

FAIRFAX WATER CONSERVATION PROGRAM PROPOSAL

DRAFT

Submitted by

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Development of this proposal was in collaboration with Marin Water

Supported by:

Board of Directors, Marin Water (Requested)

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THE WATER EMERGENCY

The water supply for the town of Fairfax, California is vastly diminished due to drought. With roughly 7,500 inhabitants, Fairfax uses an estimated 939,672 gallons of water per day (based on district-wide per capita consumption from Marin Water). Precipitation in the 2021 winter season yielded a mere 38-40% of the average. The local system of reservoirs, which supplies 75% of the county's water, are at 42% of capacity (as of 7-19-21) compared to the average 81% of capacity for this time of year (source: Marin Water). Marin Water typically gets the remaining 25% of its needs from contracts with Sonoma's Russian River supply. But this year, Sonoma is also under drought and is not contracting any of its water out of the county.

Projecting an inadequate supply of water in its reservoirs, Marin Water is examining the possibility of pumping water through a pipeline across the Richmond Bridge (as they did for a previous drought many years ago) and is also considering the construction of a costly desalination plant. Before significant time- & cost-intensive construction projects are undertaken, new and innovative ways to conserve and reuse water are needed. As climate change models predict ever hotter and drier conditions in this region, more must be done to increase water conservation in Fairfax and across the entire County—not just to meet human needs but also to provide a secure supply for the entire ecosystem. And to create more long-term climate resilience in the face of worsening conditions.

Marin Water offers a broad spectrum of different conservation strategies and programs to increase water awareness and reduce water demands. The current call to action to address this historic drought is a 40% district-wide reduction in water demands. To help meet its ambitious goal, the Fairfax Water Conservation Program can take a localized, focused effort to influence the reduction in water demands and increase participation in Marin Water's incentive programs. Due to the increased participation in programs the utility cannot offer very personalized attention to its 191,000 users (61,000 accounts) spread across 11 towns. Their approach is generally to offer a suite of different conservation options and to respond to interested parties.

PROGRAM PROPOSAL

The Fairfax Water Conservation Program (FWCP) aims to build on the programs offered by Marin Water to dramatically increase the adoption of water conservation strategies among the residents

and businesses of Fairfax, and beyond. By building a successful and effective system for streamlining adoption, we will create a model that could expand across the water district, and perhaps Marin County and the entire state. This pilot program would be an extremely localized and hands-on approach that provides direct interaction with residents and businesses--in critical ways that Marin Water does not have the bandwidth to support in the timeline dictated by the emergency situation created by this drought.

While this program is focused exclusively on Fairfax, it is created with extensibility to other towns in mind. There is an opportunity for each town to embrace water conservation strategies and provide the benefits of a networked community to share ideas/strategies/resources/marketing materials that can help meet our collective goals and create more resilient conditions for an uncertain future.

The Fairfax Water Conservation Program will fundamentally be structured to coordinate and manage a neighbor-helping-neighbor approach using a team of trained volunteers -- a “Water Warrior” Corps—that will assist with home water audits, engage directly with residents and businesses to facilitate adoption of conservation measures, help with low-water use garden ideas and more. To date, there has already been interest in the community to participate. In addition, the program will offer rebates for conservation measures (eg greywater, rainwater catchment) that will further enhance adoption.

Water Conservation Strategies

The goal of this program is to build on Marin Water’s effective conservation measures by creating higher adoption rates in our town. This will help the District meet its ambitious goal of a 40% reduction in water consumption across the region. Using a very hands-on, personalized and highly localized approach that is not possible from a large water utility company, we will focus on 6 program areas:

1. **Greywater** (or graywater) is relatively clean waste water from kitchen appliances, sinks, baths/showers, and washing machines. Reusing greywater for irrigating gardens directly reduces the consumption of limited potable water supplies. Various methods can be used to collect greywater, including very low tech solutions like placing buckets in showers to capture water, basins in kitchen sinks to capture water from rinsing vegetables or washing dishes, and outdoor showers that drain to non-edible gardens; to higher tech solutions such as Laundry to Landscape valves that divert washing machine water to the garden, and complex whole house systems. Such systems can range in cost from free to several thousands of dollars, depending on site conditions.

A California study in 2012 found that installing greywater systems saved 17 gallons / day per person (14,565 gallons a year) or 68 gallons per household for a family of 4. Using greywater also reduces energy consumption, as the water is not pumped from supply to the household (pumping water is actually a significant source of California’s carbon / energy footprint).

FWCP Actions: *The FWCP will proactively reach out to residents and businesses, providing education, home consultations provided by the Water Warriors team, information*

on eligible greywater-related rebates, discounted materials and/or delivery of MW materials, and workshops. Locations that require a more indepth assistance will be directed to MW or other valuable resources.

