City of
Santa Rosa
Utilities Department

Recycled Water User's Guide

RECYCLED
WATER
PROGRAM

For Design and Operation of On-Site Recycled Water Facilities

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CONTENTS

CONTENTS

ILLUSTRATIONS AND CHARTS

CONTENTS

ABBREVIATIONS

Abbreviations used throughout this document are listed below for reference. Definitions for terms are listed in ***Appendix A - Definitions.***

AWWA
American Water Works Association

County HSD
Sonoma County Health Services Department – Environmental Health Division

IAPMO
International Association of Plumbing and Mechanical Officials

NPDES
National Pollutant Discharge Elimination System

OSHA
Occupational Safety and Health Administration

psi
Pounds per square inch

PVC
Polyvinyl chloride

RP Device
Reduced Pressure Principal Backflow Prevention Device

RWQCB
Regional Water Quality Control Board

State DPH
State of California Department of Public Health, Drinking Water Field Operations Branch – Sonoma District

Title 17
California Code of Regulations, Title 17

Title 22
California Code of Regulations, Title 22

UPC
Uniform Plumbing Code

INTRODUCTION

This document contains City of Santa Rosa rules, regulations, and guidance for design, installation, and operation and maintenance of on-site recycled water facilities. The document covers requirements for existing sites and new development sites, and should give the User information necessary to meet all applicable regulations. Every effort has been made to provide information to the User to design, construct and operate facilities in compliance with all existing codes, laws, statutes and regulations concerning the use of recycled water.

AUTHORITY AND SOURCES

Santa Rosa City Code, Chapter 14-25 sets forth rules and regulations regarding the use of recycled water in Santa Rosa. A full copy of this chapter is included in Appendix F of this User Guide. This User Guide is defined in the City Code as "the document which details the requirements of the state and local rules and regulations that apply to the design, installation, and operation and maintenance of the on-site recycled water system." The User Guide is prepared by the Director of Utilities, and can be updated as rules and regulations change over time.

This document draws on a number of references concerning the use of recycled water. Of primary importance are the California Code of Regulations Title 22 and Title 17, the California Health and Safety Code, the California Water Code, the Guidelines for Distribution of Nonpotable Water and the Guidelines for the On-Site Retrofit of Facilities Using Disinfected Tertiary Recycled Water developed by the California-Nevada Section of the American Water Works Association (AWWA), and the International Association of Plumbing and Mechanical Officials (IAPMO) Uniform Plumbing Code (UPC), Appendix J. It also draws on regulations contained in the Regional Water Quality Control Board (RWQCB) permit (No. CA0022764). This document was developed specifically for Users of the City of Santa Rosa and it takes precedence over general guidelines (including AWWA guidance documents) where differences are noted. Since codes, laws, statutes and regulations can change without prior approval or knowledge, the City of Santa Rosa does not assume any liability for errors in this document. Within the Santa Rosa service area, various Users or individual facilities may have site-specific requirements, which are usually set forth in the individual Recycled Water Use Permit. It is the responsibility of the User to check with the City of Santa Rosa before initiating any changes to their on-site recycled water system.

Interested parties may contact the City of Santa Rosa for copies of documents referenced in the Recycled Water User Guide.

ACKNOWLEDGEMENT

In preparing this document, the City of Santa Rosa acknowledges the assistance of a number of agencies including State Department of Public Health (State DPH), Sonoma County Health Services Department – Environmental Health Division (County HSD), and North Coast RWQCB. In particular, the City of Santa Rosa acknowledges and thanks South Bay Water Recycling, a recycled water program in the cities of San Jose, Santa Clara and Milpitas, for sharing key reference material used to generate this User Guide.

SEVERABILITY

If any section, subsection, clause, or phrase of this Recycled Water User Guide is determined to be invalid the remaining portions of this Recycled Water User's Guide shall remain in effect.

RECYCLED WATER PROGRAM

1 PLANNING FOR RECYCLED WATER USE

A General Guideline to Help New and Existing Facilities Plan for the Use of Recycled Water

This User Guide details the requirements of the state and local rules and regulations that apply to the design, installation, and operation and maintenance of the on-site recycled water system for new and existing facilities planning for the use of recycled water. This section provides potential users with general information about the use of recycled water in California and on the Santa Rosa system in particular.

DETERMINATION TO USE RECYCLED WATER

Sites may use recycled water for a variety of uses approved by State DPH.

All new irrigation systems for landscaped areas (other than single-family residences) and commercial/industrial uses that are approved for use of recycled water that are located within the City of Santa Rosa Recycled Water Project Area may be required to use recycled water. Existing connections to the potable water system serving either irrigation systems or other approved uses may convert to recycled water with approval of the City. All recycled water systems must be metered separately from the potable water supply system and must have no cross-connections to the potable water supply system.

PROTECTION OF PUBLIC HEALTH AND THE ENVIRONMENT

The City of Santa Rosa, the County HSD, and the State DPH reserve the right to take any action necessary, with respect to the operation of the User's recycled water system, to safeguard the public health. If real or potential hazards are evidenced any time during construction or operation of the User's recycled water system, the City of Santa Rosa reserves the right and has the authority to terminate recycled water service immediately, without notice. These hazards include, but are not limited to, cross-connections with the potable system or any other water system, improper tagging, signing, or marking, or unapproved/prohibited uses, including irrigation practices that result in runoff from use areas, particularly where such runoff flows to a surface waterbody. The City of Santa Rosa may elect to temporarily replace the recycled water supply water with potable water only after the User's recycled water system has been disinfected and approval has been granted by the City of Santa Rosa and State DPH. All modifications required to replace the recycled water supply with potable water will be at the User's expense.

APPROVED USES OF RECYCLED WATER

Sites may use recycled water for a variety of uses approved by State DPH. These include, but are not limited to: landscape irrigation;

agricultural irrigation; construction uses such as dust control, soil compaction, and backfill consolidation; commercial/industrial purposes such as cooling towers, boiler feed, air conditioning, commercial laundries, commercial car washes, concrete mixing, process rinsing and textile dying; landscape impoundments such as fountains and water features; and toilet and urinal flushing in non-residential facilities.

In Santa Rosa, the majority of recycled water use is for landscape irrigation, though other approved uses are also part of the existing recycled water program. For example, recycled water has been provided for use by contractors for dust control, and to supply ponds and fountains for many years. Each use of recycled water must have a Permit from the City of Santa Rosa prior to receiving recycled water. The State of California regulates the use of recycled water, as directed under the California Code of Regulations Title 22. The City of Santa Rosa and the State DPH, at their discretion, can require or specify what sites and/or uses of recycled water are to be utilized in their service area, so long as it complies with State requirements. Sites must use recycled water only for those uses approved by the City of Santa Rosa and State DPH.

Certain recycled water sites are considered "dual plumbed" and are required to undergo formal testing for cross-connection a minimum of every four years. Any site using separate piping systems for recycled water and potable water within a facility and where the recycled water is used to serve plumbing outlets within the facility is considered dual plumbed. Single family residences using recycled water for irrigation are also considered dual plumbed sites.

RECYCLED WATER USE PERMIT

Every site must obtain a Recycled Water Use Permit (Permit) from the City of Santa Rosa Utilities Department prior to receiving recycled water. Permits will detail the conditions of use, including the requirement that the User follow the rules and regulations of the City Code and this User Guide. Typically, these conditions also include construction inspection, cross-connection certification, Site-Supervisor training and, for irrigation sites, a schedule of the hours that recycled water can be utilized. Following Permit issuance, a site may receive recycled water in accordance with the requirements of the Permit. The City of Santa Rosa has the authority to revoke the Permit at any time.

Every site must obtain a Recycled Water Use Permit from the City of Santa Rosa Utilities Department prior to receiving recycled water.

If the on-site recycled water system is found to be in violation of the Permit conditions, the City of Santa Rosa has the authority to immediately terminate recycled water service. Alternatively, the City may direct the User to mitigate for these violations. A site inspection will be scheduled after a reasonable mitigation period to ensure compliance. Failure to comply will result in termination of recycled water service.

PROCEDURES FOR OBTAINING RECYCLED WATER SERVICE

The forms and procedures for obtaining recycled water service are listed in *Appendix E.* The procedures are slightly different depending on whether the service is for a new facility or for an existing facility.

2 DESIGN, INSTALLATION AND INSPECTION

Rules and Guidelines for On-Site Recycled Water Irrigation Systems

The purpose of this section is to provide designers of on-site recycled water systems rules and guidelines for the design, installation and inspection of recycled water systems. This section contains:

- Requirements for design, installation and inspection of new recycled water irrigation systems, and systems for other approved uses.
- Requirements for design, installation and inspection of existing irrigation systems that are converting from a potable to a recycled water supply.

DESIGN REQUIREMENTS AT THE SERVICE CONNECTION

With the exception of pipe identification and pipe separation, facilities where the existing buried piping system is converted from potable to recycled water must meet the same requirements as new facilities. However, any new buried piping added to existing piping at a retrofitted site must meet the identification and separation requirements for new systems (See Design Requirements for On-Site Facilities on p. 5 and Installation Criteria on p. 11-13). In addition, any existing piping that is currently above ground, and piping uncovered for any reason during construction must be marked according to pipe identification requirements of this section to the extent feasible.

Pressure

The City of Santa Rosa distribution system currently provides recycled water to Users at pressures that range from 40 pounds per square inch (psi) to 100 psi. The recycled water distribution system will operate at a lower pressure (e.g. 5-10 psi lower) than the potable water distribution system. Designers should contact the City of Santa Rosa to determine the pressure available at their specific point of connection.

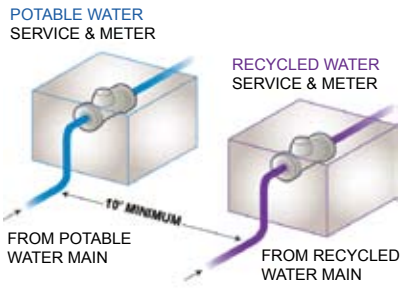
Required Wye Strainer and Pressure Regulator

Unless otherwise directed by the City of Santa Rosa, all recycled water services must be equipped with a wye-strainer (20-mesh or finer screen) installed as close as possible to the meter box, and a pressure regulating valve installed immediately downstream of the strainer. Both of these devices must be installed in an underground box or boxes. Prior to determining available pressure, designers should take into account the pressure losses incurred by these devices.

Point of Connection Location

Designers must contact the City of Santa Rosa or consult development plans to verify the water meter location, the size of the lateral and meter available to serve their facility.

Point Of Connection Separation Requirements



All recycled water service laterals and meters must be at least ten feet horizontal separation from the nearest potable water facility, including pipelines, meters and hydrants. If a ten-foot horizontal separation is not feasible, a separation of at least four feet may be allowed subject to special construction conditions. (Designers should consult the City of Santa Rosa for specific design requirements.) In no case is horizontal separation of less than four feet or construction in the same trench as potable facilities allowed.

Designers should check to see that laterals and meters that serve their site meet these requirements.

Backflow Prevention: Protection Of The Public Recycled System

Since recycled water is not used for drinking purposes, backflow protection is not normally necessary on recycled water irrigation systems. However, the City of Santa Rosa must ensure that Users do not compromise the quality of the recycled water in the distribution system. Therefore, the City of Santa Rosa will require backflow protection on the User's recycled water system if it is determined that there is a backflow hazard on-site which threatens the integrity of the distribution system.

Examples of sites that may be required to install backflow protection devices are:

- Irrigation sites where direct chemical fertilizer injections systems are installed on the irrigation system.
- Irrigation sites where recycled water landscape impoundment may cause a backflow hazard.
- Irrigation sites where the public water system is used to supplement the recycled water supply.
- Sites with boosted water pressure or processes that increase pressure on part of the system.
- Facilities using recycled water for landscape irrigation as part of an approved dual plumbed use area.

In such cases, backflow prevention devices might be required at the recycled water service connection or at specific, on-site locations as appropriate to the situation. Backflow prevention assemblies must be shown on plans and be a type approved by State DPH. It will be the responsibility of the User to provide test reports for on-site backflow prevention devices, and at the service connection in accordance with the City Backflow Prevention Program.

Devices must be properly maintained, inspected quarterly and tested at least annually. Backflow prevention devices, when required on recycled water systems, must be conspicuously labeled. Test equipment must be dedicated for use with recycled water. Backflow testing equipment used for recycled water must not be reused on potable water systems.

DESIGN REQUIREMENTS FOR ON-SITE FACILITIES

No Cross-Connection

A cross-connection is any physical connection between any part of a water system used or intended to supply water for drinking purposes and any source or system containing water or substance that is not or cannot be approved for human consumption.

This includes direct piping between the two systems, regardless of the presence of valves, backflow prevention devices, or other appurtenances. No cross-connections are allowed between the recycled water system and any other water system.

Pipe Class

Type of Recycled Water Piping	Size	Class
Constant pressure PVC	1.5" diameter and smaller	Schedule 40 or greater
	2.0" diameter and larger	Class 315 or greater
Intermittent pressure PVC lateral piping	All	Class 200 or greater
Copper piping	All	Type "K" or greater

Pipe Separation

Horizontal Separation A minimum horizontal separation of ten feet between parallel, buried recycled and potable water pipelines should be maintained. If a ten-foot horizontal separation is not feasible, a separation of at least four feet may be allowed subject to special construction conditions. (Designers should consult the City of Santa Rosa for specific design requirements.) In no case is horizontal separation of less than four feet or construction in the same trench as potable facilities allowed.

No special construction requirement

Must meet one of these requirements:

- Sovent-welded PVC pipe on recycled water system
- Restrained joint PVC pipe on recycled or potable
- Restrained joint ductile iron pipe on recycled water system
- Soldered copper pipe on recycled water system
- Sleeve potable pipe
- Sleeve recycled pipe

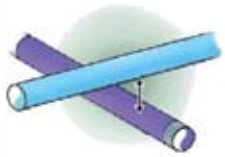
Not allowed

Potable water

Pressurized recycled water

Vertical Separation at Crossings Where a buried constant pressure recycled water pipeline crosses a buried potable water pipeline, it must be located a minimum of 12 inches below the potable water pipeline. Constant pressure recycled water pipelines are allowed over potable water pipelines with a minimum of 12 inches vertical separation if a full standard pipe length is centered over the crossing, or the recycled water pipeline is installed in a pipe sleeve which extends a minimum of 10 feet on either side of the potable water piping.

Allowed:



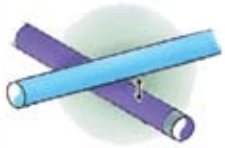
1' or greater below potable — No special construction requirement.

