintenance days; never water on the date of an annual event (ex: July 4th). A monthly watering budget % can be set up by program to automatically adjust zone run times for seasonal changes.

## ADVANCED MENU

The Advanced Menu contains 17 tools, ranging from diagnostics, troubleshooting, and advanced water management tools. Below only scratches the surface.

## BUILT-IN VALVE LOCATOR

Locate hidden valves by simply listening for the audible chatter of the solenoid created by a unique electrical frequency. (U.S. Pat #7406363)

## ON-BOARD MULTI-METER

Displays the electrical current reading of each zone for quick troubleshooting and a proactive approach to maintenance.

## MASTER VALVE / PUMP SETTINGS

Achieve hydraulic control with settings for zone-to-zone delays, master valve timing, and master valve On/Off by zone

## BACKTRACK STORED PROGRAM GROW-IN PROGRAM FEATURE

Allows you to easily store a default program and retrieve the saved program in the event someone improperly reprograms the controller. Allows you to set up a temporary program to grow in new plant material then automatically switch to a day to day program when you decide.

## RUNOFF ELIMINATOR

Eliminate runoff by setting the maximum allowable run time and minimum soak time by program



### BASIC FEATURES

- Upgradable to SmartLink® web-based access (SL1600/SL4800) See page 17
- 4 independent programs - each stacks or can operate simultaneously
- 8 start times per program
- Indoor/outdoor rated
- Zone run times settable from 1 min. to 9 hrs. 55 min.
- Rain/freeze sensing on/off button with tri-color LED indicator
- Rain delay of 1 - 7 days
- SLW5/SLW1 Weather Station rain delay programmable from 0 - 99 hours
- Seasonal % adjust by program, by month
- Omit time of day window, day(s) of week, and up to 7 calendar dates
- Programmable zone-to-zone delay 1 min. - 3 hrs.
- Watering days: custom days of the week, odd/even, or interval days
- Run/Soak cycles by program
- Large backlit LCD display
- Non-volatile memory - with no battery required
- Internal transformer with pre-installed 6' line cord (SL1600, SL1620 only)
- 2 simultaneous watering modes: basic mode and smart mode. Each zone can run in either mode independent of other zones, even in the same program.
- Basic mode: user controlled conventional operation
- Smart mode: daily automatic programming adjustments
- 5 user-selectable languages
- Simultaneous solenoid operation: 3 solenoids (SL800/SL1600), 5 solenoids (SL4800)

### SMART WATERING FEATURES

- ZIP Code input or latitude input
- Sprinkler type input
- Plant type input
- Soil type input
- More/less ET tuning
- Watering run times
- Review menu displays accumulated ET deficits by zone
- Display maximum run time and minimum soak time
- Displays temperature readings (daily high/low) for previous 5 days
- Accumulates total run times by zone from the last reset date
- Clear deficits for all zones
- Extended rain delay programmable from 0 - 99 hours

### MANUAL OPERATION

- Manual test runs each zone with zone run times from 10 sec. - 10 min.
- Manual zone operation of a single zone (1 min. to 9 hrs. 55 min.)
- Push button manual start of a program from control panel

### ON-SITE DIAGNOSTIC/TROUBLESHOOTING FEATURES

- Fault review displays all faults, including open and shorted zones
- Test function using on-board multi-meter
- Built-in valve locator
- Backtrack Stored Program™

### ADDITIONAL FEATURES

- Zone-to-zone delay
- Master valve timing sequence with zone valve programmable
- Master valve/pump start operation assignable On/Off by zone
- Clear program function
- Clear all function
- Grow-in program
- Two independently programmed master valves
- Normally open or normally closed master valve operation
- Real time milliamp display
- Flow sensor data review (requires SmartLink® Aircard)
- Real time flow display (requires SmartLink® Aircard)







## Smart Sprinkler Controller




### Control on your phone, not in your garage.

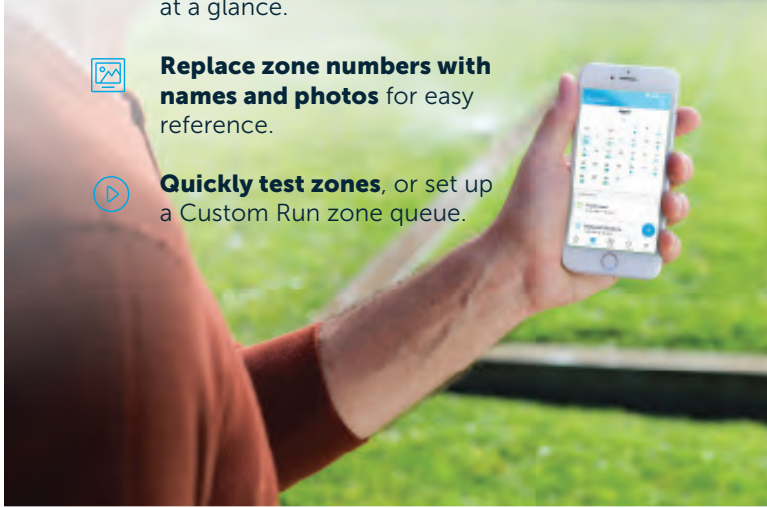
Make caring for your yard a delight, not a chore. Run your sprinkler system anytime, anywhere right from your smartphone.

 One touch to **run, pause and skip** between individual zones.


 Review **watering history and next scheduled runs** at a glance.


 **Replace zone numbers with names and photos** for easy reference.


 **Quickly test zones**, or set up a Custom Run zone queue.




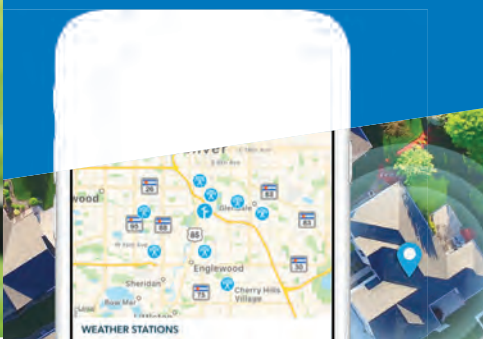
### Exclusive Weather Intelligence™ Plus.

