Making It Their Choice
When a Community Loves Water Recycling

Mark Millan
May 17, 2018
A Dynamic Town
With a Vision
Awards

The Green California Leadership Awards

North Bay Business Journal’s Healthiest Companies in the North Bay

Climate Action Champions

green TECHNOLOGY

American Planning Association California Chapter

Making Great Communities Happen

ACEEE American Council for an Energy-Efficient Economy

EPA WaterSense 2015 Partner of the Year

rcpA Regional Climate Protection Authority

Windsor Sustainable Business of the Year

2016 Safest Cities California SafeWise

Bicycle Friendly Community Fall 2012 The League of American Bicyclists
Future....

SMART TRAIN & PATHWAY PROJECT

OVERVIEW

WHAT IS SMART?
SMART is a voter-approved passenger rail and bicycle-pedestrian pathway project located in Marin and Sonoma counties. It will serve a 70-mile corridor from Larkspur to Cloverdale, with a first phase from San Rafael to Santa Rosa.

SMART will connect residents and visitors with jobs, education, recreation and services.

Today, more than 75% of commuters in the North Bay travel either within or between the two counties to get to work. And the North Bay draws visitors from all over the world seeking a variety of recreation and leisure activities.

The SMART train and pathway provide options to get out of your car to get where you need to go, for work or for fun — and to do work or have fun along the way.

And for every driver who leaves a car behind, traffic improves for everyone.
The West Faces Decades-Long Megadroughts

“Megadroughts" that last for decades are threatening to strike already parched California and other western U.S. states by the end of the century...

...one model predicting a drought lasting about 35 years may be a "near certainty."

Source: City Watch 10/6/16
Protecting a Vital Resource
Protecting a Vital Resource
Recycled Water Disposal
Recycled Water Disposal
Late 1990s Things changed...

- State Policy
- Surface Water Discharge Limitations
- Public Perception
- Financial Challenge
- Looking for a Win-Win
By 2000 - We became a Master Water Recycler

• To meet Regulatory Compliance
• We needed partners in the community to meet requirements and achieve objective
• We needed the support of the Water Quality Board and Dept of Health Services
• And we needed $$$
Town & a Developer became Partners

- Required use of recycled water on lots within a subdivision, parks and on adjacent soccer park
- Fee offsets to developer to build recycled water infrastructure ($3,500 per unit)
- Town indemnification of developer regarding recycled water use
Assessed what would be needed

- Public Perception & Awareness Program
- Town responsible for project approvals
- Use of disclosure forms
- Homeowner education and training
Learning What People Really Wanted

- Exit surveys conducted at other developments
- We listened to opinions and learned what the response might be
- Developer & Town learned it was possible
  ...but would need to make it attractive
Learning What People Really Wanted

• 94% said it would make no difference and may even improve **perception & value** of their property

• 86% said they would be interested if it would **lower** their water bill

• 74% would want to **know more before** purchasing

• Young adults w/small children **concerned about** water quality safety

Source: Windsor Exit Survey June 2000
A UNIQUE OPPORTUNITY TO MAKE A DIFFERENCE

Most people are very conscientious about recycling plastic, aluminium cans, glass and their newspapers. Now you can do something about recycling water too! And, you won’t have to carry it to the curb each week because it is available automatically within the Vintage Greens subdivision.

EFFICIENT WATER USE

The Town of Windsor and Vintage Greens have entered into a partnership to provide dual piping to new homes. Dual piping means that your drinking water comes in one pipe and reclaimed (or recycled water) comes in another. The recycled water is supplied for irrigating front and backyard landscaping. Nearby neighborhood parks and soccer fields will also be irrigated with recycled water.

Water conservation and the use of recycled water are environmentally sound ways to extend Windsor’s valuable water resources.

Since the recycled water supply is plentiful in the Town of Windsor, no limits on reclaimed water supplies are anticipated even during dry seasons or droughts.

SAVING MONEY ON YOUR WATER & SEWER BILL

During summer months, home water usage may double or triple due to outdoor irrigation of lawns and gardens.

Vintage Greens residents using recycled water will save money because the Town is providing the water free of charge. The chart below shows how much money can be saved over the next 10 years using recycled water in just your front yard or both front and backyard.

- Front Yard Use Only
- Front and Back Yard Use

Rates estimated on average usage at a single family dwelling. Rate savings based on current rates established in YR. 2001 and are subject to change annually.