1' or greater above potable — Depth of cover requirement has to be satisfied.

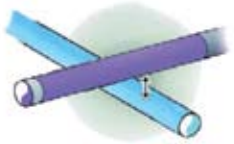
A full standard pipe length must be centered over the crossing, or the recycled pipeline must be installed in a pipe sleeve which extends a minimum of 10 feet on either side of the potable water piping.

Note: Intermittently pressurized irrigation laterals may be located a minimum of 12 inches above potable water pipelines without sleeving.

Not Allowed:



Less than 1' below potable

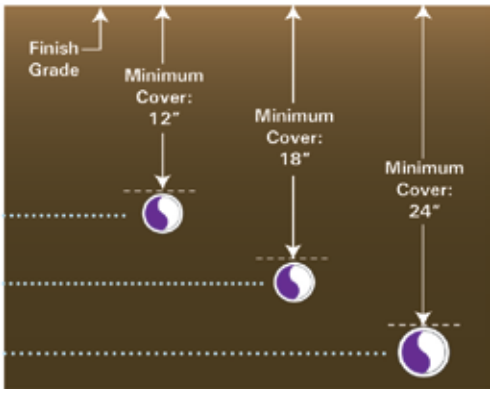


Less than 1' above potable

Depth of Cover and Thrust Blocking

All on-site recycled water piping must be buried to a minimum depth from finished grade to top of pipe (minimum cover) according to the following schedule:

Type of Recycled Water Piping	Minimum Cover
Intermittent Pressure All Sizes	12"
Constant Pressure 2.5" diameter and smaller	18"
Constant Pressure 3" diameter and larger	24"



All recycled water piping other than PVC piping with solvent welded joints must be protected against movement with thrust blocks or restrained joints or other approved methods conforming to the UPC Section 609.1.4.

Irrigation System and Landscape Impoundment Design

Irrigation systems must be designed to minimize overspray and ponding and prohibit runoff. Designers must specify appropriate irrigation devices to prevent overspray in narrow areas. New landscape sites are subject to the City's "Water Efficient Landscape Policy" which includes provisions that assure that irrigation design will not result in significant overspray, runoff and ponding *(See Appendix G – City of Santa Rosa Water Efficient Landscape Policy)*. For retrofit sites, the following design standards must be met to provide this assurance:

- Separate irrigation stations will be provided for different water requirements, solar exposures, microclimates and slopes.
- Sprinklers will be adjusted or systems modified to minimize overspray on to adjacent pavement, sidewalks, and other non-landscaped areas.
- Pressure regulation will be installed to assure operation at the manufacturers' optimal operating pressure.
- Sprinkler heads will have matched precipitation rates within each valve circuit.
- Rain shut-off devices will be installed on each irrigation controller.
- Check valves will be installed, where applicable, to prevent low head drainage.

New landscape sites are subject to the City's "Water Efficient Landscape Policy" ...

In the event that, during the coverage test, noticeable overspray, runoff and/or ponding is observed, irrigation system components will be adjusted or removed and relocated as needed. This requirement does not apply to landscape impoundments such as fountains, ponds or lakes.

Landscape impoundment design must include a mechanism to assure water quality management of the impounded recycled water.

Protection of Drinking Fountains and Outdoor Eating Areas Drinking fountains, outdoor eating areas and other similar facilities (e.g. snack bars) located within the Approved Use Area must be protected from overspray or contact with recycled water. Protection may be accomplished by relocating the irrigation system or relocating or modifying the protected facilities.

Protection of Aquifers and Surface Waters Recycled water landscape impoundments such as ornamental ponds must be located at least 100 feet from any domestic water supply well. Recycled water landscape impoundments must be adequately protected from erosion, washout, or flooding from a rainfall event having a predicted frequency of one in 100 years. Ponds must maintain a minimum freeboard consistent with pond design but not less than two feet. Landscape impoundment design must include a mechanism to assure water quality management of the impounded recycled water. In addition, the Director of Utilities may choose to impose other requirements as may be necessary for the purposes of protecting aquifers and surface waters.

Irrigation systems must be designed to prevent irrigation of recycled water within 50 feet of any domestic water supply well. Irrigation of surface water bodies is prohibited. Installation of new irrigation systems in close proximity to surface waters shall incorporate additional design features such as setbacks and berms as appropriate to eliminate the potential for runoff to surface water bodies. Existing irrigation systems in close proximity to surface waters shall be inspected and adjusted to eliminate the potential for runoff prior to retrofit. Additional runoff protection measures such as berms, vegetated swales, and setbacks will be incorporated as needed. Detail and information on additional runoff protection measures can be found in the City of Santa Rosa's *Guidelines for the Standard Urban Storm Water Mitigation PlanStorm Water Best Management Practices for New Development and Redevelopment, June 3,2005.*

Protection of Public Potable Water Systems - Backflow Prevention Although not normally a part of on-site recycled water irrigation systems, backflow prevention devices are a required and important part of potable water service connections to sites where recycled water is used. At premises where both recycled water and potable water are present, a reduced pressure principal backflow prevention device (RP device) must be located as close as possible to the downstream side of every potable water meter.

Hose Bibs Hose bibs are not allowed on any recycled water system.

DESIGN APPROVAL

Before any new recycled water system is constructed or any existing recycled water system is modified, on-site recycled water system plans must be approved by the City of Santa Rosa. Approval will be contingent upon evidence that all applicable design requirements, rules and regulations for a recycled water system are satisfied, and that the system as designed can be operated in accordance with this User Guide. The User is responsible for meeting all requirements, even those requirements not shown on the approved plans. The plan check procedures are contained in *Appendix E.*

INFORMATION REQUIRED ON PLANS

The following is a brief list of the information required on the plans for every on-site recycled water system. Note that compliance with every item on this list does not guarantee that the plans will be approved since regulations and policies may change and some sites may require additional provisions. For convenience, a copy of this list is provided in *Appendix E – Sample Forms,* in a checklist format.

- Indicate all **sources of water** on the plans.
- Show the location and size of all **water meters** on the piping plans.
- Show location and type of all **backflow prevention devices** for potable water systems and, if applicable, for recycled water system.
- Show location and type of all **strainers, pressure regulating valves, and master valves**.
- Show location of all **water pipelines** (including potable and/or any other water system and well lines) crossing the site. A separate site or utility plan can be used to show this information, or it can be part of the irrigation or piping plans. Exception for an existing irrigation system converting to recycled water: although it may not be possible to show the location of all water pipelines at this type of site, all locations where future recycled water piping will be located, and the separation from the potable water piping must be clearly indicated on the plans.
- Supply the following **information box** for each recycled water system with its own meter; place this information on the same plan as the meter/point of connection it pertains to. Fill out the ten items as applicable, but do not delete any of them.

GENERAL SITE INFORMATION FOR RECYCLED WATER USE

1. RECYCLED WATER USE AREA: *(type of use, physical area of use, and for landscapes square footage of Use Area).*
2. PUBLIC ACCESS TO SITE GROUNDS IS *(indicate: UNRESTRICTED or RESTRICTED).*
3. OWNER: *(legal property owner's name).*
4. PROPERTY MANAGER CONTACT: *(name, title, and telephone number).*
5. TENANT (S): *[name(s) and phone number(s); if not applicable, state NOT APPLICABLE].*
6. ON-SITE WELL LOCATIONS: *(for example, ONE; if none, state NONE).*
7. WELLS ON ADJACENT SITES LOCATED WITHIN 50 FT. OF RECYCLED WATER APPROVED USE AREA OR WITHIN 100 FT. OF ANY RECYCLED WATER IMPOUNDMENT: *(for example, ONE; if none, state, NONE).*
8. OUTDOOR DRINKING FOUNTAINS IN/NEAR THE RECYCLED WATER APPROVED USE AREA: *(for example, ONE; if none, state, NONE).*
9. OUTDOOR EATING AREA(S) IN/NEAR THE RECYCLED WATER APPROVED USE AREA: *(for example, ONE; if none, state, NONE).*
10. WATER FEATURES ON SITE: *(examples below; if none, state NONE).*

Number:	Type:	Water Source:
One	Fountain	Recycled
One	Pond	Potable

Regulations and policies may change — and some sites may require additional provisions.

- Clearly identify all adjacent **streets**, and locations of all major improvements on the site.
- Show the location of all **drinking fountains, outdoor eating areas,** and **other public facilities** supplied with recycled water, potable water, or any other water service. Public facilities include, but are not limited to, restrooms, snack bars, swimming pools, wading pools, decorative fountains and showers. Show the pipelines feeding all of these facilities.
- Show the location of any **wells, lakes, ponds, reservoirs,** or **other water impoundments** located on the site or within 100 feet of the site, and indicate the type of water source.
- Indicate that the **separation between potable and recycled water lines** meets minimum requirements. *(See Design Requirements on pages 5 and 6).* Show sleeving where recycled water pipelines cross over potable water pipelines.
- When **potable water piping is not present** on the site, state in a note that the cross-connection test required by the City of Santa Rosa is waived for sites where potable water piping is not present.
- **Show all details necessary** to properly construct the system, including the details conforming to the City of Santa Rosa requirements. *(See Appendix C – Recycled Water Standards).* The purpose of the details is to show the materials and methods necessary to clearly identify all water systems on the site.
- For irrigation sites, include an **irrigation equipment legend** specifying all materials of construction for the system, including:
  - A pipe schedule listing pipe sizes, materials of construction, and type of water conveyed by the piping.
  - A listing of valve types, including quick coupling valves.
  - All pertinent information for each type of sprinkler head and/or emitter, including manufacturer and model number, nozzle pattern and application rate for sprinklers, and flow rate for drip emitters.
  - Indication of purple-colored pipe with recycled water stenciling and quick coupling valves with purple covers where recycled water is used.
- For **recycled water landscape impoundments,** include all necessary details to demonstrate the landscape impoundment is adequately protected from erosion, washout, or flooding from a rainfall event having a predicted frequency of one in 100 years.
- For **recycled water pond designs,** show all details necessary to clearly demonstrate that the minimum freeboard is consistent with pond design but not less than two feet.
- Include the **Standard Notes** specified by the City of Santa Rosa. *(See Appendix B –Standard Notes).*
- All sites using recycled water must post **clearly visible signs** conforming to the City of Santa Rosa details. Show proposed sign locations on irrigation plans.
  - For many sites, typical locations for signs are at the property line near crosswalks, at driveway entrances, and at outdoor eating areas.
  - For streetscapes (parkways, frontage or backup landscaping), place signs at street corners and entranceways as appropriate to notify passersby and users of the site.

- For medians, a sign should be placed at the beginning and end of every median, and another approximately equidistant from the ends of the median for longer median areas.
- For decorative fountains, ponds, and other water features, *see Advisory Signs For Decorative Fountains, Ponds and Other Water Features* on page 14 for more information.

- Add **signature lines** for the City of Santa Rosa – to all irrigation plan sheets, detail sheets, and specification sheets that pertain to the recycled water irrigation system.

INSTALLATION CRITERIA

Pipe Identification

All new piping, whether for a new or retrofitted system, must be installed according to the approved plans and marked per these requirements to clearly distinguish between recycled water and potable water systems.

Identification of Buried Recycled Water Lines The use of purple colored pipe with continuous wording "RECYCLED WATER – DO NOT DRINK" printed on opposite sides of the pipe is the preferred method for identification of new buried recycled water piping (constant-pressure mainlines/intermittent-pressure irrigation laterals). Pipe must be laid with wording facing upwards.

An acceptable alternative: all new buried recycled water lines (constant-pressure mainlines/intermittent-pressure irrigation laterals) must be identified by continuous lettering on three inch (3") minimum width, purple marking tape with one inch black or white contrasting lettering bearing the continuous wording "RECYCLED WATER – DO NOT DRINK." This tape must run continuously on top of all piping (mainlines and laterals) and must be attached to piping with plastic tape banded around the marking tape and the pipe every five feet on center. Marking tape must extend to all valve boxes and/or vaults and exposed piping.

Identification of Existing Buried Recycled Water Lines Existing buried piping which will be converted to recycled water use need not be marked unless the piping becomes exposed, such as during installation of new pipeline or maintenance of existing pipe. The exposed section must be marked as indicated above for new piping.

Identification of Above Grade Recycled Water Lines All above grade recycled water pipelines, whether new or existing, must be labeled with the words "RECYCLED WATER - DO NOT DRINK" and color coded purple to differentiate recycled water pipelines from potable and any other water pipelines. If purple identification tape is used to label the pipe and/or color code the pipe, the tape must be adhesive, permanent, and resistant to environmental conditions. Purple bands may also be painted around the circumference of the pipe at ten-foot intervals for color-coding. Purple PVC pipe is not an acceptable alternative for color-coding because the purple color will fade when exposed to sunlight.

Identification of Recycled Water Lines Inside Structures

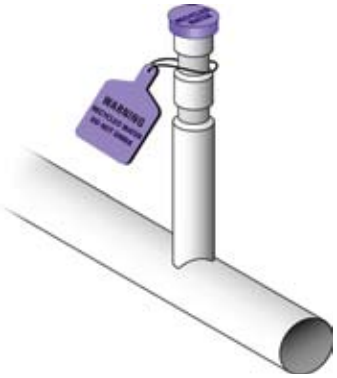
Exposed (not buried) constant pressure recycled water pipelines, such as copper or galvanized pipelines, used in a structure to route recycled water, must be identified per UPC Appendix J, with the exception that the labeling on the piping must read "CAUTION: RECYCLED WATER – DO NOT DRINK." Intermittent-pressure lines inside a structure must be identified by affixing decals to the piping at ten-foot intervals and wherever the piping changes directions. These decals must be purple in color and must be imprinted in nominal one-inch-high, black, uppercase letters, with the words "RECYCLED WATER – DO NOT DRINK," and must be adhesive, permanent, and resistant to environmental conditions.

Irrigation System Valve Boxes

All remote control valves, isolation valves, pressure reducing valves, and strainers for on-site recycled water systems must be installed below grade in a valve box. Green, black, or purple valve boxes and lids are acceptable for existing recycled water customers. New customers are required to install purple valve boxes and lids.

Valve boxes must have an advisory label or "nameplate" permanently molded into or affixed onto the lid with rivets, bolts, etc. Labels must be constructed of a purple weatherproof material with the wording "RECYCLED WATER - DO NOT DRINK - NO BEBER" permanently stamped or molded into the label.