 Pinpoints the forecast in your exact location.

 Uses comprehensive satellite, radar and weather station data from over 250,000 sources.

 Automatic hyperlocal schedule adjustments for rain, wind, or snow.

 Reduce your outdoor watering by up to 50% saving water and money.





## Take the guesswork out of watering.

Save water with Weather Intelligence™ Plus monitoring and schedule adjustments.

Customize with plant type, sun exposure and more.

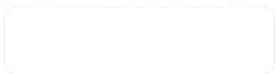
Train roots to be drought-resistant.

Use your smartphone to monitor and control from anywhere.

Create flexible schedules that meet your needs.

## The most-connected smart sprinkler controller.

Rachio 3 works with leading smart home platforms.



"Alexa, tell Rachio to water the backyard."

### EXCLUSIVE

## Rachio Wireless Flow Meter Compatibility

Rachio Wireless Flow Meter technology monitors outdoor water use, halts leaks and protects your landscape from damage.



## ESP-TM2 Fixed Station Controller

### ESP-TM2 Series Controllers

Rain Bird's ESP Series of controllers has been expanded to offer a contractor grade irrigation controller for residential and light commercial applications.

The ESP-TM2 Controller is available in four models suitable for indoor or outdoor applications (4-Station, 6-Station, 8-Station and 12-Station).

#### Applications

The ESP-TM2 provides flexible scheduling features to accommodate a wide variety of landscape applications. Plus powerful advanced irrigation features that help to meet any type of regional watering restrictions.

#### Easy to Use

The ESP-TM2 Controller is designed to be an easy to use, program-based controller with the familiar ESP user interface, a large LCD screen and universal icons on both the controller overlay and the LCD.

#### Easy to Install

The ESP-TM2 Controller requires only two screws for easy wall mounting. For professional installation, it has a guide for ½" or ¾" conduit to run field wires into the unit. A factory installed 6' pigtail offers a plug and play solution out of the box.

#### Controller Hardware

- Plastic wall-mount cabinet with door
- 4, 6, 8 or 12 station models
- Mounting screws with anchor shields
- Factory installed pigtail

#### Controller Features

- NEW large back-lit LCD display for improved visibility in low-light and direct sunlight conditions
- Familiar, easy to navigate user interface

- Rain sensor input with bypass capability
- Master valve/pump start circuit
- Nonvolatile (100 year) storage memory
- Electronic diagnostic circuit breaker
- Remote accessory port for Rain Bird approved accessory devices

#### Scheduling Features

- Program based scheduling with 3 individual programs and 4 independent start times per program for 12 total start times
- Watering schedule options: Custom Days of the week, ODD or EVEN calendar days, or Cyclic (every 1 – 30 days)

#### Advanced Features

- Manual Watering option for all stations, a single station or an individual program
- Seasonal Adjust applied to all programs or an individual program
- Delay Watering up to 14 days (applies only to stations set to obey Rain sensor)
- Permanent Days Off (for Odd, Even or Cyclic programming)
- Sensor bypass for all programs or for individual stations
- Adjustable delay between stations
- Contractor Default™ Program Save and Restore saved program(s)
- Master Valve on/off by station
- Automatic short detect with station specific alarm messages

#### Operating Specifications

- Station timing: 1 minute to 6 hours
- Seasonal Adjust: 5% to 200%
- Max operating temperature: 149°F (65°C)

#### Electrical Specifications

- Input required: 120VAC (±10%) @ 60Hz
- Output: 1A at 24VAC
- Master Valve/Pump Start Relay
- External battery back-up not required. Nonvolatile memory permanently saves the current programming and a 10 year life lithium battery maintains the controllers time and date during power outages.



#### Certifications

- UL, cUL, FCC Part 15b
- IP24
- WaterSense® certified with up to 30% water savings when installed with Rain Bird LNK™ WiFi Module and WR2 Rain Sensor. Meets EPA criteria for high-performing, water-efficient products.



#### Dimensions

- Width: 7.92 in. (20,1 cm)
- Height: 7.86 in. (20,0 cm)
- Depth: 3.51 in. (9,0 cm)

#### How To Specify:

##### ESP-TM2 Models

- TM2-4-120V
- TM2-6-120V
- TM2-8-120V
- TM2-12-120V





## Specifications

The ESP-TM2 Controller is a hybrid type combining electromechanical and micro-electronic circuitry. The controller shall be capable of fully automatic or manual operation. The controller shall be housed in a wall-mountable, weather resistant plastic cabinet with lockable door (lock not included).

The controller shall have 3 independent programs that allow 4 different start times per program. Firmware programming shall automatically stack multiple start times in sequence to prevent hydraulic overload. All programs shall run consecutively.

Watering day schedules shall be: Custom Days of the Week, Odd or Even calendar days and Cyclic (such as every 2 days, or every 3 days, etc.). When the dial is turned to the RUN DAYS position, the display shall indicate the active schedule type (Odd, Even, or Cyclic) for the selected program. Station run times shall range from 1 minute to 6 hours.

The controller shall have a 12-hour AM/PM and/or 24 hour mode clock with a midnight day change over. The controller shall have a 365-day calendar backed up against power interruptions by an internal lithium battery that shall maintain date and time for approximately 10 years.

The controller shall offer Manual Watering options including all stations, any single station or any individual program. When manual watering is triggered, the unit shall ignore the status of a rain sensor (if connected) and re-enable the sensor when manual watering is completed.

The controller shall be capable of bypassing a rain sensor (if connected) for each station independently.

The controller shall have a Seasonal Adjust feature to adjust the run time from 5% to 200% in 5% increments. Seasonal Adjust shall be capable of being applied to all programs simultaneously or to individual programs.

The controller shall have a Delay Watering feature that can override and suspend programmed watering for up to 14 days.

The controller shall have a Permanent Days Off feature that is available for Odd, Even, and Cyclic days programming. A day set to "Permanent Off" shall override the normal repeating schedule.