2. **Rainwater Harvesting** entails the collection of rainwater, rather than allowing it to run off. Rainwater is collected from roofs and channeled to a tank or cistern, where it can be used for irrigation or toilet flushing. This reduces the need to use potable water for things that don't need potable water. It also reduces overall carbon footprint by reducing the need to pump water to the home. The general rule of thumb is that for every 1,000 sf of rooftop, one can collect about 600 gallons *per 1" of rainfall* (Fairfax's rainfall is roughly 32"/year, which means a 1,000 sf rooftop could generate $600 \times 32 = 19,200$ gallons). For example, in Japan a big sports stadium collects rainwater for toilet flushing. The Frankfurt Airport in Germany collects rainwater for irrigation and toilet flushing. An organization in Virginia uses rainwater from the roof of a laundry facility in the washing machines.

FWCP Actions: *The FWCP will proactively reach out to residents and businesses, providing education, home consultations provided by the Water Warriors team, rainwater-related rebates, discounted materials and/or delivery of MW materials, and workshops.*

3. **Home Conservation Strategies** include many efforts focused on getting people to consider every gallon of water used in the home—from doing dishes, to using appliances with water in mind, to limiting showering, to reusing water wherever possible and most importantly educating customers on how to read their water meter to check for leaks and further understand their water use.. Ideally, we can get people thinking about their water use with the same level of intention as they think about trash and recycling.

FWCP Actions: *A team of volunteer Water Warriors will provide free home consultations, sharing and delivering water conservation tools directly to the home, assisting users in accessing MW resources like turf conversion to low water use plant material, greywater strategies, and more.*

4. **Low-Water Use Gardening** can significantly reduce water consumption for each water account. Water use in the region doubles during the summer months due to irrigation, which demonstrates the opportunity to obtain long term water savings as a result of converting high water use plants to drought tolerant, low water use plan material. Strategies include using efficient irrigation solutions, site management, transitioning to water efficient plants and how to keep them alive during droughts are all opportunities to educate and inform residents of ways to save water while maintaining a beautiful landscape.

FWCP Actions: *The program proposes to again, use a neighbor-helping-neighbor strategy (Water Warriors team) to share knowledge and resources on gardening during times of drought. For many gardeners, this will be an incredibly useful service.*

5. **Reducing Consumption Among Large Local Commercial/Institutional Users**

Large commercial & institutional users of water include Recreational Facilities, Restaurants, Laundromats, Car Washes, and Schools. Such businesses are inherently preoccupied with their operations and finances and have very few resources to consider exploring new processes and equipment.

FWCP Actions: *Our program will reach directly out to decision makers at these businesses, connect them to Marin Water’s conservation options, and help them outline a plan for reducing water consumption (working in conjunction with Marin Water as needed). Wherever possible, we will facilitate the adoption of rainwater harvesting and other water saving equipment available through Marin Water’s rebate programs.*

6. **Turf Removal** is a priority MW conservation measure that incentivizes homeowners to remove high water demand grass lawns from their properties. Currently, Marin Water pays customers \$3/sq ft for turf removal. It is estimated that every square foot of grass removed results in 24 gallons per year saved. So a property that removes 1,000 sq ft of grass saves 24,000 gallons per year.

FWCP Actions: *The FWCP marketing and educational materials will encourage residents to take advantage of MW’s program and socialize the idea that green lawns are out of favor. Much of our efforts in this component will rely on increasing public awareness about MW’s generous incentives, its Mulch Madness Program, and the huge impact turf removal has on water savings. After lawn removal, the Water Warriors will assist with low water garden ideas and support them as part of the Low-Water Gardening program component.*

Strategies for each program component will include:

- **Education and Home Consultations:** The Water Warrior Corps will be a core mechanism to do home consultations, regular tabling downtown and help community members reduce water use. The program will use social media, mailers and posters, promote monthly online zoom webinars, and create a Resource List of Qualified Local Contractors who have installed water conservation systems (greywater, rainwater catchment, etc).

Our team will visit households and provide a simple report detailing various water conservation measures, including specific rainwater catchment and greywater options (from simple things like using buckets in the shower and basins in the kitchen sink for use on gardens, to more involved strategies that require plumbing like outdoor showers that drain to non-edible gardens, rainwater catchment, etc). With good followup and facilitating connections to contractors and equipment, we will aim to get very high adoption rates.