Vintage Greens residents who use recycled water will save money in other ways. The Town is supplying the initial purple irrigation pipe, and related fittings to residents choosing to use recycled water in their backyard too! In this way residents can double their savings by using recycled water both in the front and backyards.
Congratulations on your new home purchase! Your Vintage Greens home includes a unique water conservation feature. Homeowners tell us this is what they are looking for in new construction today. We are proud of the importance you have placed on conservation in the home.

Recycled water is an environmentally sound way to stretch valuable water resources. Water is simply too valuable a resource to only use once.

**EFFICIENT WATER USE**

Your new home is equipped for watering the front yard with recycled water. We hope you take full advantage of the recycled water capability at Vintage Greens by using it for your back yard as well. It is an excellent way to conserve a precious resource of our environment and a terrific bargain because the water is free.

The recycled water supply is plentiful in the Town of Windsor. No use restrictions on the supply of recycled water are anticipated even during drought conditions.

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**YOU’LL PAY LESS FOR IRRIGATING LANDSCAPES**

Your home is equipped with the dual piping necessary to water front yards with recycled water and supply portable drinking water indoors and you can’t beat the price... Free! Considering the amount of water used to water lawns and gardens each year this is a significant savings for you.

**THE TOWN WILL HELP WITH YOUR BACKYARD**

Vintage Greens homeowners can save money on installing landscaping in their backyards too. Backyard piping will have recycled water capability and the Town is giving new residents who wish to use recycled water in their backyards the purple pipe equipment at no charge. You heard it right, free water piping if you use recycled water in your backyard too! A redeemable coupon enabling you to receive the pipes, connectors, and sprinklers needed to hook up your back yard irrigation system is included in this packet.
Free recycled water to homeowners for 12 years
Supply of free backyard irrigation pipe and sprinklers
Vintage Greens Residential Development
A BIG Win for all involved
Congratulations! You are part of a BIG Win for the Environment

You Win with Recycled Water Too!

TOWN OF WINDSOR

YOU OWN A GREENER HOME

Vintage Greens is in an elite class of innovative, environmentally friendly homes striving for sustainability. It is among the first residential developments in Northern California to be equipped with dual piping that enables homeowners to use recycled water outside and potable drinking water indoors. Homeowners have a tremendous opportunity to conserve a precious resource and significantly lower their water and sewer bills.

Windsor is implementing creative strategies to ensure an adequate and reliable water supply for residential and business customers in the years to come. Expanding the use of recycled water is one way to accomplish this.

The Town also continues to be a leader in promoting water conservation. Town programs include use of recycled water, demonstration gardening featuring low water use plants, and providing water education materials to local schools.

A SUSTAINABLE NEIGHBORHOOD
A UNIQUE PUBLIC AND PRIVATE PARTNERSHIP

Vintage Greens is a remarkable partnership between the Town and Condiotti Enterprises, the developer of Vintage Greens. The Town is offsetting the installation costs of the dual piping throughout the development. This means the additional costs associated with the project are not passed on to you, the homeowner. During the warm summer months, that the yards and parks of Vintage Greens will use more recycled water than potable water consumed by the residents living there. And that is something we can all be proud of!
WINNING WITH RECYCLED WATER

WINDSOR’S WATER USE

Average annual residential water usage in Windsor is about 12,000 gallons per household, per month. During summer months, a home’s water bill can double or triple for watering lawn, irrigating landscape, and other outdoor household uses. The Town anticipates no limits on how much recycled water – even during drought conditions – because the recycled water supply is plentiful and the resource is being used so efficiently. It is projected that recycled water will make up at least 27% of Windsor’s total water supply.

SAVING MONEY

Vintage Greens is an area of innovative, environmentally friendly homes, designed for sustainability. It is among the first residential developments in Northern California to be equipped with dual piping systems that enable homeowners to use recycled water outside and potable drinking water indoors. Homeowners have a tremendous opportunity to conserve a precious resource and significantly lower their water and sewer bills.

TOWN OF WINDSOR

Windsor is providing recycled water to Vintage Greens homeowners at no charge through year 2012. The accumulated savings will be significant given the amount of water used by the average home for outdoor irrigation. The chart below shows how much money can be saved over the next 10 years using recycled water in your front yard or front and backyard.