The controller shall be equipped with a variety of Special Features that can be accessed by turning the dial to the appropriate dial position and then pressing and holding both the left and right arrow (or back and next) keys simultaneously for 3 seconds.

### Special Features shall include:

- Set Interstation Delay
- Reset to Factory Defaults
- Rain Sensor Bypass by Station
- Save/Restore Programming
- Set Master Valve By Station

The controller shall provide the ability to clear all programming and reset to factory default settings if desired.

The controller shall provide a method for the operator to save an irrigation schedule into nonvolatile memory for future recall.

The controller shall be capable of operating one 24VAC solenoid valve per station plus a separate master valve or remote pump start relay.

The controller shall operate on 120VAC ( $\pm 10\%$ ) at 60Hz. If connected, a master valve or pump start shall operate on 24VAC at 60Hz.

The controller shall have an electronic diagnostic circuit breaker that can detect if a station has an electrical overload or short circuit condition. The controller shall then bypass the error detected station while continuing to operate all other stations.

The controller shall have a reset button to re-boot the factory default firmware, in case of controller interface "freezing" due to a power surge or interruption of power to the power supply.

The controller shall be upgradable to an EPA WaterSense approved smart controller without having to replace the cabinet, nor disconnect station modules.

The controller shall provide an option for the installer to run field wires through a  $\frac{1}{2}$ " or  $\frac{3}{4}$ " wire conduit fitting, allowing for a clean, professional installation.

The controller shall be compatible with Rain Bird's LNK WiFi Module, allowing wireless connectivity to the controller.

The controller shall be compatible with Rain Bird's LIMR (Landscape Irrigation Maintenance Remote) and have a 5-pin accessory port to communicate with Rain Bird approved expansion accessories.

### Suggested accessories for use with this controller:

- LNK WiFi Module (wireless connectivity)
- Rain Bird RSD Series Rain Sensors
- Rain Bird WR2 Wireless Rain/Freeze Sensors
- Rain Bird Landscape Irrigation & Maintenance Remote (Available in USA/Canada Only)
- All Rain Bird residential and commercial rotors, valves, nozzles, sprays and drip products

The ESP-TM2 controller shall be manufactured by Rain Bird Corporation in a NAFTA member country.

**Rain Bird Corporation**  
6991 East Southpoint Road  
Tucson, AZ 85756  
Phone: (520) 741-6100  
Fax: (520) 741-6522

**Rain Bird Technical Services**  
(800) RAINBIRD (1-800-724-6247)  
(U.S. and Canada)

**Rain Bird Corporation**  
970 West Sierra Madre Ave.  
Azusa, CA 91702  
Phone: (626) 812-3400  
Fax: (626) 812-3411

**Specification Hotline**  
1-800-458-3005 (U.S. and Canada)

**Rain Bird International, Inc.**  
1000 West Sierra Madre Ave.  
Azusa, CA 91702  
Phone: (626) 963-9311  
Fax: (626) 852-7343

*The Intelligent Use of Water™*  
[www.rainbird.com](http://www.rainbird.com)

## ESP-ME3 Modular Controller

### ESP-ME3 Series Controllers

America's favorite modular controller, the ESP-Modular is now WiFi and flow sensor compatible with new design and an enhanced feature set to provide contractors with the industry's most flexible irrigation controller solution. The ESP-ME3 Controller supports up to 22 stations, 4 programs and 6 start times.

#### Applications

The ESP-ME3 WiFi Compatible Controller provides flexible scheduling features that make the controller ideal for all your irrigation controller needs.

#### Easy to Use

The ESP-ME3 WiFi Compatible Controller was designed with ease of use in mind. The controller boasts the industry's largest back-lit LCD screen for its class and also incorporates universal icons on both the controller overlay and the LCD.

#### Easy to Install

The ESP-ME3 WiFi Compatible Controller mounts with as few as two mounting screws. A guide for 1/2" or 3/4" conduit fittings allows for professional installation of field wires into the cabinet. For larger field wire needs, remove the knockout for a 1" diameter opening.

#### Controller Hardware

- Plastic wall-mount case with door
- 4 station base module
- Mounting Screws
- Wire nuts for outdoor models

#### Controller Features

- Large LCD display with easy to navigate user interface
- Rain Sensor input with override capability
- Master Valve/pump start circuit
- Non-Volatile (100 year) storage memory
- Remotely Programmable under 9V battery power (not included)

#### Scheduling Features

- Program based scheduling allows 4 individual programs with 6 independent start times per program for 24 total start times
- Watering schedule options: By days of week, ODD calendar days, EVEN calendar days, or Cyclic (every 1 – 30 days)

#### Advanced Features

- Advanced diagnostics and short detection with LED alert
- Contractor Default™ Program Save/Restore saved program(s)
- Rain Sensor bypass by Station
- One Touch manual watering
- Delay Watering up to 14 days (applies only to stations not set to ignore Rain Sensor)
- Manual Watering option by program or station
- Seasonal Adjust applied to all programs or individual program
- Adjustable delay between valves (default set to 0)
- Master Valve on/off by station

#### Operating Specifications

- Station timing: 1 minute to 6 hours
- Seasonal Adjust: 5% to 200%
- Max operating temperature: 149°F (65°C)

#### Electrical Specifications

- Input required: 120VAC ± 10%, 60Hz (International models: 230VAC ± 10%, 50/60Hz)
- Output: 25.5VAC 1A
- Master Valve/Pump Start Relay  
Operating Voltage: 24VAC 50/60Hz  
Max Coil Inrush: 11VA  
Max Coil Holding: 5VA
- Idle/Off power draw 0.06 amps at 120VAC
- Power back-up not required. Nonvolatile memory permanently saves the current programming and a 10 year life lithium battery maintains the controllers time and date during power outages.



#### Certifications

- cULus [US and Canada], FCC Part 15b [US], CAN ICES-3(B)/NMB-3(B) [Canada], NOM [Mexico], CE [European Union], IRAM [Argentina], INMETRO [Brazil], IPX4, RCM [Australia and New Zealand], IP24.
- WaterSense® certified with up to 30% water savings when installed with Rain Bird LNK™ WiFi Module and WR2 Rain Sensor. Meets EPA criteria for high-performing, water-efficient products.