Quick Coupling Valves



New quick coupling valves must be made specifically for recycled water use. New quick coupling valves must be 3/4-inch or one-inch nominal size and of brass construction with a minimum working pressure of 150 psi. The covers on all new quick coupling valves must be permanently attached and made of purple rubber or vinyl with the words "RECYCLED WATER" imprinted on the locking cover. To prevent unauthorized use, the valve must only be operated by a special coupler key for opening and closing the valve. New quick coupling valves must be installed approximately 12 inches from walks, curbs, header boards or paved areas. Quick coupling valves used in the recycled water system must be installed in a valve box and a recycled water identification tag must be permanently attached to the quick coupling valve or the inside of the box so that it is clearly visible when the box lid is removed.

Any wands, sprinkler heads, hoses, fittings, or other attachments used in conjunction with the quick coupling valves must be labeled with the words, "RECYCLED WATER - DO NOT DRINK." Attachments used in a recycled water system must not be used in a potable water system.

The installation of quick coupling valves on a potable water system in the vicinity of a recycled water irrigation system must be of a different type to prevent accidental cross-connection or contamination by accidentally interconnecting or interchanging attachments. Keys and attachments must not be interchangeable. Retrofitted sites with existing quick coupling valves must modify the quick coupling valves to meet the standards for new recycled water quick coupling valves.

Other Valves and Devices

Isolation Valves New and existing isolation valves must be installed in a marked valve box with a recycled water identification tag on the valve operator or, if the valve operator is too deep to reach, at the top of the valve box extension.

Remote Control Valves New and existing remote control valves must be installed in a marked valve box with a recycled water identification tag on the valve.

Pressure Regulating Valves and Strainers New and existing pressure regulating valves and strainers must be installed in a marked valve box with a recycled water identification tag on the valve/strainer.

Water Meters, Pumps, Pump Control Valves, Air/Vacuum Relief Valves New and existing water meters, pumps, pump control valves, and air/vacuum relief valves must be tagged with a recycled water identification tag.

Recycled Water Backflow Prevention Devices If applicable, new and existing backflow prevention devices must be tagged with a recycled water identification tag.

Potable Water System Devices At recycled water use sites where potable water is used, all potable water meters and above grade water devices, such as backflow prevention devices and hose bibs, must be tagged or labeled with potable water identification tags, or labels.

Identification Tags and Stickers

Identification tags and stickers must be weatherproof and durable, such as plastic or plastic coated.

Recycled water and potable water system identification tags and stickers must contain wording in English and Spanish per the City of Santa Rosa details.

Irrigation Controllers

New recycled water system irrigation controllers must be automatic with multiple programs and repeat start/stop times for any 24 hour period and installed according to the approved plans and local codes.

All recycled water system controllers must be identified by affixing a sticker or “nameplate” to the outside of the controller cabinet, the inside of the controller cabinet, or the outside or inside of the controller cabinet enclosure. Stickers or nameplates must be weatherproof, and must contain wording in English and Spanish per the City of Santa Rosa details indicating that the controller is for a recycled water system.

Irrigation Advisory Sign

All sites using recycled water must post clearly visible signs conforming to the City of Santa Rosa details and installed per the locations indicated on the approved plans.

Irrigation Systems at Fenced Facilities Advisory signs indicating the use of recycled water must be installed at all entrances to the User's facility per the City of Santa Rosa details. The City of Santa Rosa may require additional signing on a case by case basis.

Irrigation Systems at Facilities Not Surrounded by Fences Advisory signs must be placed where they can be easily seen. To the extent necessary to advise passersby, signs must be posted at the property line near crosswalks, at driveway entrances, at outdoor eating areas, or as otherwise determined by the City of Santa Rosa. The signs must conform to City of Santa Rosa details. Where required for aesthetic or corporate identity purposes, alternate color-coding schemes may be adopted subject to the approval of the City of Santa Rosa. Consult the City of Santa Rosa for final approval of signs using alternate color-coding.

Advisory Signs for Decorative Fountains, Ponds, and Other Water Features

The following are the minimum requirements for water feature signs:

- Minimum wording: "This ____ [insert type of water feature here, such as Fountain, Pond, etc.] Uses Recycled Water –Not for Drinking– [No Es Para Berber]."
- Minimum size: no less than 4 inches high by 8 inches wide.
- Must be permanently, legibly printed and posted in conspicuous places.
- Colors for lettering and background follow the same guidelines as for irrigation signs.

The City of Santa Rosa must be consulted for final approval of all signs, as well as the number of signs required per water feature and the placement of those signs.

Required Temporary Connection to Potable Water Service

In order to prevent cross-connections, a new or retrofit recycled water system is usually not allowed to receive recycled water until it has passed a required cross-connection test.

This means that the system must be supplied with water from a jumper (temporary connection) to an on-site potable water system up to and during the cross-connection test. After passing this test, the jumper must be removed and the system connected to the recycled water meter. Jumpers providing water from the public recycled water system into the on-site recycled water system, are prohibited at all times. Systems not needing a temporary potable water source are usually systems where there is no potable water at the site, such as some streetscapes and medians.

CONSTRUCTION INSPECTION

The City of Santa Rosa or designated representatives will conduct on-site inspections during the construction phase to ensure that materials, installation and procedures are in accordance with the approved plans, specifications, and all applicable regulations. Accordingly, the User must notify the City of Santa Rosa of the schedule for all phases of planning, construction and start up so that inspections can be scheduled. All constant-pressure piping of all systems must conform to the requirements of the UPC Sections 103.5.1 through 103.5.4.2.

Cross-Connection Test

The User must conduct a cross-connection test, and the User's site must pass this test, before connecting the User's recycled water system to the City of Santa Rosa's recycled water system at any use-site where both recycled and potable water are present in separate piping systems. This test is to ensure the absolute separation of the recycled and potable water systems. The User must notify the City of Santa Rosa at least 48 hours prior to the test so that the City and/or State DPH may be present.

The cross-connection test must be done under the supervision of the City of Santa Rosa and performed by an AWWA-certified Cross-Connection Control Specialist hired by the User.

The Site Supervisor must be present at the test. The test must be done with potable water charging the system *(see Required Temporary Connection to Potable Water Service on page 14).* A written report documenting the test results must be submitted by the certified Cross-Connection Control Specialist to the Site Supervisor and the City of Santa Rosa following test completion. Cross-connection test procedures are contained in *Appendix D.*

Final Inspection and Approval to Receive Recycled Water

Before the recycled water system is connected to recycled water, the City of Santa Rosa (or its designated representatives) will perform a final inspection to ensure all requirements have been met. This inspection may be coordinated with the cross-connection test. The City's Inspector will check to see that the proper equipment was used and that all required tags, labels, and signs are in place.

The City of Santa Rosa must grant final approval before recycled water can be supplied to the site. Final approval will be granted when construction has been completed in accordance with approved plans and specifications, all cross-connection tests have been performed, a final on-site inspection has been conducted, and all requirements have been met satisfactorily. The City will forward a copy of all test and inspection reports to State DPH as well as notification that recycled water service has started. During the lifetime of the recycled water system, the City of Santa Rosa will periodically inspect the recycled water system to ensure compliance with all applicable rules and regulations.

Irrigation System Coverage Test

The User is responsible for minimizing overspray and ponding and prohibiting runoff from their recycled water irrigation systems.

The User is responsible for minimizing overspray and ponding and prohibiting runoff from their recycled water irrigation systems – new or converted to recycled water. To ensure that any overspray, runoff, or ponding is in accordance with applicable rules and regulations, the City of Santa Rosa will conduct an inspection of the on-site system. After the on-site system begins receiving recycled water, the User or User's representative must contact the City of Santa Rosa to schedule a coverage test and walk through of the system. The User or User's representative must be in attendance and have persons in attendance capable of making system adjustments. If modifications to the system (other than minor adjustments) are required, the User will be notified in writing of the changes required. Any required modifications to the system must be made in a timely manner. All modifications to the system are the responsibility of the User, and the User must pay all costs associated with such modifications.

Record Drawings

The User must assure that the record drawings which show the recycled water system as constructed are prepared. These drawings must include all changes in the work constituting departures from the original construction plans including those involving both constant-pressure and intermittent-pressure lines and appurtenances. All conceptual or major design changes must be approved by the City of Santa Rosa before implementing the changes in the construction contract. The recycled water system record drawings must be submitted to the City within ninety (90) days of the site receiving recycled water.

3 OPERATION AND MAINTENANCE

General Requirements for Operation and Maintenance of a Recycled Water System

This section contains general requirements for the Operation and Maintenance of a recycled water system.

GENERAL USER RESPONSIBILITIES

Recycled water Users must agree to comply with and enforce the City of Santa Rosa rules and regulations for recycled water use, including the stipulations of the City Potable and Recycled Water Code, the Recycled Water Use Permit and this User Guide.

The User is responsible for maintaining and operating the on-site recycled water system downstream of the recycled water meter. This includes the following:

- Obtain all Permits required for the operation and maintenance of the on-site recycled water system.
- Assure that recycled water will be used only within the Use Area approved by the Permit and use will not extend to unapproved areas.
- Assure compliance with all Site Supervisor duties listed in *Site Supervisor Responsibilities on page 19.*
- Apply recycled water in accordance with the rules and regulations.
- Maintain the on-site recycled water system, including signs, markings, and tags in accordance with all City of Santa Rosa rules and regulations.
- Ensure all materials used during the repair and maintenance of the system are approved or recommended for recycled water use.
- Obtain prior authorization from the City of Santa Rosa before making any modifications to the approved recycled water system.
- Report all violations and emergencies to the appropriate local authority.
- Submit test reports for on-site backflow prevention devices, and at the service connection in accordance with the City Backflow Prevention Program.
- Submit Annual Self-Inspection Report.
- For irrigation systems, apply water according to the following standards:

  1. For systems with automatic control, routine irrigation will take place during the hours of 8 pm to 7 am to minimize wind drift and public contact; or at the time of minimal use of the area to minimize public exposure and maximize dry out time.

Recycled water Users must agree to comply with and enforce the City of Santa Rosa rules and regulations for recycled water use.

2. For manually operated systems or for system maintenance checks, operation may be performed at other times under supervision to avoid inadvertent exposure to the general public. No unattended operation of the system will take place outside the 8 pm to 7 am window.

3. Irrigation run times will be set to minimize ponding and prohibit runoff due to application rate exceeding soil infiltration rate. The repeat start time" function of the automatic controller will be used to apply water in short periods to allow the water to soak into the soil.

4. Irrigation will be applied at a rate that does not exceed the demand of the plants and does not exceed the field capacity of the soil. Irrigation will not occur at any time when uncontrolled runoff may occur, such as during times of rainfall or very low evapotranspiration.

System Modifications

To assure continued compliance with the City Recycled Water Standards and all applicable rules and regulations, the User must submit plans for modifications to any recycled water system to the City and receive authorization from the City before making any modifications to the approved recycled water system. The City of Santa Rosa will notify the User if any additional approval is required from other regulatory agencies and if any special procedures are required.

Permit Issuance

Prior to receiving recycled water service and finalizing the Recycled Water Use Permit, the User must meet the requirements established in *Section 2 – Design, Installation and Inspection.* Additionally, the User must designate a Site Supervisor who is responsible for attending the Site Supervisor Certification Training (which is conducted by the City or the City's designee) in accordance with the City of Santa Rosa's timeframe.

Site Supervisor Designation

The User must designate a representative to be the Site Supervisor of the recycled water use site. The Site Supervisor represents the Owner, tenant, or property manager as a liaison to the City of Santa Rosa. The Site Supervisor must have the authority to carry out any requirements of the City of Santa Rosa. Ideally, the Site Supervisor is an employee who is permanently stationed at the use site. Consideration will be given to Site Supervisors under contract with the User, and Site Supervisors who are not permanently at the use site. In all cases, the Site Supervisor or their designee must be available at all times.

Site Supervisor Training

The designated Site Supervisor must attend a Site Supervisor Certification Training, provided by the City of Santa Rosa, within the first 90 days of receiving recycled water service. Failure to attend the Site Supervisor Certification Training may result in the termination of recycled water service.

Changing The Site Supervisor

The User must notify the City of Santa Rosa immediately of any change in personnel for the Site Supervisor position. Upon a change in personnel, the new Site Supervisor must attend a Site Supervisor Certification Training within 90 days of the position change. Failure to attend the Site Supervisor Certification Training may result in the termination of recycled water service.

SITE SUPERVISOR RESPONSIBILITIES

The Site Supervisor:

- is responsible for the recycled water system at the site and for providing surveillance and supervision of the on-site recycled water system in a way that assures compliance at all times with the current regulations and Permit requirements.
- must be available, or have a designated staff person available, at all times to assure 24-hour system coverage and prompt response to operational issues.
- must have a 24 hour phone contact number for the City's use.
- is responsible for the operation, maintenance, and prevention of potential violations on the recycled water system.
- must manage the irrigation system to prevent runoff, overspray and off-site drift.
- must ensure that there are no cross-connections made between the potable and recycled water systems.
- must be present at all cross-connection tests.
- must have the authority to carry out the requirements of the Permit.
- must assure that all personnel involved with recycled water are trained prior to beginning work with recycled water, so they are familiar with the rules and regulations governing its use and will handle recycled water safely and responsibly.
- must immediately report to the City any changes in staffing or contact information to assure 24-hour availability to the City.
- must assure regular preventative maintenance and system inspections take place.
- must know the provisions contained in California Code of Regulations Title 17 and Title 22, relating to the safe use of recycled water and the maintenance of accurate records.
- must know the basic concepts of backflow and cross-connection prevention, system testing, and related emergency procedures.
- must conduct an annual self-inspection of the use-site and provide a written report to the City of Santa Rosa.
- must establish and maintain an accurate record keeping system of all inspections, modifications, repair work, employee trainings, permit documents, and communications with the City and regulatory agencies.
- must keep as-built drawings up to date.
- must immediately inform the City by phone of any failures, violations or emergencies that occur involving the recycle or potable water systems in the Approved Use Area.
- must be in regular communication with the City and at all times have phone contact information available to the City sufficient to assure the City that trained staff with the authority to carry out the requirements of the recycled water connection are available at all times.

Annual Self Inspection Report and Regular Monitoring

The City requires that recycled water Users conduct an inspection at least once per year while the recycled water system is in use.

The City of Santa Rosa will mail the report form to the Site Supervisor once a year. The Site Supervisor must submit the results to the City in the timeframe established by the City. Upon completion, the Site Supervisor must keep a copy of the report for their records.