<table>
<thead>
<tr>
<th>Year</th>
<th>Recycled Only</th>
<th>Recycled and Backyard</th>
<th>Wateravera Uses</th>
<th>Total Avg Uses</th>
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</thead>
<tbody>
<tr>
<td>Year 1</td>
<td>$742</td>
<td>$142</td>
<td>$1220</td>
<td>$2005</td>
</tr>
<tr>
<td>Year 2</td>
<td>$742</td>
<td>$142</td>
<td>$1220</td>
<td>$2005</td>
</tr>
<tr>
<td>Year 3</td>
<td>$742</td>
<td>$142</td>
<td>$1220</td>
<td>$2005</td>
</tr>
<tr>
<td>Year 4</td>
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<td>$2005</td>
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<tr>
<td>Year 8</td>
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<td>$2005</td>
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<tr>
<td>Year 9</td>
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<td>$142</td>
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<td>$2005</td>
</tr>
<tr>
<td>Year 10</td>
<td>$742</td>
<td>$142</td>
<td>$1220</td>
<td>$2005</td>
</tr>
</tbody>
</table>

Purchasers choosing a home in a development with dual piping infrastructure have an advantage over other homes because of the significant savings on your monthly utility bill and availability of a reliable and safe alternative supply of water.

Homeowners who do not want recycled water at their Vintage Greens home must reimburse the Town the fee credit given for initiating recycled water use and to change the dual pipe infrastructure to a single water supply system.

Vintage Greens purchasers save money elsewhere as well. All homes will be equipped with the dual piping necessary to water front yards with recycled water and supply potable drinking water indoors. Backyards will have recycled water capability too.
Recycled Water: How Safe is It?

Putting the Risk of Recycled Water into Perspective

25

Child at Play

The child is 33-pounds and plays on the grass at a playground one day per week immediately following irrigation with tertiary-treated recycled water, which occurs six months of the year (26 days). He/she plays for one hour each day and his/her entire hands, forearms, and lower legs are wet with recycled water for the entire hour. The child indirectly ingests 10 milliliters of recycled water during each play session, which is estimated to be 1/5 the amount of water ingested by a child who swims for an hour. The exposures evaluated include absorption through the skin and incidental ingestion.

This is a high estimation of the amount of water to which a typical child at play could be exposed. This is done purposely to build extra margins of safety into the risk assessments in this study (see reverse). The scenario not only represents a child on a playground, but also at the park or on a school athletic field.

WATER SAFETY

Recycled water is delivered through separate underground pipeline systems owned, operated and maintained by the Town in the same way as they operate the drinking water system. Recycled water pipelines are clearly identified by purple colored piping.

The Town’s recycled water is treated to strict State of California - Title 22 standards for tertiary (or advanced) treatment of water. These requirements are similar to drinking water standards. The recycled water system is monitored daily by Town personnel to ensure that all water quality standards are met.

Recycled water is already being used in other parts of the country and the world as a safe and reliable water source. Homes in Arizona, Florida, Texas and California have been using recycled water for watering lawns and landscaping successfully for years. In addition to residential and commercial irrigation, recycled water is also being used in various commercial and industrial uses for toilet flushing and cooling systems. It is a common sense alternative to the fresh water supply.
FREQUENTLY ASKED QUESTIONS

QUESTION: Is recycled water safe?

ANSWER: Recycled water must meet stringent requirements mandated by the State Department of Health Services to be used for irrigation and residential or commercial landscaping. It should not be used for personal consumption such as drinking or cooking. The recycled water is treated in a manner that ensures that it is safe and non-toxic. The recycled water is tested for various parameters to ensure that it meets the required standards. Recycled water is a safe and effective alternative to traditional water sources.

QUESTION: Can recycled water be used in swimming pools and spas?

ANSWER: Although the Town of Windsor has approved the use of recycled water for irrigation and residential or commercial landscaping, it is not recommended for use in swimming pools and spas. Recycled water can contain particles and other contaminants that may be harmful to swimmers and spa users. It is recommended to use fresh water for swimming and spa use.

QUESTION: How long has recycled water been in use by the Town of Windsor?

ANSWER: The Town of Windsor has been using recycled water for over 20 years. The first recycled water system was installed in 1991 and has since been expanded and improved to meet the needs of the community.

QUESTION: What happens if we drink recycled water?

ANSWER: Drinking recycled water is not recommended as it may contain harmful bacteria, viruses, and other contaminants. It is important to use fresh water for drinking and other purposes.

QUESTION: What is the Town doing to make sure the recycled water is always safe?

ANSWER: The Town of Windsor has strict monitoring and testing procedures to ensure that the recycled water is safe for use. The recycled water is tested for various parameters to ensure that it meets the required standards. The Town also has a system in place to detect and respond to any issues that may arise with the water supply.
Making Recycled Water Work for You

Rules for Use of Recycled Water in Vintage Greens Subdivision

Congratulations on choosing to use recycled water to water your lawn and plants. You are helping to improve Windsor, Sonoma County, and the environment.