#### Dimensions

- Width: 10.7 in. (27,2 cm)
- Height: 7.7 in. (19,5 cm)
- Depth: 4.4 in. (11,2 cm)

#### How to specify your model:

##### ESP-ME3 WiFi Compatible Controller

###### 120V 4 station base controller

Indoor/Outdoor ESP4ME3

###### 230V (available in outdoor models only)

ESP4ME3EUR	230V markets except Australia
ESP4ME3AUS	230V Australia

###### Expansion Modules for all models

ESPSM3	3 station expansion module
ESPSM6	6 station expansion module



## Specifications

The ESP-ME3 Controller shall be capable of fully automatic or manual operation. The controller shall be housed in a wall-mountable, weather resistant plastic cabinet with a key-locking cabinet door suitable for either outdoor or indoor installation.

The controller shall include a base unit module with 4 stations as well as three expansion slots capable of receiving expansion station modules of either three or six stations to achieve total station capacity of up to 22 stations. The controller shall accept the modules in any configuration and shall not require the installation of a three station module in order to install a 6 station module.

Station run times shall range from 1 minute to 6 hours. The controller shall be set with a factory default start time of 8 AM and default run time of 10 minutes for the first 4 stations for Program A only.

The controller shall have a Seasonal Adjust feature to adjust the run time for all stations from 5% to +200% in 5% increments. Seasonal Adjust can be applied to all programs simultaneously or individually.

The controller shall have 4 independent programs that can have 6 different start times. The controller shall stack multiple start times in sequence to prevent hydraulic overload. All programs run consecutively.

The controller shall be capable of operating two 24VAC solenoid valves per station plus a master valve or remote pump start relay. The controller shall operate on 120VAC $\pm$  10% at 60Hz (230VAC  $\pm$  10% at 50Hz for international models). A master valve or pump start relay shall operate on 24VAC at 50/60Hz, Max Coil Inrush of 11VA and Max Coil Holding of 5VA.

Watering day cycles shall be: By Day of the week, Odd, Even and Cyclic (Every # day). Odd, Even, and Cyclic shall support permanent days off. A day set to "Permanent Off" shall override the normal repeating schedule.

The controller shall have an electronic diagnostic circuit breaker that shall sense a station with an electrical overload or short circuit and shall bypass that station and continue to operate all other stations. When an electrical condition exists that is preventing normal operation the red LED shall illuminate continuously and scroll a message across the LCD as to what the problem is. When an alert condition is present that is related to programming errors or flow detection, the red LED shall continuously blink and scroll a message.

The controller shall have a 12-hour AM/PM or 24 hour military (for 50Hz models) clock with a midnight day change over. The clock shall default to the time format based upon the power detected. The controller shall have a 365-day calendar backed up against power interruptions by an internal lithium battery that will maintain date and time for approximately 10 years.

The controller shall provide the user the ability to bypass the Rain Sensor or flow sensor for each station independently.

The controller shall be equipped with a variety of Special Features (SF) that can be accessed by turning to the appropriate dial position and pressing and holding the two arrow keys simultaneously for 3 seconds.

Special Features include:

- Rain Sensor Bypass by Station
- Flow Sensor Bypass by Station
- Permanent Days Off (Odd, Even, Cyclic only)
- Store/Restore Saved Programs
- Reset to Factory Defaults
- Set Inter-station Delay timing
- Set Master Valve operation by Station

The features above will be included on a Special Features Card included with every controller.

The controller shall offer manual watering of ALL stations or ONE station at a time. When manual watering is triggered, the unit shall ignore the status of the weather sensor (if connected) and re-enable the sensor when manual watering is completed.

The controller shall display on the LCD the message NO AC to indicate to the user when AC Power is not present (only if 9 volt battery is present).

The controller shall be compatible with Rain Bird's LNK WiFi Module, allowing wireless connectivity to the controller.

The controller shall be compatible with Flow Sensors, allowing for flow monitoring which can give alerts and skip automatically scheduled irrigation for problem stations.

The controller shall provide a method for the installer to save the irrigation schedule into non-volatile memory for easy recall later if unwanted schedule changes are made.

The controller shall provide a method for the installer to restore the schedule to the factory fresh condition in order to start programming from a "blank" state.

The controller shall provide a method to wire the controller through a 1/2", 3/4" and 1" wire conduit fitting to allow for a more professional installation.

The controller shall have a reset button to reset the controller in the case of micro-controller "lock-up" due to power surges or frequent interruption of power to the power supply.

The controller shall be upgradable to an EPA WaterSense approved smart controller without having to replace the cabinet, nor disconnect station modules.

Suggested accessories for use with this controller:

- LNK WiFi Module (wireless connectivity)
- RSD Series Wired Rain Sensors
- WR2 Series Wireless Rain Sensors
- All Rain Bird rotors, valves, nozzles, sprays and drip products

The controller shall be manufactured by Rain Bird Corporation in a USMCA member country.

**Rain Bird Corporation**  
6991 East Southpoint Road  
Tucson, AZ 85756  
Phone: (520) 741-6100  
Fax: (520) 741-6522

**Rain Bird Technical Services**  
(800) RAINBIRD (1-800-724-6247)  
(U.S. and Canada)

**Rain Bird Corporation**  
970 West Sierra Madre Ave.  
Azusa, CA 91702  
Phone: (626) 812-3400  
Fax: (626) 812-3411

**Specification Hotline**  
1-800-458-3005 (U.S. and Canada)

**Rain Bird International, Inc.**  
1000 West Sierra Madre Ave.  
Azusa, CA 91702  
Phone: (626) 963-9311  
Fax: (626) 852-7343

*The Intelligent Use of Water™*  
[www.rainbird.com](http://www.rainbird.com)



# X-CORE®

This simple irrigation controller offers optional on-site smart ET watering adjustments and handheld remote operation.