To assure full compliance with the rules and regulations governing the use of recycled water, regular monitoring of any recycled water system is necessary. For irrigation systems, weekly or twice-monthly inspection is recommended. Inspection should include site observation for the following types of situations:

1. Is there evidence of recycled water runoff from the site? If so note location and nature of the problem.
2. Is there evidence of recycled water ponding, and/or evidence of mosquitoes breeding within the irrigation area due to ponded water?
3. Are warning signs, tags, stickers, and above ground pipe markings properly posted to inform the public that irrigation water is recycled water, which is not suitable for drinking?
4. Is there evidence of leaks or breaks in the irrigation system piping, or tubing?
5. Is there evidence of broken or otherwise faulty drip irrigation system emitters or spray irrigation sprinklers?

The City requires that recycled water Users conduct an inspection at least once per year while the recycled water system is in use.

Preventing Unauthorized Discharge

The Site Supervisor must follow all preventative maintenance and monitoring procedures to assure unauthorized discharge does not take place. In the event that a break in the recycled water distribution system is not detected and repaired according to the standards of this User Guide, the Site Supervisor must immediately turn off the recycled water system once the break is detected, and immediately contact the City.

Maintenance

The Site Supervisor is required to perform preventive maintenance to ensure that the recycled water system always remains in compliance with the rules and regulations of the City of Santa Rosa.

As part of a preventive maintenance program, the Site Supervisor should:

- Perform regular inspections of the entire recycled water system. For irrigation systems this includes sprinkler heads, drip irrigation system emitters, spray nozzles, piping and valves, pumps, storage facilities, controllers etc. Immediately repair all broken sprinkler heads, faulty spray patterns, leaking pipes or valves, or any other noted condition that violates the recycled water use requirements.
- Check all recycled water identification signs, tags, labels, and above grade pipe markings for their proper placement and legibility. Replace damaged, unreadable, or missing signs, tags, labels, and pipe markings.

- For irrigation systems, check the system spray patterns while the system is in operation to eliminate ponding, runoff and wind blown spray conditions. If evidence of ponding or runoff is noted, affected areas should be indicated on a sketch and sprinkler heads should be adjusted to prevent further ponding or runoff. County HSD regulations require that evidence of mosquitoes breeding within ponding should be noted and immediately eliminated.
- Establish and maintain an accurate record keeping system of all inspections, modifications and repair work.
- Assure that any device (hose, pipe, meter, quick coupler, etc.) which has been used in contact with recycled water will not be used to convey potable water or be attached to the potable water system.

Personnel Training

The Site Supervisor is responsible for training all personnel involved with recycled water so they are familiar with all applicable rules and regulations.

At a minimum, the training by the Site Supervisor should convey the following information:

- City of Santa Rosa recycled water, although highly treated, is non-potable and must never be used for human consumption.
- Regulations prohibit ponding, overspray and runoff of water from irrigation sites.
- Working with non-potable recycled water is safe if common sense is used and appropriate regulations are followed.
- Cross-connection between the recycled water system and potable water system is strictly prohibited by State law. Training will include cross-connection recognition and how a backflow condition can occur.
- The Site Supervisor oversees the use of recycled water on site and is the liaison with the City of Santa Rosa.

Training should also instruct personnel in proper procedures for reporting unauthorized discharges, managing the irrigation system to prevent runoff, overspray and off-site drift, identifying and correcting cross- connections, and modifying the system in the event of an earthquake or other disaster.

Permit Updates

If the property is transferred to a new owner or tenant, or a new Site Supervisor or landscape maintenance professional becomes responsible for system maintenance, the User must notify the City of Santa Rosa within 30 days in order to be in compliance with the conditions of their Permit.

Notification of System Operation Problems

In the event of a break in the system, low pressure, low flow, poor water quality, or any other significant change of condition of the recycled water system, the Site Supervisor must notify the City of Santa Rosa immediately.

Emergency Procedures

In case of earthquake, flood, fire, major freeze, nearby construction, or other incident, which could cause damage to the recycled or potable water systems, the Site Supervisor must inspect the domestic and recycled water systems for damage as soon as it is safe to do so.

If either system appears damaged, both the domestic and recycled water systems should be shut off at their points of connection.

The Site Supervisor must immediately contact the City of Santa Rosa for further instruction.

To prevent contamination, damage, or a public health hazard, the User may make emergency modifications or repairs without the prior approval of the City of Santa Rosa. As soon as possible after the modification (but within three days), the Site Supervisor must notify the City of Santa Rosa of the emergency modifications and file a written report.

SYSTEM RESPONSIBILITIES

The City of Santa Rosa is the Recycled Water Agency providing high quality recycled water at the appropriate pressure and quantity to the User. The City is responsible for the operation and maintenance of the recycled water system upstream of and including the recycled water meter, and for assuring compliance with all laws related to recycled water use. The City will:

- At all times have staff designated as the official contact for the Site Supervisor, including a 24-hour phone contact number for the Site Supervisor's use.
- Provide regular updates to the Site Supervisor on changes in regulations affecting the use of recycled water.
- Inspect the User's system as often as is necessary for compliance with State law and local rules and regulations.
- Provide initial and ongoing training to the Site Supervisor and the Site Supervisor's designee(s) on all facets of the recycled water system, including regulations, standards for installation and layout, maintenance, identifying and preventing cross-connections, emergency procedures and reporting.
- Be available to the Site Supervisor for training updates as requested by the Site Supervisor.
- Have record of Site Supervisor contact information, a copy of the use permit, and site-specific record of activities for each site served by recycled water.
- Take control of or disconnect the recycled water system if at any time operation of the system presents a threat to public health and safety.
- Confirm that, for sites that are dual plumbed, inspection for cross-connection is performed annually and that every four years a cross-connection test will be performed by an AWWA licensed Cross-Connection Control Specialist for which the results will be submitted to State DPH and the RWQCB within 30 days of the inspection.
- Notify the appropriate regulatory agencies in a timely manner if operation of the recycled water system results in violation of State law.
- Notify State DPH and the RWQCB within 24 hours of any discovery of a backflow incident from a dual-plumbed recycled water system into the potable water system.

INDUSTRIAL AND COMMERCIAL USES

Recycled water is approved by State DPH for a variety of commercial/industrial purposes such as cooling towers, boiler feed, air conditioning, commercial laundries, commercial car washes, concrete mixing, process rinsing, textile dying and toilet and urinal flushing in non-residential facilities.

Dual Plumbed Sites

Dual plumbed sites are sites where separate piping systems for recycled water and potable water are used within a facility and where the recycled water is used to serve plumbing outlets within a facility, or outdoor landscape irrigation at individual residences. The requirement for cross-connection tests described under *System Responsibilities on page 22* is also required for individual residences with recycled water irrigation systems.

Dual Plumbed Regulations

If recycled water is used inside a building, or for irrigation at individual residences, all dual plumbed regulations apply.

Visual Inspection and Cross-Connection Review

A visual inspection and thorough cross-connection review of all recycled water systems should be conducted annually by the Site Supervisor.

Cross-Connection Tests

For dual plumbed sites, once every four years, the User must have a cross-connection test performed by an AWWA certified Cross-Connection Control Specialist to verify that there is not a cross connection between the recycled water and potable water systems. The User must notify the City of Santa Rosa at least 48 hours in advance of the test in order for a City representative to be present if appropriate. The Site Supervisor must be present at the test. A sample Cross-Connection Test Notification Form is located in *Appendix E – Sample Forms.* The certified Cross-Connection Control Specialist must submit a written report documenting the test results to the Site Supervisor and the City of Santa Rosa.

For specific individual uses, other regulations may apply (Food and Drug Administration, OSHA). Contact the City of Santa Rosa for further information regarding industrial uses.

LANDSCAPE IMPOUNDMENTS

Recycled water can be used for a variety of landscape impoundments, including but not limited to golf-course ponds and decorative fountains. The biggest consideration when managing water features, whether potable or recycled, is the potential for algae growth. The User should develop a maintenance program, including adequate aeration, circulation, and chlorine application if necessary, to help minimize the growth of algae. Contact the City of Santa Rosa for further information regarding landscape impoundment maintenance.

CROSS-CONNECTIONS

A cross-connection is any physical connection between any part of a water system used or intended to supply water for drinking purposes and any source or system containing water or substance that is not or cannot be approved for human consumption. This includes direct piping between the two systems, regardless of the presence of valves, backflow prevention devices, or other appurtenances.

Notification of Cross-Connection

The Site Supervisor must immediately notify the City of Santa Rosa of any failure or cross-connections between the recycled water and potable water system, whether or not he/she believes a violation has occurred.

The Site Supervisor must also notify the City of Santa Rosa of any violation that might occur because of any action the User personnel might take during the operation of the recycled water or potable water systems. If there are any doubts whether a violation has occurred, the Site Supervisor must report each occurrence to the City of Santa Rosa so a decision can be made as to the need for further action.

Scheduling Future Cross-Connection Tests

Periodic cross-connection tests of dual plumbed systems must be performed by an AWWA certified Cross-Connection Control Specialist and the Site Supervisor must be in attendance during the test. These tests must be performed according to the procedure listed in *Appendix D – Cross-Connection Control Test Procedure for On-site Recycled Water Systems.*

Emergency Cross-Connection Procedures

In the event that a cross-connection is suspected or occurs, the following emergency cross-connection response plan must be implemented immediately.

Emergency Cross-Connection Response Plan

1. The User must notify the City of Santa Rosa contact person by telephone immediately. This notification must be followed by a written notice within 24 hours that includes an explanation of the nature of the cross-connection, date and time discovered, and the contact information of the person reporting the cross-connection.
2. The City of Santa Rosa will notify the County HSD, RWQCB and State DPH of the reported cross-connection.
3. The User must immediately shut down the recycled water supply to the facility.
4. The User must keep the potable system pressurized and post "Not for Drinking" signs at all potable water fixtures and outlets.
5. The User must provide bottled water for employees until the potable water system is deemed safe to drink.
6. The User must follow the procedures outlined by the County HSD, State DPH, and the City of Santa Rosa.

After final approval has been obtained from the County HSD and State DPH, the City of Santa Rosa will bring the recycled water system back into service and inform the User to remove the "Not for Drinking" signs from all potable water fixtures and outlets.

Contamination of Potable Water

If contamination of the potable water system is suspected or known, due to a cross-connection on the User's premises, the User must immediately notify the City of Santa Rosa. The User is to invoke immediately the *Emergency Cross-Connection Response Plan* described above.

Appendices

RECYCLED WATER PROGRAM

Appendix

A DEFINITIONS

Whenever the following terms (or pronouns used in their place) occur in this manual, the intent and meaning shall be interpreted as follows:

Approved Use — An application of recycled water in a manner, and for a purpose, designated in a Recycled Water Use Permit issued by the City of Santa Rosa and in compliance with all applicable Regulatory Agency requirements.

Approved Use Area — A site with well-defined boundaries designated on the approved site drawings, to receive recycled water for an approved use and acknowledged by all applicable Regulatory Agencies.

Cross–Connection — Any physical connection between any part of a water system used or intended to supply water for drinking purposes and any source or system containing water or substance that is not or cannot be approved for human consumption. This includes direct piping between the two systems, regardless of the presence of valves, backflow prevention devices, or other appurtenances.

Inspector — Any person authorized by the City of Santa Rosa or the local health agencies to perform inspections on or off the User's site before construction, during construction, after construction and during operation.

Intermittently Pressurized Line — Also known as a "lateral," it is the pipe section(s) between the irrigation control valve and the sprinkler head or drip emitters.

Landscape Impoundment — A body of recycled water used for aesthetic enjoyment or which otherwise serves a function not intended to include public contact.

Lateral — See "INTERMITTENTLY PRESSURIZED LINE"

Nonpotable Recycled Water or Recycled Water — Water that meets California Administration Code Title 22, Division 4 of the Environmental Health Water Reclamation Criteria and is approved for purposes other than human consumption. For the purpose of these rules and regulations, "recycled water" refers to "Nonpotable recycled water."

Nonpotable Water — Water that has not been treated for human consumption in conformance with the latest edition of the United States Public Health Service Drinking Water Standards, the California Safe Drinking Water Act, or any other applicable standards.

Off–Site Designates or relates to facilities including and upstream of the recycled water meter.

Off–Site Drift The drift of recycled water outside of the approved irrigation area.

On–Site Designates or relates to all irrigation facilities downstream of the recycled water meter.

Overspray The spray of recycled water outside of the approved irrigation area.

Owner Any holder of legal title, contract purchaser, or lessee under a lease with an unexpired term of more than one (1) year, for property for which recycled water service has been requested or established.

Point of Connection This is the point where the User's system ties to the City of Santa Rosa's system. This is usually at the water meter.

Ponding Unauthorized retention of recycled water on the surface of the ground or other natural or manmade surface for a period following the cessation of an approved recycled water use activity.

Potable Water Water that is authorized for human consumption according to the latest edition of the California Safe-Drinking Water Act, or other applicable standards.

Potable Water Facility Any facility, including fire service, used to convey potable water.

Public Any person or persons other than the site Owner or employees who may come in contact with facilities and/or areas where recycled water is approved for use.

Recycled Water Use Permit A permit issued to the User by the City of Santa Rosa as required by State DPH and the RWQCB that defines the conditions of recycled water service.

Reduced Pressure Principal Backflow Prevention Device A type of backflow prevention device, usually installed near a water meter, which prevents backflow in to the source system by a combination of double check valves and a pressure differential relief valve, with a resilient seated shutoff valve on each end of the device.

Regulatory Agencies Those public agencies legally constituted to protect the public health and water quality, and whose rules govern the use of recycled water, such as the State DPH, the RWQCB and the County HSD.

Restrained Joint A joint incorporated with a restraining mechanism to be used at cross-sectional and directional pipeline changes to eliminate the potential for pipe separation due to internal pressures.

Runoff Recycled water that is allowed to drain outside the approved Use Area.

Service The furnishing of recycled water to a User through a metered connection to the onsite facilities.

Site Supervisor The responsible person designated by the User to provide liaison with the City of Santa Rosa. This person must have the authority to carry out any requirements of the City of Santa Rosa, must be responsible for the operation and maintenance of the recycled water system, and must prevent potential violations.

Standard Pipe Length A section of pipe 18 to 20 feet in length that has no joints.

Surface Water Any water body that flows over or stands on the surface of the ground, including lakes, rivers, streams, oceans, vernal pools and creeks. Approved recycled water landscape impoundments, such as decorative fountains, decorative ponds, recycled water storage ponds and other water features, are not defined as surface water.