Windsor’s recycled water meets the stringent State standards for safety and water quality, but it is not intended for human consumption. There are also rules governing its use. Failure to follow these rules may result in disconnection of your recycled water service. Following these rules will ensure the efficient use of recycled water in your yard and garden for years to come. (Este documento esta disponible en Español. Se habla Español.)

Rules for Watering

6. Make sure your sprinkler timers are set to water between 1:00 AM and 8:00 AM.
6. Runoff onto sidewalks and streets is prohibited. Use the features in your sprinkler timer to water in shorter and multiple cycles to allow the water to soak into the soil and avoid runoff.
6. Do not water within 3 feet of the drip line of any native oak tree, as watering may damage the tree. The drip line of a tree is the distance from the tree trunk to the canopy of the tree.
6. Check your sprinklers monthly during the watering season to make sure they are working properly and make repairs or adjustments as needed.
6. Do not water when it is raining, as results in runoff. Set your irrigation timer to the off or rain mode while it is raining. Turn off your sprinkler timers during the rainy season.
6. Do not use drinking water for watering in any area designated for recycled water.
6. Annual aeration and dethatching of your lawn will help keep your lawn healthy and aid in absorption of water during watering.

Here is what you need to know and do before you install your Backyard Landscaping using recycled water.

6. Within two weeks of moving into your new home, someone will contact you to set an appointment to deliver a coupon for your free purple landscape irrigation (watering) materials. If you have not received this call or you want to get started on your backyard sooner, contact this number: 836-0300. Leave your name and telephone number and within a day or two someone will call to set up a time to deliver the coupon—along with some gifts and information from the Town of Windsor—to your home.
6. After determining your landscape watering needs, fill out the “Town of Windsor Vintage Greens Recycled Water Irrigation Materials List” (which will be in an envelope with your coupon). Use this form to specify the quantities of purple piping, fittings, and sprinkler heads needed for your yard. You may mail or hand-deliver this form along with your coupon to the Town of Windsor Public Works Department. Suggestion: Make a copy of the completed form for your records.
6. Mail: Town of Windsor, Public Works Department, P.O. Box 100, Windsor, CA 95492-0100
6. In-Person: 8400 Windsor Road
6. FAX: 836-3137

6. Thursday is delivery day. The Town will deliver your materials the Thursday after it receives your order. If you order via FAX, E-MAIL, or otherwise submit an order without your coupon attached, you must turn over your coupon at the time of delivery. The Town cannot make the delivery without receipt of your coupon.
6. Please note: The sprinkler control valves for your backyard watering system must be installed in the front yard. This is a town regulation. You will find the builder has made accommodations for this installation next to your front yard control valves.
6. Important: After you have installed your watering system, do not turn on any of it with dirt or other material until the Town has inspected the work. This inspection is necessary to ensure there is no cross connection between the recycled and potable water lines. To request an inspection, call 832-6344. After the recorded message, be sure to state you live in Vintage Greens, leave your address, contact information, and best time for a call back. Typically, an inspector will be able to come out the next day. Suggestion: If you [or your landscapers] are on a tight schedule, you may want to plan accordingly—perhaps by arranging the inspection ahead of time.
6. If you neglect to get an inspection, you could be asked to expense your watering system at a later date, possibly requiring an uprooting of some plants, lawn and other landscaping features.

The Town of Windsor is committed to making this process a smooth one for you. If you have any questions, concerns, or suggestions, please call 836-0300. We thank you for your cooperation.
• Extensive Public Outreach Paid off
• 476 New Homes online, 100% participation
• Average recycled water use 10,000 gallons per house per month
Potable water use level throughout the year
• Projected annual reduction in potable use of 25 million per year
• All wastewater collected, treated and returned to the site for irrigation
• Bottomline: 25 million gallons of beneficial use of recycled water
Project Benefits

The Town of Windsor’s Geysers Connection Project comes with many benefits, including:

- Ensuring the Town’s current and future compliance with environmental regulations.
- Providing a weather-independent, environmentally responsible method for recycled water reuse.
- Producing a negative net carbon footprint. The amount of green energy produced at the geothermal plant using the Town’s recycled water will outweigh the energy consumed by the project.
- Fiscal responsibility and cost-effectiveness. The Town is committed to minimizing impacts on ratepayers.

“Windsor is now part of a safe, reliable and environmentally advanced method of treated wastewater reuse.”

Pump Station & Pipeline Facts

- Initially, Windsor will send 194 million gallons annually to the Geysers.
- Control centers for the pump station and the Geysers system are linked by 78,000 feet of fiber optic cable and remote radio telemetry.
- Operation of pump station is automated or can be controlled remotely from Santa Rosa’s Geysers Operation Center.