STANDARD CONTROLLERS

## KEY BENEFITS

- Number of stations:
  - 2, 4, 6, or 8 (fixed models)
- Solar Sync® accessory saves water based on local weather conditions
- Built-in key lock on outdoor models protects against vandalism
- 3 flexible programs with 4 start times each and up to 4-hour run times
- QuickCheck™ provides simple diagnostics of faulty field wiring
- Hide Programs setting shows 1 program and 1 start time for simplification
- Suspend irrigation up to 99 days during the off-season
- Short-circuit protection detects wiring faults and skips the station without system damage
- Easy Retrieve™ memory backs up the full irrigation schedule
- Delay Between Stations for slow-closing valves or pump recharge
- Cycle and Soak prevents water waste and runoff in areas with elevation changes or tight soils
- Seasonal adjustment for quicker schedule adjustments without changing run times

## OPERATING SPECIFICATIONS

- Transformer input: 120 VAC
- Transformer output (24 VAC): 1 A
- Station output (24 VAC): 0.56 A
- P/MV output (24 VAC): 0.28 A
- Sensor inputs: 1
- Approvals: Plastic IP54 (outdoor), UL, cUL, FCC, CE, RCM
- Warranty period: 2 years

X-CORE	
Model	Description
XC-200i	2-station indoor controller, 120V wall adapter
XC-400i	4-station indoor controller, 120V wall adapter
XC-600i	6-station indoor controller, 120V wall adapter
XC-800i	8-station indoor controller, 120V wall adapter
XC-400	4-station outdoor controller, 120V transformer and plug with plastic cabinet
XC-600	6-station outdoor controller, 120V transformer and plug with plastic cabinet
XC-800	8-station outdoor controller, 120V transformer and plug with plastic cabinet



**Plastic Indoor**  
Height: 6½"  
Width: 5¾"  
Depth: 2"



**Plastic Outdoor**  
Height: 8¾"  
Width: 7"  
Depth: 3¾"

Compatible with:



**Solar Sync Sensor**  
Page 136



**ROAM Remote**  
Page 127  
**ROAM XL Remote**  
Page 128



**Soil-Clik Sensor**  
Page 141



### EPA WaterSense

Add the WaterSense-labeled Solar Sync sensor to improve the water efficiency of this controller.



# PRO-C®

Simple programming and flexible station expansion make Pro-C the professional's choice for residential and light commercial systems.

## KEY BENEFITS

- Number of stations:
  - Modular Pro-C capacity from 4 to 16
  - Fixed PCC with 6- and 12-station options
- 3 independent irrigation programs (4 start times each) allow for customized scheduling
- 6-hour maximum station run time provides flexibility for differing application amount
- 1 sensor input available for use with Solar Sync® or any Klik sensors
- 1 P/MV output for pump start relay and master valve activation
- Dedicated Solar Sync dial position provides logic for smart water savings
- Easy Retrieve™ memory allows for manual backup and retrieval of preferred settings and programming
- QuickCheck™ provides simple diagnostics of faulty field wiring
- 3 independent lighting programs available for simultaneous irrigation and lighting control

## OPERATING SPECIFICATIONS

- Transformer input: 120 VAC
- Transformer output (24 VAC): 1 A
- Station output (24 VAC): 0.56 A
- P/MV output (24 VAC): 0.28 A
- Approvals: UL, cUL, FCC, CE, RCM
- Warranty period: 2 years

STANDARD CONTROLLERS



### Plastic Indoor

Height: 9"  
Width: 10"  
Depth: 4½"



### Plastic Outdoor

Height: 9"  
Width: 10"  
Depth: 4½"

PRO-C	
Model	Description
PCC-600i	Fixed 6-station, plastic indoor wall mount
PCC-600	Fixed 6-station, plastic outdoor wall mount
PCC-1200i	Fixed 12-station, plastic indoor wall mount
PCC-1200	Fixed 12-station, plastic outdoor wall mount
PC-400i	Modular 4-station base, plastic indoor wall mount
PC-400	Modular 4-station base, plastic outdoor wall mount

PC-SERIES STATION EXPANSION	
Modules	Description
PCM-300	3-station plug-in module
PCM-900	9-station plug-in module (maximum, one per controller)

Compatible with:



**Solar Sync  
Sensor**  
Page 136



**ROAM Remote**  
Page 127  
**ROAM XL Remote**  
Page 128



**PXSUNC  
Accessory**  
Visit [fxl.com](http://fxl.com)



### EPA WaterSense

Add the WaterSense-labeled Solar Sync sensor to improve the water efficiency of this controller.

# ICC2

This reliable control system can run conventional, two-wire, or hybrid operations with the option to upgrade to Centralus™ cloud-based control.

## KEY BENEFITS

- Number of stations:
  - Conventional: 8 to 38 (plastic), 8 to 54 (metal and pedestals)
  - With two-wire EZDS: up to 54 (all enclosure options)
- 4 independent irrigation programs (8 start times each) allow for customized scheduling
- 12-hour maximum station run time provides flexibility for low-flow zones
- Any 2 programs can operate simultaneously, providing more efficient watering
- 1 sensor input available for use with Solar Sync® or any Klik sensors
- 1 P/MV output for pump start relay and master valve activation
- Backward compatibility to original ICC controllers allows for quick updates to older systems
- Upgradeable to Centralus software for web-based central control options

## OPERATING SPECIFICATIONS

- Transformer input: 120/230 VAC
- Transformer output (24 VAC): 1.4 A
- Station output (24 VAC): 0.56 A
- P/MV output (24 VAC): 0.56 A
- Approvals: Wall Mounts IP44, Plastic Pedestal IP34, NEMA 3R, UL, cUL, FCC, CE, RCM
- Warranty period: 5 years

## USER-INSTALLED OPTIONS

- WIFIKIT or LANKIT communications for Centralus web-based control
- Compatible with Flow-Clik® sensor for catastrophic high-flow shutdown see [page 140](#)

ICC2	
Model	Description
I2C-800-PL	8-station base model, plastic outdoor wall mount
I2C-800-M	8-station base model, gray metal outdoor, wall mount
I2C-800-SS	8-station base model, stainless steel, wall mount
I2C-800-PP	8-station base model, plastic pedestal
ICC-FPUP2	ICC2 retrofit kit for original ICC controllers
ICC-PED	Gray pedestal for metal wall mount
ICC-PED-SS	Stainless steel pedestal for stainless wall mount
ICC-PWB	Optional pedestal wiring board for metal pedestals