Unauthorized Discharge Any release of recycled water that violates the rules and regulations of the Water Utility, the Local Authority, the City of Santa Rosa or all applicable Federal, State or local statutes, regulations, ordinances, contracts or other requirements.

User Any person, persons or firm issued a Recycled Water Use Permit by the City of Santa Rosa. They may be the Owner, tenant, or property manager as appropriate.

Violation Noncompliance with any condition of the Recycled Water Use Permit by any person, action or occurrence, intentional or unintentional.

Appendix

B CITY OF SANTA ROSA STANDARD NOTES FOR ON–SITE RECYCLED WATER IRRIGATION SYSTEMS

1. PRIOR TO RECEIVING RECYCLED WATER, THE SITE MUST BE PERMITTED BY THE CITY OF SANTA ROSA. PERMIT REQUIREMENTS INCLUDE:

   - INSPECTION BY THE CITY OF SANTA ROSA TO CONFIRM CONFORMANCE WITH THE CITY OF SANTA ROSA RULES AND REGULATIONS;
   - A FINAL ON-SITE INSPECTION TO CONFIRM THAT ALL REQUIREMENTS HAVE BEEN MET;
   - SITE MUST PASS REQUIRED CROSS-CONNECTION TEST PERFORMED BY A CERTIFIED AWWA CROSS-CONNECTION CONTROL SPECIALIST (IF NO POTABLE WATER LINES CROSS THE SITE, THEN REQUIRED CROSS-CONNECTION TEST IS WAIVED);

   THE USER'S DESIGNATED SITE SUPERVISOR MUST COMPLETE THE SITE SUPERVISOR TRAINING OFFERED BY THE CITY OF SANTA ROSA AS A CONDITION OF THE PERMIT. FAILURE TO COMPLY MAY RESULT IN TERMINATION OF RECYCLED WATER SERVICE.

   CONTACT THE CITY OF SANTA ROSA AT (707) 543-4200 FOR FURTHER INFORMATION.

2. ALL WORK SHALL CONFORM TO EXISTING REGULATIONS INCLUDING BUT NOT LIMITED TO:

   - CITY OF SANTA ROSA RECYCLED WATER USER GUIDE
   - CITY OF SANTA ROSA WATER CODE
   - STATE DPH REGULATIONS

3. CHANGES MADE TO THE APPROVED IRRIGATION PLANS SHALL BE SUBMITTED TO CITY OF SANTA ROSA FOR REVIEW AND APPROVAL AT LEAST 2 WEEKS PRIOR TO START OF CONSTRUCTION.

4. AT LEAST TWO DAYS PRIOR TO START OF CONSTRUCTION, CONTRACTOR AND THE CITY OF SANTA ROSA INSPECTOR SHALL HOLD A PRE-CONSTRUCTION MEETING. TO SCHEDULE MEETING, CONTACT THE CITY OF SANTA ROSA AT (707) 543-4200.

5. NOTIFY THE CITY OF SANTA ROSA INSPECTOR A MINIMUM OF 48 HRS BEFORE WORK BEGINS. THE CITY OF SANTA ROSA INSPECTOR MUST INSPECT AND/OR VERIFY:

   - PRESENCE OF PROPER BACKFLOW PREVENTION AT ALL POTABLE POINTS OF CONNECTION;
   - NEW UNDERGROUND PIPING (LABELING, CLEARANCES, BURIAL DEPTH, SLEEVING);
   - INSTALLATION OF SIGNS, TAGS, AND CONTROLLER DECALS;
   - REQUIRED TEMPORARY CONNECTION TO POTABLE WATER SERVICE; IN MOST CASES, THE SITE'S IRRIGATION SYSTEM MUST BE CONNECTED TO A TEMPORARY SOURCE OF POTABLE WATER IN ORDER TO CONDUCT REQUIRED CROSS-CONNECTION TEST;

- SITE PASSED REQUIRED CROSS-CONNECTION TEST PERFORMED BY A CERTIFIED AWWA CROSS-CONNECTION CONTROL SPECIALIST (IF APPLICABLE).
- NEW METER INSTALLATION - PRIOR TO RECEIVING RECYCLED WATER, THE CITY OF SANTA ROSA INSPECTOR MUST INSPECT THE DISCONNECTION OF THE SITE'S IRRIGATION SYSTEM FROM THE TEMPORARY POTABLE WATER SUPPLY, AND THEN INSPECT THE CONNECTION OF THE SYSTEM TO THE RECYCLED WATER METER.

6. NO CROSS-CONNECTIONS BETWEEN THE POTABLE OR ANY OTHER WATER SYSTEM AND RECYCLED WATER SYSTEMS ARE PERMITTED.

7. ALL ON-SITE BURIED RECYCLED WATER PIPING SHALL BE IDENTIFIED BY ONE OF THE FOLLOWING METHODS:

   - USING PURPLE-COLORED PVC PIPE WITH CONTINUOUS WORDING: "CAUTION – RECYCLED WATER" PRINTED ON OPPOSITE SIDES OF THE PIPE; PIPE SHALL BE LAID WITH WORDING FACING UPWARDS.
   - WARNING TAPE WITH A MINIMUM WIDTH OF 3 INCHES READING: "CAUTION – RECYCLED WATER" (IN BLACK OR WHITE LETTERING ON PURPLE BACKGROUND) SHALL RUN CONTINUOUSLY ON TOP OF PIPING AND SHALL BE ATTACHED TO PIPING WITH PLASTIC TAPE BANDED AROUND THE WARNING TAPE AND THE PIPE EVERY 5 FEET ON CENTER.

8. PVC PIPE: CONSTANT-PRESSURE MAINLINE PIPING 1½ INCHES AND SMALLER SHALL BE SCHEDULE 40; CONSTANT-PRESSURE MAINLINE PIPING 2 INCHES AND LARGER SHALL BE CLASS 315; INTERMITTENT-PRESSURE LATERAL PIPING SHALL BE CLASS 200 OR SCHEDULE 40. COPPER PIPE SHALL BE TYPE "K".

9. ALL ON-SITE RECYCLED WATER PIPING SHALL BE BURIED TO A MINIMUM DEPTH FROM FINISHED GRADE TO TOP OF PIPE (MINIMUM COVER) OF:

   - PRESSURIZED LINES 3 INCHES AND LARGER — 24 INCHES
   - PRESSURIZED LINES 2 ½ INCHES AND SMALLER — 18 INCHES
   - INTERMITTENT-PRESSURE LINES — 12 INCHES

10. ALL RECYCLED WATER PIPING OTHER THAN PVC PIPING WITH SOLVENT WELDED JOINTS SHALL BE PROTECTED AGAINST MOVEMENT WITH THRUST BLOCKS OR RESTRAINED JOINTS OR OTHER APPROVED METHOD PER CITY OF SANTA ROSA DETAILS.

11. MAINTAIN A 10-FOOT HORIZONTAL SEPARATION AND 1-FOOT VERTICAL SEPARATION BETWEEN BURIED PRESSURIZED RECYCLED WATER IRRIGATION PIPING AND BURIED POTABLE WATER PIPING UNLESS OTHERWISE NOTED. AT PIPE CROSSINGS, BURIED PRESSURIZED RECYCLED WATER IRRIGATION PIPING MUST BE 12 INCHES BELOW POTABLE WATER LINES. PRESSURIZED RECYCLED WATER PIPE LINES ARE ALLOWED OVER POTABLE WATER PIPELINES WITH A MINIMUM OF 12 INCHES VERTICAL SEPARATION IF A FULL STANDARD PIPE LENGTH IS CENTERED OVER THE CROSSING, OR THE RECYCLED WATER PIPELINE IS INSTALLED IN A PIPE SLEEVE WHICH EXTENDS A MINIMUM OF 10 FEET ON EITHER SIDE OF THE POTABLE WATER PIPING. INTERMITTENTLY PRESSURIZED IRRIGATION LATERALS MAY BE LOCATED A MINIMUM OF 12 INCHES ABOVE POTABLE WATER PIPELINES WITHOUT SLEEVING.

12. ALL RECYCLED WATER SYSTEM REMOTE CONTROL VALVES, ISOLATION VALVES, QUICK COUPLING VALVES, STRAINERS, AND PRESSURE-REGULATING VALVES SHALL BE INSTALLED BELOW GRADE IN VALVE BOXES. GREEN, BLACK, OR PURPLE COLORED BOXES AND LIDS ARE ACCEPTABLE FOR EXISTING CUSTOMERS. NEW CUSTOMERS ARE REQUIRED TO INSTALL PURPLE-COLORED BOXES AND LIDS. VALVE BOXES SHALL HAVE A WARNING LABEL OR NAMEPLATE PERMANENTLY MOLDED INTO OR ATTACHED ONTO THE LID WITH RIVETS, SCREWS, OR BOLTS. WARNING LABELS SHALL BE PER CITY OF SANTA ROSA STANDARD DETAILS.

13. RECYCLED WATER QUICK-COUPLING VALVES SHALL HAVE A PURPLE COVER AND BE IDENTIFIED PER CITY OF SANTA ROSA STANDARD DETAILS.

14. NO HOSE BIBS ARE ALLOWED ON THE RECYCLED WATER IRRIGATION SYSTEM. ANY EXTERIOR HOSE BIBS SERVED WITH POTABLE WATER MUST BE LABELED PER CITY OF SANTA ROSA STANDARD DETAILS.

15. ALL RECYCLED WATER METERS, DEVICES, AND VALVES – E.G. ISOLATION VALVES, IRRIGATION CONTROLLERS, REMOTE CONTROL VALVES, PRESSURE REGULATING VALVES, QUICK COUPLING VALVES, ETC. – SHALL BE TAGGED PER CITY OF SANTA ROSA STANDARD DETAILS.

16. LABEL ALL POTABLE WATER METERS AND ABOVE GROUND POTABLE WATER PIPES/DEVICES (BACKFLOW PREVENTERS, HOSE BIBS, ETC.) WITH TAGS OR LABELS READING: “POTABLE WATER” IN BLACK LETTERS ON BLUE BACK GROUND, PER CITY OF SANTA ROSA DETAILS.

17. ALL RECYCLED WATER IRRIGATION SYSTEMS SHALL HAVE THE FOLLOWING:

    - A WYE STRAINER (WITH A 20-MESH OR FINER SCREEN) INSTALLED AS CLOSE AS PRACTICABLE TO THE RECYCLED WATER METER BOX.
    - A PRESSURE -REGULATING VALVE INSTALLED IMMEDIATELY DOWNSTREAM OF THE STRAINER (UNLESS OTHERWISE DIRECTED BY THE CITY OF SANTA ROSA).
    - THESE COMPONENTS SHALL BE INSTALLED WITH ISOLATION VALVES TO FACILITATE MAINTENANCE.

18. RECYCLED WATER ADVISORY SIGNS CONFORMING TO THE DETAILS AND SPECIFICATIONS ON THE CITY OF SANTA ROSA-APPROVED IRRIGATION PLANS SHALL BE POSTED PER LOCATIONS SHOWN ON THOSE IRRIGATION PLANS.

19. INSTALLATION OF DIRECT INJECTION SYSTEMS ON THE RECYCLED WATER IRRIGATION SYSTEM IS ONLY PERMITTED IF A REDUCED PRESSURE BACKFLOW PREVENTION DEVICE IS ALSO INSTALLED ON THE SYSTEM.

20. NO DRINKING FOUNTAINS OR EATING AREAS ARE ALLOWED IN THE APPROVED RECYCLED WATER USE AREA UNLESS ADEQUATELY PROTECTED FROM OVERSPRAY.

21. ALL RECYCLED WATER METERS WILL BE SET BY THE CITY OF SANTA ROSA AFTER:

    - THE SITE’S OWNER, DEVELOPER, OR CONTRACTOR HAS APPLIED FOR RECYCLED WATER SERVICE, ALL APPLICABLE FEES HAVE BEEN PAID, AND THE RECYCLED WATER USE PERMIT HAS BEEN SIGNED BY THE CITY AND THE USER.

- THE CITY OF SANTA ROSA INSPECTOR MUST INSPECT THE DISCONNECTION OF THE SITE'S RECYCLED WATER SYSTEM FROM THE TEMPORARY POTABLE WATER SUPPLY, AND THEN INSPECT THE CONNECTION OF THE SYSTEM TO THE RECYCLED WATER METER.

22. NO OVERSPRAY OR RUNOFF OF RECYCLED WATER IS ALLOWED ON ANY NON-APPROVED USE AREA. PONDING OF RECYCLED WATER DUE TO IRRIGATION IS NOT ALLOWED IN ANY AREA. UPON RECEIVING RECYCLED WATER, THE ON-SITE RECYCLED WATER IRRIGATION SYSTEM MUST PASS A COVERAGE TEST CONDUCTED BY THE CITY OF SANTA ROSA INSPECTOR.

23. THE USER IS RESPONSIBLE FOR THE SUBMITAL OF AS-BUILT IRRIGATION PLANS TO THE CITY OF SANTA ROSA WITHIN 90 DAYS OF SITE RECEIVING RECYCLED WATER.

City of Santa Rosa
Utilities Department

RECYCLED WATER STANDARDS

Adopted by the Santa Rosa City Council
Resolution No. 26962
October 23, 2007

TABLE OF CONTENTS

I.

RECYCLED WATER SYSTEM

DESIGN STANDARDS

Table of Contents

RECYCLED WATER SYSTEM DESIGN STANDARDS

I. PURPOSE

This document provides procedures and guidelines for the preparation of plans and specifications for construction of urban recycled water facilities for the City of Santa Rosa. Adherence to these procedures and guidelines will reduce the time required for processing the plans. These guidelines do not include, but may reference, additional conditions that may be promulgated by all other pertinent ordinances, codes, and official policy set forth by the Utilities Department or other departments of the City of Santa Rosa or other government agencies. These guidelines establish minimum acceptable design criteria. More stringent requirements may be imposed by the Director of Utilities based on specific project conditions.

The design engineer's responsibilities include submitting a written request to the Director of Utilities for approval of any design concepts that differ from these criteria, verifying additional requirements imposed, performing any necessary calculations or studies, and resolving specific design problems with the appropriate agency, department, or division.

II. REQUIREMENTS FOR IMPROVEMENTS AND SUBDIVISION MAPS

A. Provide a detailed utility plan showing onsite and offsite public and private recycled water systems, including mains, services, valves, and all other required appurtenances, and their connections to existing City-maintained recycled water facilities. Show the location, type, and diameter of public and private recycled water mains.

B. Onsite recycled water facilities shall be clearly denoted in accordance with the requirements of the City's Recycled Water User's Guide.