- **Rebates** for water conservation equipment, including greywater, rain catchment, water flume meters, etc. These would be additional rebates beyond what Marin Water offers, that would make adoption even easier for residents.
- **Outreach to Businesses/Institutions** to educate them about Marin Water’s conservation options, connect them to MW resources, and provide logistical support for implementation if needed
- **Demonstration Projects / Garden Tours** to show real examples in the community.
- **Evaluation & Tracking** program impacts, water warrior site visits, including # installations, estimation of water saved (and money saved by the participant)

PROGRAM GOALS (see attached Impact Projections worksheet)

- Increase residential, commercial & institutional adoption of water conservation strategies to 30% of Fairfax customers employing at least one method.
- Increase public awareness of water conservation strategies to 80%.
- Free home consultations for at least 20% of households (670 of the 3,350 households)
- Reduce water consumption in Fairfax by at least 20 million gallons per year.
- Become a pilot program that becomes more widely adopted throughout Marin County and the rest of California. Make materials available to facilitate the adoption of our program.

PROGRAM BENEFITS

- Save at least 20 million gallons of water per year in Fairfax per year
- Save at least xx millions of gallons of water in lifetime savings.
- Increase public awareness about the need for water conservation & greywater adoption
- Build a more resilient community to address the likelihood of ongoing water shortages
- Create a more sustainable environment for the wildlife and ecology of our watershed (more water available for environmental releases)
- Create a model for implementing a town-wide action program that can be adopted by other towns in Marin and the rest of the state
- Reduce our Carbon Footprint from reduced need for pumping water
- Help reduce the need for much more costly Richmond pipeline or desalination plant
- Save money (for residents and businesses)
- Create jobs (program personnel and contractors/plumbers/irrigation specialists)

IMPLEMENTATION COMPONENTS (1 year)

Education (ongoing)

- Create a volunteer team of “Water Warriors” trained by MW and other experts who can perform home water consultations and mentor their neighbors
- Regular water conservation zoom webinars to introduce people to strategies and to the new Water Conservation Program (coordinated with Marin Water and other towns; create a master calendar of water conservation educational opportunities)
- Distribute posters and postcards to residents and businesses
- Table at public events such as the Farmers Market, in public space (eg Good Earth)
- Create and distribute a list of local contractors/plumbers/irrigation specialists experienced with greywater and rain catchment installations

Home Consultations & Installations

- Perform free water conservation audits for up to 20% of households in Fairfax (670 households). This is approximately 3 per business day for 12 months.
- Provide rebates for greywater/rain catchment installations, with the goal of getting up to 30% adoption rate of at least one new conservation strategy.
- Proactively drive adoption of Marin Water’s conservation measures among commercial and institutional water users in Fairfax (recreational facilities, schools, town hall); with the goal of getting up to 30% of businesses/institutions adopting at least one new water conservation strategy.

Program Tracking and Evaluation

Throughout the project, our team will evaluate and report on our processes and track progress for public review. A final report will be included in September 2022. Metrics include:

- Estimated water savings (gallons/year)
- Estimated water savings per Lifetime (gallons)
- Determine the community-wide gallons per capita per day reduction
- # households who receive a water conservation audit
- # of people reached with public awareness campaigns through our efforts
- # households who adopt at least one new water conservation strategy
- # of businesses who adopt at least one new water conservation strategy
- Estimated impact on carbon footprint by reducing need for pumped water
- Cost savings from reduced water bills per participant

TEAM

This program will be managed by Sustainable Fairfax, a 501c3 which has implemented various conservation programs for the Town in the past.

There will be two full time equivalents (FTEs - or 80 hours of staff time) to run this program:

Program Manager (likely 1 FTE)

- Program administration
- Oversee Field Manager and Communications Manager
- Main liaison with Marin Water and the Town of Fairfax
- Strategic partnerships with state and local agencies, local nonprofits
- Program tracks and reporting

Field Manager (Part time)

- Contractor coordination
- Audit coordination
- Training mentors for home audits
- Works with businesses (e.g., Fairfax Lumber) on conservation supplies

Education & Communications Manager (Part time)

- Social media and outreach
- Event coordination
- Creation of educational materials: emails, posters, postcards, etc
- Strategic partnerships with state and local agencies around messaging and education

RESOURCES REQUIRED

Personnel: up to 2 FTEs

Funding (includes personnel): Estimated \$253,750

STRATEGIC PARTNERS

- Sustainable Fairfax
 - Program management
 - Contracted staff
 - Implementation
 - Quarterly reporting to town

- Town of Fairfax
 - Secure funding and allocation
 - Review quarterly reports from program manager
 - Permitting process (where applicable)

- Marin Water
 - Program Support (marketing, webpage support for customized pages),
 - Training Field Manager [who in turn will train Water Warrior Corps]
 - Water data tracking support
 - Report on program participation in Fairfax (monthly)
 - Water conservation supplies (e.g.hose end nozzles, low flow hardware, buckets)

- Local Water Conservation Resources and Expertise
 - Greywater Action
 - Backyard Farmer, Fairfax Lumber (to provide bundles and discounts?)
 - Local Contractors
 - Marin County Health Department
 - WaterNow Alliance
 - Daily Acts