ICC2 SERIES STATION EXPANSION	
Model	Description
ICM-400	4-station plug-in module with enhanced surge suppression
ICM-800	8-station plug-in module with enhanced surge suppression
ICM-2200	22-station expansion module (one per controller)
EZ-DM	54-station decoder output module (one per controller)
EZ-1	Single-station EZ decoder



**Plastic**  
Height: 12"  
Width: 13¾"  
Depth: 5"

**Metal**  
(gray or stainless steel)  
Height: 16"  
Width: 13"  
Depth: 5"



**Metal Pedestal**  
(gray or stainless steel)  
Height: 36"  
Width: 11½"  
Depth: 5"



**Plastic Pedestal**  
Height: 39"  
Width: 24"  
Depth: 17"

CENTRALUS CONTROLLERS

Compatible with:



**Solar Sync Sensor**  
[Page 136](#)



**ROAM Remote**  
[Page 127](#)  
**ROAM XL Remote**  
[Page 128](#)



**EZ Decoder System**  
[Page 124](#)



**EPA WaterSense**  
Add the WaterSense-labeled Solar Sync sensor to improve the water efficiency of this controller.



# MP ROTATOR

APPLICATION  
Residential/Commercial

RADIUS  
8' to 30'

[www.hunterindustries.com/MP](http://www.hunterindustries.com/MP)

## MP ROTATORS SAVE MORE WITH 30% INCREASED EFFICIENCY OVER SPRAYS.

### FEATURES

- True matched precipitation any arc or radius setting
- Radius can be reduced up to 25% on all models
- Color-coded for easy identification
- Double-pop feature keeps dirt and debris out of nozzle
- Removable filter screen prevents large objects from clogging nozzle
- Low precipitation rate
- Wind-resistant multi-stream technology
- Adjustable arc and radius offer timely and precise settings

### ADVANCED FEATURES

- Ratchet mechanism prevents damage when attempting to reduce radius too far
- Models can only be adjusted while water is running

### OPERATING SPECIFICATIONS

Recommended operating pressure: 40 PSI

Models can only be adjusted while water is running

### OPTIONS

Pair with Pro-Spray PRS40 to achieve pressure regulation at the head of 40 PSI  
Adding "HT" will specify male threaded nozzles



#### MP1000 8' to 15' radius



**MP100090** 90° to 210°  
**MP1000210** 210° to 270°  
**MP1000360** 360°

#### MP2000 13' to 21' radius



**MP200090** 90° to 210°  
**MP2000210** 210° to 270°  
**MP2000360** 360°

#### MP3000 22' to 30' radius



**MP300090** 90° to 210°  
**MP3000210** 210° to 270°  
**MP3000360** 360°

#### MP STRIPS



**MPLCS515** Left Corner 5' x 15'  
**MPRCS515** Right Corner 5' x 15'



**MPSS530** Side Strip 5' x 30'  
**MPCORNER\*** Corner 8' to 15'

\* Applies additional water first 3' from the pop-up when head to head coverage is not available

## SPECIFICATIONBUILDER

### MODELS

MP1000-90 = 8' to 15' radius, adjustable from 90° to 210°  
MP1000-210 = 8' to 15' radius, adjustable from 210° to 270°  
MP1000-360 = 8' to 15' radius, 360°

MP2000-90 = 13' to 21' radius, adjustable from 90° to 210°  
MP2000-210 = 13' to 21' radius, adjustable from 210° to 270°  
MP2000-360 = 13' to 21' radius, 360°

MP3000-90 = 22' to 30' radius, adjustable from 90° to 210°  
MP3000-210 = 22' to 30' radius, adjustable from 210° to 270°  
MP3000-360 = 22' to 30' radius, 360°

MPLCS515 = Left corner strip 5' x 15'

MPRCS515 = Right corner strip 5' x 15'

MPSS530 = Side strip 5' x 30'

MPCORNER = 8' to 15' radius, adjustable from 45° to 105°

### OPTIONS

(blank) = No option  
HT = Male thread version

(MP Rotators are designed to operate in conjunction with a pop-up sprinkler or shrub adapter.)

### EXAMPLE

**MP1000-210** 8' to 15' radius, adjustable from 210° to 270°

**Hunter**<sup>®</sup>



## HE-VAN Series Nozzles

### Save Water and Money

- HE-VAN's even coverage reduces run times by up to 35% while still maintaining a healthy lawn.
- Just like changing to a low-flow shower head, homeowners can save water by upgrading to HE-VAN nozzles.

### Superior Coverage

- HE-VAN nozzles have a unique stream pattern, designed for superior coverage and wind resistance.
- Other nozzles produce un-even edges and throw water past the stated radius. HE-VAN nozzles throw to the exact specified radius for the cleanest edge of any VAN on the market today.

### 80+ Years of Experience

- Since 1933, Rain Bird has worked continuously to create products that help save water.
- Our legacy of products started with development of the impact sprinkler, the first plastic MPR nozzle, U-Series nozzles and most recently the HE-VAN series of high efficiency nozzles.
- Rain Bird has been awarded more than 450 patents, many centered on water conservation and maximizing irrigation efficiency.

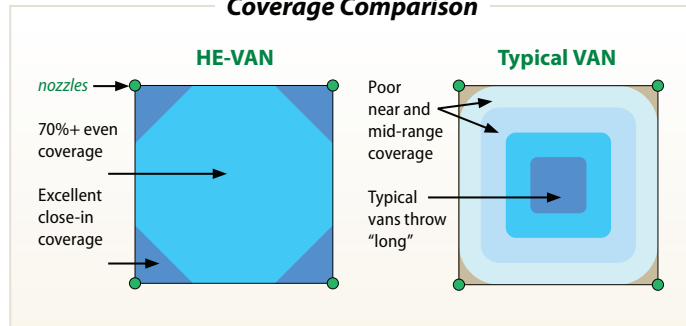
### Upgrade Example

- The material cost to upgrade a typical 8 spray zone to HE-VAN is less than \$13.52.
- Per the example below, HE-VAN nozzles can save 17,672 gallons of water per year. That's a 30% savings!