C. Annotate the local agency information sheet of the Subdivision Map with any information that is needed to notify property owners of requirements for connection to the City water system. These include, but are not limited to:

1. Payment of fees prior to issuance of Building Permits,

2. Lots requiring pressure regulating valves or booster pumps,

3. Backflow protection,

4. Public access requirements, such as gates or access roads.

The appropriate information may be obtained from Utilities Engineering.

III. RECYCLED WATER MAINS – GENERAL

A. Under no circumstances will cross-connection between the potable water system and the recycled water system be allowed.

B. Public recycled water mains may not be designed outside the street right-of-way without Director of Utilities approval.

C. In general, publicly maintained recycled water facilities will be designed only where they serve multiple ownership lots and where appropriate access for maintenance can be provided.

D. Recycled water mains installed at a slope of 15% or greater will be designed with restrained joints. The Design Engineer must provide adequate drainage measures to protect the trench from erosion.

E. Recycled water mains installed outside of any roadway, called "cross-country mains," must have suitable access. In general, cross-country mains must be isolated with valves in the public right-of-way and must be identified with purple locating posts (Carsonite 492 CW-112 or approved equal) at approximate 500-foot intervals, at any angle point, and at the entrance to an easement. Stakes should have vandal-proof metal bottoms. Access requirements as established in Section XIV of the Sewer System Design Standards may be imposed on a project based on site conditions.

F. For purposes of leak detection and maintenance access, no reinforced concrete may be designed over publicly maintained recycled water facilities. Un-reinforced concrete will be allowed under special circumstances such as crosswalks.

G. Extent of recycled water main improvements will be as follows:

1. Any off-site recycled water main improvements needed to serve the project must be shown on the improvement plans.

2. In general, recycled water mains must be designed at least across one half of the property frontage or to the last service connection, whichever is greater; or

3. Where the project is required to provide new street improvements over the recycled water main alignment and the recycled water main will serve properties beyond the project limits, the recycled water main must be designed to cross the full property frontage or to the limits of the street improvements, whichever is greater.

H. Streets with water, recycled water, and sewer mains must be at least 25 feet wide, face-of-curb to face-of-curb. Streets with recycled water and either sewer or potable water must be at least 20 feet wide, face-of-curb to face-of-curb. Streets with only a recycled water main must be at least 16 feet wide. No recycled water mains may be installed in alleys.

I. Restrained Joints

1. For pipes with diameters 16-inch and greater, restrained joints shall be used at horizontal and vertical bends, at curves and at flanges. Restrained joints will also be used on piping on either side of a restrained or blocked bend to provide restraint utilizing soil friction. A rational method, such as the DIPRA design program, will be utilized to determine restrained lengths.

2. Restrained joints shall be ductile iron in accordance with the applicable requirements of the ANSI/AWWA C111/A21.11 and ANSI/AWWA C153/a21.53 of latest revision and shall be compatible with the type and pressure class of pipe used.

J. Recycled water mains shall not be designed with laterals for fire hydrants, wharf heads, or other appurtenances that would allow recycled water to be used for other than approved uses unless expressly approved by the Director of Utilities.

K. Recycled water mains shall not be designed with temporary connections unless expressly approved by the Director of Utilities. When permitted, temporary connections shall be designed in accordance with this document.

L. Thrust Blocks

1. Thrust blocks, shall be used on pipe with diameters less than 16 inches at horizontal bends in accordance with City Standard 854.

2. Concrete anchor bolts for vertical bends in pipes with diameters 12 inches and less shall be in accordance with City Standard 853.

3. Harness installations for pipes with diameters 12 inches and less shall be in accordance with City Standard 852.

4. Harness installations flange fittings for pipes with diameters 12 inches and less shall be in accordance with City Standard 851.

M. A combination of thrust blocking and restrained joints may be required in unique situations and/or as required by the City.

IV. MATERIALS

A. Labeling

1. Buried pipes and service laterals used for recycled water shall be clearly identified by using purple pipe with continuous wording "RECYCLED WATER – DO NOT DRINK" printed on opposite sides of the pipe. Where purple pipe cannot be used, the pipes shall be installed with warning tape.

2. The plastic warning tape shall be prepared with black or white printing on a purple field having the words, "RECYCLED WATER - DO NOT DRINK". The overall width shall be a minimum of 3 inches.

3. Warning tapes shall be installed directly on the top of the pipe longitudinally and shall be centered. The warning tape shall be installed continuous for the entire length of the pipe and shall be fastened to each pipe length by plastic tape banded around the pipe with fasteners no more than 5 feet apart. Taping attached to the sections of pipe before installation in the trench shall have flaps sufficient for continuous coverage.

4. All above grade recycled water pipe and service laterals must be labeled with the words "RECYCLED WATER – DO NOT DRINK" and color coded purple to differentiate recycled water pipelines from potable and other water pipelines. If purple identification tape is used to label the pipe and/or color code the pipe, the tape must be adhesive, permanent, and resistant to environmental conditions. Purple bands may also be painted around the circumference of the pipe at 10-foot intervals. Purple PVC pipe is not acceptable for color coding in exposed environments because the color will fade in the sunlight.

5. No. 12 Insulated copper wire shall be laid on top of and along entire length of all new buried pipes and shall be extended to the surface at all valve locations, blowoffs and meter boxes sufficiently for locator equipment to be attached.

B. Recycled water service laterals 1.5-inch diameter and smaller will be fusible polyvinyl chloride (PVC) pipe, Schedule 40, or copper tubing, Type K minimum. All other recycled water service laterals will be gasketed joint or fusible PVC pipe, Class 315 or greater.

C. Recycled Water Mains: 4-inch to 12-inch Diameter

1. Gasketed joint or fusible polyvinyl chloride (PVC) pipe, Pressure Class 150 minimum, per AWWA Standard C900.

2. Ductile iron pipe (DIP) fittings, Pressure Class 350, per AWWA Standard C151.

3. Where normal static mainline pressure exceeds 100 psi, pipe, and fittings shall be rated for 200 psi minimum.

4. Ductile Iron Pipe (DIP) shall be used within delineated fault zones and extend to 100 feet outside each side of the delineated fault boundaries.

D. Recycled Water Mains: 16-inch and 18-inch Diameter

1. Gasketed joint or fusible polyvinyl chloride (PVC) pipe, Pressure Class 165 minimum, per AWWA Standard C905.

2. Ductile iron pipe (DIP) fittings, Pressure Class 250, per AWWA Standard C151.

3. Where normal static mainline pressure exceeds 100 psi, pipe and fittings shall be rated for 200 psi minimum.

4. Ductile Iron Pipe (DIP) shall be used within delineated fault zones and extend to 100 feet outside each side of the delineated fault boundaries.

E. Recycled Water Mains: 20-inch Diameter and Larger

1. Gasketed joint or fusible polyvinyl chloride (PVC) pipe, Pressure Class 165 minimum, per AWWA Standard C905.

2. Tape-wrapped Steel Pipe per AWWA Standard C200, design pressure of 150 psi minimum.

3. Ductile iron pipe (DIP) and fittings, Pressure Class 250 minimum, per AWWA Standard C151.

4. Concrete cylinder pipe per AWWA Standard C303, design pressure of 150 psi minimum.

5. Ductile Iron Pipe (DIP) shall be used within delineated fault zones and extend to 100 feet outside each side of the delineated fault boundaries.

V. CONNECTION TO AN EXISTING PUBLIC RECYCLED WATER MAIN

A. Under no circumstances will cross-connection between the potable water system and the recycled water system be allowed.

B. Indicate a “hot tap” for connection of recycled water service laterals 2-inch in diameter and smaller.

C. Indicate connection of pipes 4-inch - 12-inch in diameter with a hot tap or a cut-in tee in conformance with the provisions of the Water System Construction Standard Specifications Section 99-1.20. Hot taps will be allowed only when no main line valves are required.

D. Tie-ins to the existing City recycled water system must be inspected by a Utilities Department representative and the improvement plans must be so annotated.

E. Size-on-size taps are allowed up to 8-inch diameter mains.

F. In most major streets, or where the street surface is less than five years old, installation methods other than open cutting may be required. The Encroachment Officer or the City Engineer as appropriate will determine the requirements based on the condition of the existing street.

VI. ALIGNMENT

A. Horizontal

1. Except for crossings, a minimum horizontal distance of 10 feet clear shall be maintained between potable water mains and the recycled water mains and service laterals. If a 10-foot horizontal separation is not feasible, a separation of at least 4 feet may be allowed subject to special construction conditions. (Designers should consult the City of Santa Rosa for specific design requirements.) In no case is horizontal separation of less than 4 feet or construction in the same trench as potable facilities allowed.

2. The minimum horizontal separation from storm drains, gas, electrical, telephone and communications lines shall be 4 feet clear except at crossings.

3. Recycled water mains shall be designed a minimum of 5 feet from all structures, such as manholes or drop inlets.

4. Recycled water mains shall be designed a minimum of 3 feet clear from the lip of gutter and 5 feet clear from the edge of easements.

5. In the event that it is not possible to maintain the required separations and relative positions between recycled water mains and service laterals, potable water lines and sanitary sewer lines, special design shall be required and approved by the Director of Utilities.

6. Recycled water main crossings over or under other underground facilities will be designed as close to 90 degrees to the facility as possible.

7. Recycled water mains shall be designed with service laterals perpendicular to the main.

B. Vertical

1. Recycled water mains shall be designed with the ability to generally drain to blowoffs. Consult with the City of Santa Rosa for specific design requirements.

2. Provide a minimum of 6 inches vertical separation from storm drains or other underground utilities such as telephone, communication, gas, or electrical conduit.

3. Pothole and survey utilities or other structures critical to vertical alignment.

4. Where it is necessary to lower or raise either the recycled water main or the existing potable water main because of a vertical conflict, the main that is smaller shall be chosen for the deviation; however, the deviation shall be such that the potable water main is placed above the recycled water main. If the recycled water main must go over an existing potable water main approval from the Director of Utilities is required, and a continuous (no joints or valves) section shall be used. It shall clear the potable water main by 12 inches and shall extend to 10 feet clear on either side of the potable water main.

5. Recycled water mains over or under other utilities shall be in accordance with Santa Rosa City Standards 855 and 856, except that PVC pipe shall be allowed with ductile iron fittings.

VII. MAIN SIZING CRITERIA

A. Recycled water mains will be sized in accordance with the City's predesign for the urban reuse system. Variation from the urban reuse system predesign will require special permission from the Director of Utilities.

B. Recycled water mains will be sized based on a peaking factor of 10 applied to the annual average demand rate, and a maximum velocity of 5 feet per second.

C. Recycled water mains shall be 4-inch diameter minimum.

VIII. MINIMUM MAIN/LATERAL COVER

A. Depth of cover is defined as the distance from the top of the pipe to the final finished grade measured directly over the pipe. Minimum depth of cover shall be as follows:

1. Service laterals shall have minimum cover as shown on City Standard Details.

2. Mains of 4-inch, 6-inch And 8-inch diameter shall have 36 inches of minimum cover.

3. Mains of 12-inch diameter shall have 42 inches of minimum cover.

4. Mains of 16-inch diameter or larger shall have 48 inches of minimum cover.

B. When within 10 feet of separation from a potable water main, the depth of the recycled water pipe shall provide for 1 foot of vertical separation with the recycled water main beneath the potable water main.

C. Where minimum cover is less than standard or greater than 8 feet, special permission from the Director of Utilities is required. Show mains with non-standard cover in profile on the Improvement Plans or Encroachment Permit applications. Where cover is less than the Standard, higher class pipe, ductile iron pipe, and use of controlled density fill may be required.

IX. RECYCLED WATER VALVING

A. Valves - General

1. A minimum of two (2) mainline valves are required for "T" intersections.

2. A minimum of three (3) mainline valves are required for cross intersections.

3. Any recycled water main that does not have a lateral connection will have valves at approximately 1,000-foot intervals.

4. Recycled water main valves must be located outside of concrete areas whenever possible to facilitate repairs.

5. Cross-country mains must be isolated with valves in the public right-of-way and must be identified with locating posts at 500-foot intervals, at any angle point and at the entrances to easements.

6. All valves must be tagged with a recycled water identification tag with the words "WARNING – RECYCLED WATER – NOT FOR DRINKING" on one side and "AVISO – NO ES PARA BEBER" on the other. Identification tags shall be permanent plastic tags affixed to the valve designed to withstand exposure to weather, sunlight, and immersion.

B. Gate Valves

1. Gate valves shall comply with City Standard 877.

2. Gate valves shall conform to AWWA Standard C509 of the latest revision and shall be the resilient seat type with non-rising stem opening counter clockwise with O ring stem seal and suitable ends for connecting to the type of pipe or fitting used.

3. The working pressure rating of the gate valves shall meet or exceed the pressure rating of the pipe.

4. External bolts and nuts shall be 304 stainless.

C. Butterfly Valves

1. In general, butterfly valves will not be allowed without special permission from the Director of Utilities, and only when the depth of the main precludes the use of a gate valve.

2. Butterfly valves shall comply with City Standard 878.

3. Butterfly valves shall be flanged or mechanical joint type only and shall conform to AWWA Standard C504 of the latest revision and shall be the rubber seat type.

4. Valve discs shall rotate 90 degrees from the full open position to the tight shut position.

5. The valve seat shall provide a tight shut off at a pressure differential of 150 psi upstream and 0 psi downstream in either direction.

6. The valve operator shall be the traveling nut type.

7. Valve shall open with a counter-clockwise rotation of the operating nut.

8. External bolts and nuts shall be 304 Stainless.

D. Valve Boxes

1. Valve boxes shall be taken from the City Design and Construction approved list.

2. Valve stem riser shall be SDR 35 purple PVC pipe.

3. Valve boxes shall be purple and have a warning label permanently molded into the cover. Warning labels shall be constructed of a weatherproof material with the warning permanently stamped or molded into the label and having the words, "RECYCLED WATER - DO NOT DRINK".

X. SERVICE LATERALS AND METERS FOR IRRIGATION SERVICE

A. Under no circumstances will cross-connection between the potable water system and the recycled water system be allowed.

B. All service meters must be tagged with a recycled water identification tag with the words "WARNING – RECYCLED WATER – NOT FOR DRINKING" on one side and "AVISO – NO ES PARA BEBER" on the other. Identification tags shall be permanent plastic tags affixed to the valve designed to withstand exposure to weather, sunlight, and immersion.

C. Conditioned developments will be provided City recycled water service via meters located at the frontage of a public street.