Thanks to these organizations and their employees who made this project a reality:

Design Engineers and Construction Managers: RMC Water and Environment, in conjunction with Winder and Kelly Consulting Engineers
Construction Contractor: K.G. Walters
Town Staff: Richard Bartlett, Richard Burtt, Matt Froncberger and Craig Scott
City of Santa Rosa Staff: Dan Carlson and Mike Sherman
Project Communications: Data Instincts

For more information about the Geysers Connection Project and other recycled water projects, visit www.WindsorWaterRecycling.com
**Geyser Connection Project**

The Geyser Connection Project is a collaborative effort between two cities and private industry. Connecting to Santa Rosa's Geyser Recharge Project pipeline allows the Town of Windsor to initially send an average of 500,000 gallons per day of its highly-treated recycled water to the Geyser Steamfields where it is used to generate clean energy.

The project includes a pump station and approximately 1.700 feet of 12-inch diameter pipeline connecting Windsor's Water Reclamation Treatment Plant to the Geyser pipeline. The project has the capacity to send over one million gallons per day of recycled water to the Geyser in the future.

Before the Geyser Connection Project, all recycled water that was not used for irrigation had to be discharged into Mark West Creek during wet-weather months. Taking advantage of the opportunity to tap into Santa Rosa's Geyser Recharge Project provides the Town with a more flexible option and ensures continued compliance with its discharge permit.

**What is the Geyser Recharge Project?**

In 1998, the City of Santa Rosa entered into a 30-year agreement with a consortium of geothermal companies to supply highly treated recycled water from the Laguna Subregional Wastewater Treatment Plant for injection at the Geyser Recharge Project. The Geyser Recharge Project involved the construction of a 41-mile pipeline, four pump stations, a terminal reservoir, and associated control/communication systems. The pipeline route for the Geyser Recharge Project passes through Windsor west of US Highway 101. In July 2008, the 1998 agreement was amended, anticipating increased flows including Windsor's for an additional 30 years. Today, Santa Rosa pumps about 13 MGD of recycled water to the Geyser where it is used to create enough green energy for approximately 100,000 homes. For more information visit SRCity.org/geysersproject.

**Other Uses of Recycled Water**

In addition to the sending water to the Geyser Steamfields, the Town of Windsor is a leader among communities nationwide in the use of highly-treated recycled water for the irrigation of agricultural lands, recreational facilities, schools and residential front and back yards, which saves millions of gallons a year of precious fresh water for drinking and other human uses. Here are just some of the places in and around Windsor that you will find recycled water being used:

- Vintage Greens Neighborhood
- Wilson Ranch Soccer Park
- Windsor Golf Course
- Windsor High School
- SRJC’s Shone Farm
- Various agricultural interests
Santa Rosa’s Geysers Recharge Project benefits the Region

- Reduces discharges to Russian River
- Provides operation flexibility
- Generates electricity for 100,000 households in the SF Bay Area
In 2015:
Windsor Reused 90% of its Recycled Water

• 49% for Agriculture & Urban reuse
• 41% to Geysers to make electricity
Instead of a Disposal System we became Reuse System

With a Full Transmission & Distribution System
• Less potable water taken from the Russian River
• Less recycled water put back into Russian River
Efforts continue for offsets and expanded RW use as water demands in our area continue
Windsor is a leader in recycled water use

Saving 275 million gallons of drinking water a year by irrigating 400 acres of golf course, vineyard, parks, pasture and fodder croplands with recycled water.
Other examples:

Santa Rosa, California
Landscape irrigation to numerous parks / schools and over 6,000 acres of agricultural land. Approx. 344 million gallons of water.

Irvine, California
Using recycled water for homes, greenbelts and common areas, parks, schools, and agriculture for over 30 years. Front and backyard irrigation in eligible estate sized residential lots, for toilet flushing in a few high rise and commercial buildings, and for industrial uses such as carpet dyeing.

El Dorado Hills, California
Supplying 3,400 homes in the Serrano planned community with recycled water for front and backyard irrigation.

Clearwater/St Petersburg, Florida
Supplys recycled water for landscape irrigation in thousands of homes, plus golf courses, soccer fields, parks and beach facilities. Florida residents consider the availability of recycled water for irrigation to be a valuable amenity.

Rohnert Park, California
Over 500 acres of land irrigated with recycled water, offsetting more than three million gallons per day to golf courses, city parks, school grounds, and commercial properties.
Questions?
When a Community Loves Water Recycling

Mark Millan
May 17, 2018