Comparison Chart	Typical Nozzles	HE-VAN Nozzles
No. of Spray Zones	4	4
No. of Spray Nozzles (Total)	32	32
Run-time Per Zone (Min.)	10	7
Gallons Used Per Year	58,906	<b>41,234</b>

1. 12' HE-VAN vs. typical VAN (30 PSI, 180° arc , every 3 days watering).
2. Superior coverage = Water savings.

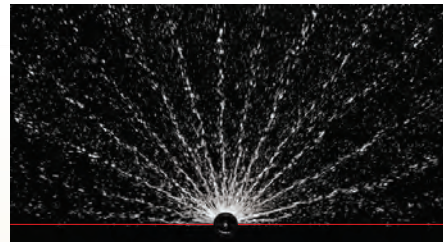
### Coverage Comparison



### Pattern Comparison

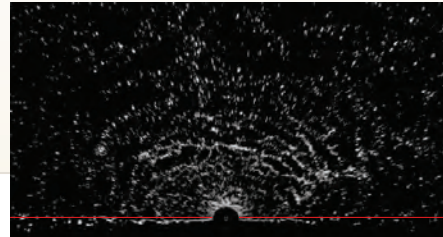
#### HE-VAN 15

Unique wind resistant pattern with clean edges



#### HUNTER PRO ADJUSTABLE 15A

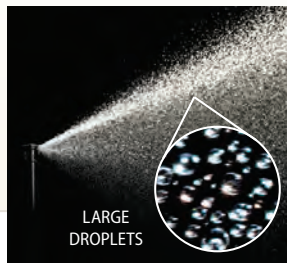
Typical nozzles have over-spray, waste water and cause run-off



### Wind Resistance and Throw Comparison

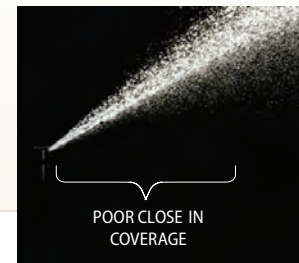
#### HE-VAN 15

Visibly larger water droplets reduce wind-drift



#### HUNTER PRO ADJUSTABLE 15A

Typical variable arc nozzles throw "long"



\* HUNTER and PRO ADJUSTABLE are trademarks of HUNTER INDUSTRIES

### R-VAN Adjustable Rotary Nozzles

High Efficiency, Multi-Stream

Rain Bird® R-VAN Adjustable Rotary Nozzles save more water, are easier to use, and are lower priced compared to leading rotating nozzles. R-VANs thick streams and large water droplets cut through the wind to deliver water where you want it. R-VANs are easier to use thanks to its hand-adjustable arc and radius. R-VANs are also 23% lower list priced and require half the SKUs to achieve 45° to 360° coverage vs. the leading rotating nozzle brand.

#### Features

- Matched precipitation across radius, arcs, and pattern types
- Low precipitation rate reduces run-off and erosion
- Adjust arc and radius without tools
- A pull-up to flush feature clears the nozzle of dirt and debris

- Color coded and laser marked for easy identification of R-VAN model
- Maintains efficient performance at high operating pressures without misting or fogging
- Compatible with all models of Rain Bird spray bodies, risers and adapters
- Installing with Rain Bird 5000 MPR Series Rotors allows for matched precipitation from 8' to 35' (2.4m to 10.7m)
- Three year trade warranty

#### Operating Range

- Pressure Range: 30 to 55 psi (2.1 to 3.8 bar)
- Recommended Operating Pressure: 45 psi (3.1 bar)
- Spacing: 8' to 24' (2.4 to 7.3m)
- Adjustments: Arc and radius should be adjusted while water is running

#### Models

- **8' - 14' (2.4 to 4.6m):**
  - R-VAN14: 45° - 270° Adjustable Arc
  - R-VAN14-360: 360° Full Circle
- **13' - 18' (4.0 to 5.5m):**
  - R-VAN18: 45° - 270° Adjustable Arc
  - R-VAN18-360: 360° Full Circle
- **17' - 24' (5.2 to 7.3m):**
  - R-VAN24: 45° - 270° Adjustable Arc
  - R-VAN24-360: 360° Full Circle
- **Strip Nozzles:**
  - R-VAN-LCS: 5' x 15' (1.5 x 4.6m) Left Corner Strip
  - R-VAN-RCS: 5' x 15' (1.5 x 4.6m) Right Corner Strip
  - R-VAN-SST: 5' x 30' (1.5 x 9.1m) Side Strip



## WVWD Water Use Efficiency (WUE) Strategic Plan - Conservation Measures



### COMMERCIAL

- Install High Efficiency Fixtures in Government, School & Commercial Buildings
- Commercial Incentive Program
- Indoor CII Survey
- High Efficiency Toilet & Urinal Bulk Purchase
- High Efficiency Urinal Incentive
- Pool & Spa Cover Incentive (SF, MF, COM)



### IRRIGATION

- Outdoor Water Audit - Large Landscape
- Financial Incentives for Irrigation & Landscape Upgrades
- Landscape Conversion or Turf Removal - SF
- Landscape Conversion or Turf Removal - MF, CII
- Exterior Retrofit Irrigation Program (E-RIP)



### RESIDENTIAL

- Residential Water Surveys
- Leak Repair & Plumbing Emergency Assistance
- High Efficiency Fixture Giveaway
- High Efficiency Toilet Incentive
- Residential Washer Incentive
- SF High Efficiency Toilet Giveaway



### CODES AND PARTNERSHIPS

- Landscape & Irrigation Codes
- Require New Development Multi-Unit Submetering
- Require Fixture Retrofit on Resale, Account Change, or Renovation
- Require Hot Water on Demand
- Partnership with Energy Utilities



BOARD OF DIRECTORS

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Matthew H. Litchfield, P.E.