D. The City may allow meters to be located on private street frontages and/or within public utility easements if the City Utilities Dept. evaluation concludes that it is reasonable under the circumstances. However, meters must be readily accessible.

E. Design meter boxes out of traveled ways and a minimum of 10 feet from street trees whenever possible. Meter boxes shall be purple and have a warning label permanently molded into or affixed onto the cover with rivets, bolts, etc. Warning labels shall be constructed of a weatherproof material with the warning permanently stamped or molded into the label and having the words, "RECYCLED WATER - DO NOT DRINK".

F. Base any required hydraulic calculations for the water meter and service lateral sizes on criteria from AWWA Manual M22 and submit to the Director of Utilities for approval. Service laterals shall be 3/4-inch diameter, minimum.

G. The maximum velocity in recycled water service laterals from the main to the meter is 15 feet per second.

H. Meter manifolds other than those shown in various City Standard Plans will be detailed on the plans and approved by the Utilities Department, Engineering Division.

I. Multi-Family Residential (3 or more units)

1. See Section X-L for irrigation meter requirements for any landscaped or common areas.

2. All meters must be within public right-of-way or easements and multiple meters will be clustered where possible.

J. Mobile Home Parks

1. See Section X-L for common area irrigation meter requirements.

K. Mixed residential and commercial uses must have separate meters.

L. Irrigation

1. Provide separate irrigation meters for landscaped areas of all commercial uses.

2. Provide separate irrigation meters for common areas of all condominium, town home, PUD, apartment complexes, and mobile home parks.

3. Provide reduced pressure backflow devices for all irrigation services. Backflow devices must be specified on the irrigation plan and must conform to City Standard 876 and current USC Approved List of Devices.

4. Sizing of irrigation meters will be determined by the Utilities Department after reviewing the landscape plans. Irrigation meter size will be determined by the maximum flow required at the meter and will be based on A WW A criteria for meter sizing. Water demand purchased will be based on the estimated gallons required to maintain the planned landscape in a healthy condition for our climate. Along with landscape and irrigation plans, the applicant must submit the planned square footage of planted areas and categories of plants to be used as selected from the following:

   a. High water use plants: turf, annuals, and container plants;

   b. Moderate water use plants: ornamental trees, shrubs ground covers, and perennials primarily irrigated by sprinklers. (Note that there may be some use of drip or bubblers in this category but not a predominance.)

   c. Low water use plants: drought tolerant plants recognized as having a plant factor of 0.3 or less and irrigated primarily through drip emitters.

XI. BACKFLOW DEVICES

A. Backflow Prevention shall be in accordance with the City's Recycled Water User's Guide and shall be required for the following applications:

APPLICATION	**TYPE OF DEVICE**
Buildings with Recycled Water for approved Dual Plumb uses	RP
Irrigation Systems w/ Booster Systems	RP
Irrigation System w/Chemical Feed	RP
Irrigation System w/Recycled Water impoundments on-site	RP
Irrigation System w/Supplemental Water from the Potable Water System	RP
RP = Reduced Pressure	

B. All backflow devices must be tagged with a recycled water identification tag with the words "WARNING – RECYCLED WATER – NOT FOR DRINKING" on one side and "AVISO – NO ES PARA BEBER" on the other. Identification tags shall be permanent plastic tags affixed to the valve designed to withstand exposure to weather, sunlight, and immersion.

XII. PRESSURE

A. Pressure

1. Pressure Criteria
   a. Operating pressure under peak hour demand shall not be less than 40 psi.
   b. The maximum allowable static pressure is 100 psi.

2. Pressure Regulation
   a. Install pressure reducing valve installations where required by City to meet operating and static pressure standards.
   b. All pressure reducing valves must be tagged with a recycled water identification tag with the words "WARNING – RECYCLED WATER – NOT FOR DRINKING" on one side and "AVISO – NO ES PARA BEBER" on the other. Identification tags shall be permanent plastic tags affixed to the valve designed to withstand exposure to weather, sunlight, and immersion.

XIII. SPECIALTY VALVES AND WATER SAMPLING STATIONS

A. Water sampling stations are required to provide representative sampling where indicated in the City's urban reuse predesign plans. The above grade cabinet must have a warning label affixed onto it with rivets, bolts, etc. Warning labels shall be constructed of a weatherproof material with the warning permanently stamped or molded into the label and having the words, "RECYCLED WATER - DO NOT DRINK".

B. Air release and vacuum relief valves are required at substantial high points in the system such as hilltops, bridge crossings, and the upper end of dead legs. Air valves may be located below grade with above grade vent piping and drain to the sanitary sewer.

C. Blowoffs shall be installed at substantial low points to facilitate draining of the system and shall be located within 150 feet of a sanitary sewer manhole. Local low points, such as utility crossings, will not require blowoffs. Blowoffs shall be in accordance with Santa Rosa City Standard 862.

D. All manual control valves, electrical control valves, pressure reducing valves shall be installed below grade in a valve box. Air release valves can be vented below grade.

E. All specialty valves and water sampling stations must be tagged with a recycled water identification tag with the words "WARNING – RECYCLED WATER – NOT FOR DRINKING" on one side and "AVISO – NO ES PARA BEBER" on the other. Identification tags shall be permanent plastic tags affixed to the valve designed to withstand exposure to weather, sunlight, and immersion.

XIV. SPECIAL CONDITIONS FOR DELINEATED FAULT ZONES

A. Fault zones must be identified on improvement plans.

B. Ductile iron pipe must be indicated on the improvement plans in delineated fault zones and extend to 100 feet outside each side of the delineated fault boundaries.

XV. EASEMENTS

A. An easement must be provided over any public recycled water system when it is installed outside a public right-of-way.

B. The easement must be a minimum of 15 feet wide if it only contains a recycled water main or 20 feet wide if it contains another facility, such as sewer, storm drain, or other utility. The easement will be dedicated as a "public recycled water easement" if it contains recycled water only. It will be dedicated as a "public utilities easement" if it contains other facilities as well.

C. Easements must be configured to encompass all publicly maintained appurtenances, such as service laterals and meters and will be generally centered over the facility. Separate access easements may be required depending on site conditions. When recycled water mains are to be installed along a property line the easement will be wholly contained on one parcel.

D. All property restrictions placed as a result of dedication of easements will be so noted on the Subdivision Map, or on the Easement Deed if the easement is not dedicated as part of a subdivision. Required notes are:

1. No structures may encroach on, above or below the surface of the ground in any public recycled water easement. This includes footing of foundations or eaves from the roof of any adjacent structure, pools, ponds, or outbuildings on slabs or foundations. Decks, sheds, or other structures that may be easily removed for maintenance of the water system may be allowed at the discretion of the Director of Utilities.

2. No trees may be planted in a public recycled water easement without first obtaining approval of the Director of Utilities. Trees may be allowed to the extent that damage to the water system does not occur from root intrusion and adequate access can be provided for maintenance and repair vehicles.

XVI. ABANDONMENT OF RECYCLED WATER MAINS AND SERVICES

A. Any existing recycled water mains and service laterals that will not be used must be abandoned and must be shown on the Improvement Plans with appropriate notation.

B. For all abandoned recycled water services up to and including 2 inches, annotate to remove the valve and saddle and install a full circle clamp on main under Utilities Department inspection.

C. For flanged or mechanical joint tees, annotate the Improvement Plans to remove the valve and install a blind flange or mechanical joint plug under Utilities Department inspection.

D. For push-on tees, the tee, valve and concrete thrust block must be removed and the main repaired with approved pipe and suitable couplings, and so noted on the Improvement Plans.

E. Valve boxes for abandoned valves must be removed and so noted on the Improvement Plans.

F. Abandoned mains, valves, and risers located within any street structural section or within any new trench must be shown on the Improvement Plans to be removed.

G. Show all 12-inch diameter and larger recycled water mains to be abandoned within the public right-of-way as removed or broken every 50 feet and filled with sand slurry.

XVII. RECYCLED WATER PUMPING STATIONS

A. Pumps and Piping

1. Pumps

a. Vertical turbine pumps shall be installed in stainless steel suction cans. The size and depth of the suction can as well as the location of the suction piping connection shall be in accordance with Hydraulic Institute standards.

a. The pumps shall not exceed 1800 revolutions per minute operating speed and shall be provided with mechanical seals.

b. Pump motors shall be 480 VAC, 3-phase, with 1.15 service factor. Motors shall be open drip-proof or have water-proof enclosures.

1. Piping

a. Pond intake piping shall be stainless steel, including intake screen.

b. Pump isolation valves are required on the suction and on the discharge piping.

c. Isolation valves shall be resilient seat gate valves.

d. Provide rubber flapper check valves on the pump discharge piping at a minimum.

e. No piping other than drain piping connection to pump cans shall be buried beneath the floor. Below grade piping shall be in pipe trenches with aluminum grating covering the trench.

f. Each pump station shall be plumbed to have sodium hypochlorite injection capability.

B. Electrical Design & Emergency Power

1. Electrical Equipment (single feed)

a. A minimum of one pump shall be driven by an adjustable speed drive (VFD).

2. The other pump motors shall have reduced voltage solid-state starters.

C. Surge Control

1. Hydrodynamic transient analyses shall be performed for each pump station to determine necessary surge control measures.

D. Instrumentation & Controls (I & C)

1. Supervisory Control And Data Acquisition (SCADA)

a. The new system shall integrate with the City's existing system, which utilizes spread spectrum radio telemetry to a centralized server.

b. Pumps normally shall be controlled by downstream reservoir levels.

c. Primary telemetry is spread spectrum radio.

d. Redundant communication paths between the pump station and the downstream reservoir are required.

e. An electromagnetic flow meter shall be provided within the pump station.

E. Redundancy Requirements

1. Capacity

The pump station shall be designed such that it can meet design capacity with the largest pump out of service at the specified design capacity.

2. Electrical Redundancy

a. No redundancy is required for electrical switch gear, motor control centers, or adjustable speed drives.

b. Standby generators are not required, but the pump station shall have a transfer switch and receptacle of a type that would allow a direct connection of a City portable generator to the pump station.

F. Auxiliary System Redundancy (HVAC)

a. Auxiliary systems can be constructed without redundant equipment.

b. All pumps stations shall be provided with heaters.

c. Ventilation shall be as required to keep the interior temperature within the allowable temperature range of electronic equipment housed within the building.

G. Site Requirements

1. Architectural

a. The pumps and electrical equipment, including switch gear, motor control centers, and control panels shall be housed in masonry buildings.

b. The floor of the building shall be a minimum of 6 inches above the surrounding exterior grade.

c. Skylights shall be provided in the roof above the pumps for removal and installation of pumps.

2. Visual Impacts/Restrictions

a. Building sites will be subject to City Design Review Board.

b. Roofing materials shall match existing roofing materials in the area.

c. Pump station shall be fenced.

i. Wrought iron decorative fence in urban settings.

ii. Others may be cyclone with or without slats.

d. Entrance gates shall be provided.

i. Gate(s) shall be either rolling or double leaf swinging gates.

ii. Type of locks shall be determined based on type of fencing and gates selected.

3. City/County Noise Limits

   In the City or in urban settings the pumps shall be housed in a building to mitigate noise and conform to the requirements of the City's noise ordinance.

4. Parking/Paving

   a. Paved areas shall be of sufficient size and located to allow crane access for pump removal.

   b. There shall be adequate paved area to turn around a pickup truck within the fenced area.

5. Security/Utilities/Lighting

   a. There shall be covers on locks to prevent the cutting of the locks.

   b. Ladder protectors shall be required wherever ladders are in exterior locations.

   c. Type of yard lighting control may be manual, by photocell or on a timer.

   d. Motion detector lights may be required.

   e. Security cameras may be required.

   f. Electric service shall be underground in urban areas but may be overhead in rural areas.

   g. Intrusion alarms may be required.

6. Landscaping shall be required and shall be designed and installed per the City's Water Efficient Landscape Policy.

XVIII. RECYCLED WATER STORAGE FACILITIES CRITERIA

A. Hydraulic Considerations

1. Hydraulic Modeling shall determine capacity sizes for operational storage capacity only.

2. Emergency Storage Capacity and fire storage capacity shall not be included in the sizing of the recycled water storage facilities.

3. The High Water Elevation and Hydraulic Grade Line shall be determined by hydraulic analysis.

4. Tank connections shall be to the distribution system and "float" off system.

B. Siting Criteria

1. Hydraulic Modeling shall determine site locations and shall be coordinated with proposed distribution system piping alignments and location of major demands.

2. Evaluate Alternate Sites based on the following siting criteria.

   a. Proximity to Distribution System and Sanitary Sewer

   b. Hydraulic Effectiveness

   c. Power Availability

d. Geotechnical Feasibility

e. Property Ownership And Land Acquisition

f. Construction Cost

g. Access Requirements

h. Surrounding Land Uses

i. Overflow Constraints

j. Environmental Constraints

i. Biological Resources
ii. Cultural Resources

iii. Geology And Soils

iv. Noise

v. Land Use Planning

k. Noise Impacts

l. Visual Impacts

m. Permitting Requirements

C. Right-of-Way Needs and Land Acquisition

1. Tank Sites shall be evaluated based on tank capacities developed during hydraulic evaluation.

2. Land Acquisition and easements required will be determined and included in the evaluation at each site.

3. Construction Easements may be required and will be evaluated on a case by case basis.

D. Tank Materials

1. Seismic/Structural design shall be in accordance with the Uniform Building Code Seismic Zone 4.

2. Welded steel tanks are required to be consistent with existing City water storage facilities. AWWA Standard D-100 shall be used to design welded steel tanks.

3. Footings shall be concrete ring wall footings unless local geotechnical conditions and final dimensions dictate otherwise. The tank shell will be anchored to the ring wall footing to meet seismic design requirements unless proven to be unnecessary given the dimensions.

4. Coatings for steel tanks shall comply with City tank coating standards.

E. City will consider need for cathodic protection on a case-by-case basis.

F. On-Site Piping

1. Inlet/Outlet piping for recycled water shall be a single pipeline from the distribution system and shall enter the tank through the floor plate. To address seismic issues, piping connected to the tank will be adequately designed to accommodate differential settlement.

2. Pipeline Size will be determined by the final hydraulic analysis.

3. Valves
   a. Normally, a control valve or an altitude valve will not be provided.

4. Floor Drains shall be provided.

5. Overflow Pipe
   a. An overflow pipe will be provided with an air gap to eliminate potential back pressure on the overflow pipe.

   b. The overflow pipe shall be sized for maximum flows into the tank.

   c. The tank overflow piping and shell nozzle shall be welded steel pipe.

   d. Overflow shall have an air-break and drain by gravity pipeline to the nearest sewer, with lateral sized to limit flows based on capacity of receiving sewer main. Director of Utilities may waive this requirement at his/her discretion.