March 9, 2021

Erik Hitchman  
General Manager  
Walnut Valley Water District  
271 S. Brea Canyon Road  
Walnut, CA 91789

**RE: Support for Walnut Valley Water District's Project and Application to the U.S. Bureau of Reclamation WaterSMART – Small-Scale Water Efficiency Projects**

Dear Mr. Hitchman,

On behalf of Three Valleys Municipal Water District, we would like to express our support for Walnut Valley Water District's (WVWD) Exterior Retrofit Irrigation Program (E-RIP) Phase 2, and its application for funding from the U.S. Bureau of Reclamation WaterSMART- Small-Scale Water Efficiency Projects.

The E-RIP Phase 2 project will provide WVWD customers with an opportunity to improve the effectiveness of their irrigation systems. By offering this project to its customers, WVWD will provide much needed technical assistance and funding to repair irrigation system leaks, educate the participants in water use efficiency, and ultimately reduce residential water waste.

Building on the success of the pilot study conducted in 2020, which resulted in a 13% reduction in water use for the project participants, E-RIP Phase 2 will be offered to an expanded list of WVWD customers.

Three Valleys Municipal Water District strongly supports Walnut Valley Water District's application for its E-RIP Phase 2 project. We are confident that the grant funding would allow WVWD to continue to improve water efficiencies in its service area.

Sincerely,

A handwritten signature in blue ink, appearing to read "M. Litchfield", is positioned above the printed name.

Matthew Litchfield  
General Manager





THE METROPOLITAN WATER DISTRICT  
OF SOUTHERN CALIFORNIA

Office of the General Manager

March 18, 2021

Erik Hitchman  
General Manager  
Walnut Valley Water District  
271 S. Brea Canyon Road  
Walnut, CA 91789

Support for Walnut Valley Water District's Project and Application to  
the U.S. Bureau of Reclamation WaterSMART – Small-Scale Water Efficiency Projects

Dear Mr. Hitchman:

On behalf of Metropolitan Water District, we would like to express our support for Walnut Valley Water District's (WVWD) Exterior Retrofit Irrigation Program (E-RIP) Phase 2, and its application for funding from the U.S. Bureau of Reclamation WaterSMART- Small-Scale Water Efficiency Projects.

The E-RIP Phase 2 project will provide WVWD customers with an opportunity to improve the effectiveness of their irrigation systems. By offering this project to its customers, WVWD will provide much needed technical assistance and funding to repair irrigation system leaks, educate the participants in water use efficiency, and ultimately reduce residential water waste.

Building on the success of the pilot study conducted in 2020, which resulted in a 13 percent reduction in water use for the project participants, E-RIP Phase 2 will be offered to an expanded list of WVWD customers.

Metropolitan Water District strongly supports Walnut Valley Water District's application for its E-RIP Phase 2 project. We are confident that the grant funding would allow WVWD to continue to improve water efficiencies in its service area.

Sincerely,

A handwritten signature in black ink, appearing to read "William P. McDonnell".

William P. McDonnell  
Manager, Water Use Efficiency

# WALNUT VALLEY WATER DISTRICT



## RESOLUTION NO. 03-21-678

### **A RESOLUTION OF THE WALNUT VALLEY WATER DISTRICT BOARD OF DIRECTORS AUTHORIZING THE GENERAL MANAGER, OR DESIGNEE, TO APPLY FOR, RECEIVE, AND ENTER INTO A COOPERATIVE AGREEMENT, AND ADMINISTER A GRANT FOR THE 2021 BUREAU OF RECLAMATION SMALL-SCALE WATER EFFICIENCY GRANT PROGRAM**

**WHEREAS**, the Walnut Valley Water District ("District") is a California water district formed under Division 13 of the California Water Code (Water Code Sections 34000 et seq) and is an eligible entity having water delivery authority that is qualified to receive financial assistance under applicable governmental programs; and

**WHEREAS**, the U.S. Department of the Interior, Bureau of Reclamation, Policy, and Administration ("Bureau of Reclamation") requires Governing Body approval for submission of an application for available Small-Scale Water Efficiency Grants; and

**WHEREAS**, the District's Board of Directors ("Board") desires to authorize the District General Manager or his designee, to sign and file, for and on behalf of the District, a Small-Scale Water Efficiency Grant Application ("Application") for a grant from the Bureau of Reclamation in an amount not to exceed \$75,000; and

**WHEREAS**, the District has the capability to provide the amount of funding and/or in-kind contribution that it is required under the funding plan to provide, as detailed in the Application; and

**WHEREAS**, the General Manager, or his designee, will negotiate and execute a grant and any amendments or change orders thereto on behalf of the District and will work with the Bureau of Reclamation to meet established deadlines for entering into a cooperative agreement and to comply with any and all other Bureau of Reclamation requirements; and

**WHEREAS**, the grant funding potentially available through this application will be used to fund the District's Exterior Retrofit Irrigation Program (E-RIP) Phase 2 offered to District customers with the goal of increased water savings and the advancement of a water-efficient lifestyle.

#### **NOW, THEREFORE, BE IT RESOLVED,**

1. That an application for the District to receive grant funding as specified in the foregoing recitals shall be submitted to the Bureau of Reclamation for consideration during their 2021 funding cycle for Small-Scale Water Efficiency Grants.
2. That the District's General Manager or his designee, is hereby authorized to sign and file, for and on behalf of the District, the Application for a grant from the Bureau of Reclamation, as referenced in Section 1, above, in an amount not to exceed \$75,000.
3. That the Board, approves the Bureau of Reclamation grant application for the E-RIP Phase 2 project with the intent to enter into a grant agreement with the receipt of a financial assistance award from the Bureau of Reclamation.

**PASSED AND ADOPTED** by the Board of Directors of the Walnut Valley Water District, at a regular monthly board meeting held on Monday, March 15 of 2021.

AYES: Hayakawa, Hilden, Kwong, Lee, Tang  
NOES: None  
ABSENT: None  
ABSTAIN: None

/s/Scarlett P. Kwong

President

Board of Directors

ATTEST:

/s/Erik Hitchman

Secretary