G. Site Requirements

1. Environmental/Geotechnical investigations shall be conducted after the initial reconnaissance of each selected tank site.

2. Visual Impacts/Restrictions shall be considered.

3. Fencing
   a. Storage tanks shall be fenced.

   b. Wrought iron decorative fence in urban areas.

   c. Others may be chain link with or without slats.

4. Gates
   a. Entrance gates shall be provided.

   b. Gates shall be either rolling or double leaf swinging gates.

   c. Types of locks shall be determined based on type of fencing and gates selected.

5. Paving/Parking
   a. Provide a 10-foot paved access road around the tank for maintenance and inspections. Alternate road materials may be considered if appropriate.

   b. Provide adequate paved area to park and turn a truck around within the fenced area.

6. Security/Utilities/Lighting
   a. There will be covers on locks to protect against cutting.

b. Ladder protectors and/or anti-climb assemblies will be required for exterior ladders.

c. Yard lighting controls will be selectable as manual, by photocell or timer.

d. Yard lighting shall take into consideration impacts on adjacent parcels.

e. Security cameras may be required.

f. Intrusion alarms shall be required, including on roof hatches.

g. Motion detector lights may be required.

7. Landscaping may be required and shall be designed and installed per the City's Water Efficient Landscape Policy.

8. All site runoff will be collected and discharged to an appropriate location in accordance with City Standards.

H. Instrumentation & Control

1. Remote Telemetry Unit (RTU) shall be provided to transmit signals and alarms from the tank site to the City's central Supervisory Control and Data Acquisition (SCADA) system.

2. I/O shall include at a minimum, the following:
   a. Tank water level

   b. High water level alarm

   c. Low water level alarm

   d. Roof hatch intrusion alarm.

I. Water Quality

1. Internal Tank Piping shall be designed to induce mixing and eliminate short-circuiting.

2. Mixing/Recirculation options shall be investigated at each tank to eliminate dead zones. Options include:
   a. separate piping configuration

   b. recirculation pumping

   c. proprietary piping manifolds to induce better water circulation.

3. Sample Locations shall be evaluated based on:
   a. inlet and outlet piping

   b. the tank shell

4. Chlorine Injection facilities shall be considered based on:
   a. the distribution system water quality

   b. operational considerations

J. Appurtenances/Accessories

The following appurtenances shall be provided at the tank:

1. Man-ways - there shall be two (2) standard shell man-ways located at opposite sides of the tank.

2. Roof Hatches - there shall be two (2) roof hatches for access to tank interior and for use during maintenance operations.
   a. One hatch shall be located near the interior ladder for maintenance.

   b. One hatch shall be located above the overflow funnel for visual inspection and maintenance access to the overflow pipe.

3. Ladders
   a. A stainless steel interior ladder with Saf-T-Climb assembly shall be located on the inside wall at the roof hatch.

   b. An intermediate platform may be provided depending on the height of the tank.

4. Roof vent(s) shall be designed to minimize dust and debris entry into the tank. The number and size will be based on maximum inflows into the tank as determined during final design.

5. Level Gages
   a. An exterior float-type level gage will be located at a convenient location for easy visual inspection from the access road.

   b. A level transmitter will be located on the side wall at an appropriate distance from the ground for the level signal to the RTU.

6. Water Sampling Assemblies shall be provided to enable sampling from one or more points within the tank similar the most recent potable water tanks constructed in the City.

K. Electrical

1. Power shall be provided by PG&E from local distribution grid. If access to the grid is not available, solar power will be considered.

XIX. ON-SITE DESIGN STANDARDS

A. Design requirements for on-site facilities shall be in accordance with the latest version of the City's Recycled Water User's Guide.

II.

RECYCLED WATER SYSTEM CONSTRUCTION STANDARDS

RECYCLED WATER SYSTEM CONSTRUCTION STANDARDS

Recycled water system construction standards shall be the same as the water distribution system standard drawings except as noted below. In no case shall the recycled water system construction standards deviate from the City's Recycled Water System Design Standards or the City's Recycled Water User's Guide without prior approval from the Director of Utilities.

Std. #	Title	RW Design Standards References
851	Harness Installation for Flange Fittings	No changes
852	Harness Installation	No changes
853	Concrete Anchor Blocks for Vertical Bends	No changes
854	Concrete Thrust Blocks for Horizontal Bends	No changes
855	Water Main Lowering	Recycled water mains shall conform to RW Design Standards Sections III, IV and IV
856	Water Main Over Structure	Recycled water mains shall conform to RW Design Standards Sections III, IV and IV
857	Fire Hydrant and Lateral/Fire Hydrant Location	Not applicable for recycled water
858	Pumper Connection	Not applicable for recycled water
859	Temporary Blow-off and/or Metered Connection	Metered connections shall conform to RW Design Standards Sections IV, X and XIII
860	Temporary Metered Connection When Fire Flow is Required	Not applicable for recycled water
861	Blow-off with Harness	Service lateral, valve and meter box shall conform to RW Design Standards Sections IV, X and XIII
862	Full Size Blow-off	Valves, pipe and meter box shall conform to RW Design Standards Sections IV, IX, X and XIII
863	¾-inch & 1-inch Water Service Lateral	Service connections shall conform to RW Design Standards Sections IV and X

864	1-inch Dual Water Service Lateral	Not applicable for recycled water
865	2-inch Water Service Lateral for 2-inch or 1-1/2-inch Meter	Service connections shall conform to RW Design Standards Sections IV, IX and X
866	4-inch Water Service Lateral for 3-inch Meter	Service connections shall conform to RW Design Standards Sections IV, IX and X
867	4-inch Water Service Lateral for 4-inch Meter	Service connections shall conform to RW Design Standards Sections IV, IX and X
868	6-inch Water Service Lateral for 6-inch Meter	Service connections shall conform to RW Design Standards Sections IV, IX and X
869	Combination Water Service Stub	Not applicable for recycled water
870	Combination Water Service	Not applicable for recycled water
871	Alignment of Water Mains & Placement of Mainline Valves	Recycled water mains and valves shall conform to RW Design Standards Sections VI and IX
872	Dirt Stop & Water Main Encasement	Carrier pipe shall conform to RW Design Standards Section IV
874	Above Ground Double-Check Valve Backflow Device	Not applicable for recycled water
875	Below Ground Double-Check Valve Backflow Device	Not applicable for recycled water
876	Reduced-Pressure Backflow Device	Backflow devices shall conform to RW Design Standards Sections X and XI
877	Gate Valve	Valves shall conform to RW Design Standards Section IX
878	Butterfly Valve and Tapping Valve	Valves shall conform to RW Design Standards Sections V and IX
879	Single Check Detector in Vault	Not applicable for recycled water
880	Double-Check Detector Fireline Backflow Assembly	Not applicable for recycled water

881	Pressure Reducing Valves	Vault cover shall be purple and labeled same as meter box cover; PRV assemblies shall conform to RW Design Standards Sections IV, V, IX, X and XII
882	Surge Anticipator Valve or Pressure Relief Valve	Not applicable for recycled water
883	Air & Vacuum / Air Release Valve	Vault cover shall be purple and labeled same as meter box cover; valve assemblies shall conform to RW Design Standards Sections X and XIII
884	Water Meter for Private Non-residential Systems	Not applicable for recycled water
885	Water Meter for Private Process and Evaporative Lines	Not applicable for recycled water
886	Water Sampling Station	Sampling stations shall conform to RW Design Standards Sections IV, IX, X and XIII
887	4-inch Ductile Iron Multi-Service Manifold	Not applicable for recycled water
888	Above Ground Single Detector Check Assembly	Not applicable for recycled water
889	Water Service Anode	No changes

III.

RECYCLED WATER SYSTEM CONSTRUCTION STANDARDS SPECIFICATIONS

RECYCLED WATER SYSTEM
CONSTRUCTION STANDARDS SPECIFICATIONS

Recycled water system construction standards specifications shall be the same as the water system construction standard specifications except that in no case shall the recycled water system deviate from the City's Recycled Water System Design Standards or the City's Recycled Water User's Guide without prior approval from the Director of Utilities.

IV.

ENGINEER'S LIST OF APPROVED ITEMS

RECYCLED WATER SYSTEM
ENGINEER'S LIST OF APPROVED ITEMS

Recycled water system Engineer's list of approved items shall be the same as for the water system except that in no case shall the recycled water system deviate from the City's Recycled Water System Design Standards or the City's Recycled Water User's Guide without prior approval from the Director of Utilities.

APPENDIX

D CROSS-CONNECTION CONTROL TEST PROCEDURE FOR ON-SITE RECYCLED WATER SYSTEMS

In the City of Santa Rosa service area, the following method is used for conducting a Cross-Connection control test on all sites where both recycled water and potable water are intended to be used in separate piping systems. A certified AWWA Cross-Connection Control Specialist must perform the test.

CROSS-CONNECTION CONTROL TEST PART I:

The potable water system shall be activated and pressurized. The recycled water irrigation system shall be shut down at its point of connection and depressurized – this is usually done by manually bleeding an irrigation control valve and/or quick-coupling valve that is located at the lowest point of elevation in the irrigation system.

1. The potable water system shall remain pressurized for a minimum period of time specified by the Cross-Connection Specialist while the irrigation system is depressurized. The minimum period of time the recycled water irrigation system is to remain depressurized shall be determined on a case by case basis, taking into account the size and complexity of the potable water and recycled water irrigation systems.
2. All recycled water irrigation control valves and quick-coupling valves, and any site features that are approved to be supplied with recycled water from the on-site irrigation system (such as decorative fountains) shall be tested and inspected for flow. If the recycled water system has been truly shut down at its point of connection, then continuous flow from any part of the recycled water system – irrigation system or decorative fountains, etc. – indicates a Cross-Connection.
3. All potable water fixtures (interior and exterior) – faucets, hose bibs, drinking fountains, toilets and urinals, supply lines to decorative fountains, etc.–shall be tested and inspected for flow. No flow from any potable water outlet indicates that it may be connected to the recycled water irrigation system.
4. If no Cross-Connections are discovered, proceed to the second part of the test. If any Cross-Connections are found, they must be disconnected, and the site must be re-tested by an AWWA Cross-Connection Specialist per these procedures.

Cross-Connection Control Test Part II:

1. The potable water system shall be shut down at its point of connection (usually the meter) and depressurized. In the case of a potable water system in a multi-story building, the potable water system pressure may be reduced by the amount deemed necessary by the Cross-Connection Specialist and monitored with a gauge installed at a low point of elevation in the potable water system.
2. The recycled water irrigation system shall then be activated and pressurized.
3. The recycled water irrigation system shall remain pressurized for a minimum period of time specified by the Cross-Connection Control Specialist while the potable water system is depressurized (or, in the case of a multi-story building potable water system, remains in a state of reduced pressure). The minimum period of time the potable water system is to remain depressurized shall be determined on a case by case basis.
4. All potable water fixtures (interior and exterior) – faucets, hose bibs, drinking fountains, toilets and urinals, supply lines to decorative fountains, etc.–shall be tested and inspected for flow. Some flow may occur from water breaking loose from an air lock in an overhead water line. The amount of flow to cause a concern is a judgment call by the Cross-Connection Specialist. If the potable water system has been truly shut down at its point of connection, then continuous flow from any part of the potable water system (that is beyond the drainage generated by an air lock breaking free) indicates a Cross-Connection. In the case of a potable water system in a multi-story building, the testing of all fixtures may be used in combination with a pressure gauge (mentioned in no. 1. above), or the pressure gauge may be used instead of the testing of all fixtures. If the potable water system has been truly shut down at its point of connection, then an increase in the potable water system pressure viewed at the gauge over a period of time specified by the Cross-Connection Specialist indicates a Cross-Connection.
5. All recycled water irrigation control valves and quick-coupling valves, and any other site features that are approved to be supplied with recycled water from the on-site irrigation system (such as supply lines to decorative fountains) shall be tested and inspected for flow. No flow from a recycled water irrigation control valve, quick-coupling valve, or any other recycled water fixture indicates that it may be connected to the potable water system.
6. If no Cross-Connections are discovered, then the potable water system shall be re-pressurized. If any Cross-Connections are found, they must be disconnected, and the site must be re-tested by an AWWA Cross-Connection Specialist per these procedures.

The certified AWWA Cross-Connection Specialist responsible for completing the above test must indicate the results on a City of Santa Rosa Water Recycling Cross-Connection Certification Form [call (707) 543-4200 to obtain form] and return it to City of Santa Rosa. This completed form may be faxed to the City of Santa Rosa at (707) 543-3937.

City of Santa Rosa
Utilities Department

CITY OF SANTA ROSA
PLAN CHECKLIST

- ❑ Indicate all sources of water on the plans.
- ❑ Show the location and size of all water meters on the piping plans.
- ❑ Show location and type of all backflow prevention devices for potable water systems, and if applicable, on the recycled water system.
- ❑ Show location and type of all strainers, pressure regulating valves, and master valves.
- ❑ Show location of all water pipelines (including potable and well lines) crossing the site. If space does not permit this information to be placed on the plans, then a separate site or utility plan can be used to show this information. Exception for an existing irrigation system converting to recycled water: Although it may not be possible to show the location of all water pipelines at this type of site, all locations where future recycled water piping must be separated from the potable water piping must be clearly indicated on the plans.
- ❑ Clearly identify all adjacent streets, and locations of all major improvements on the site.
- ❑ Show the location of all drinking fountains, outdoor eating areas, and other public facilities supplied with recycled or potable water service. Public facilities include, but are not limited to, restrooms, snack bars, swimming pools, wading pools, decorative fountains and showers. Show the pipelines feeding all of these facilities.
- ❑ Show the location of any wells, lakes, ponds, reservoirs, or other water impoundments located on the site or within 100 feet of the site, and indicate the type of water source.
- ❑ Indicate that the separation between potable and recycled water lines meets minimum requirements. Show sleeving where recycled water pipelines cross over potable water pipelines.
- ❑ When potable water piping is not present on the site, state in a note that the cross-connection test required by the City of Santa Rosa is waived for sites where potable water piping is not present.
- ❑ Show all details necessary to properly construct the system, including the details conforming to the requirements of the City of Santa Rosa. The purpose of the details is to show the materials and methods necessary to clearly identify all water systems on the site.

❑ Supply the following information box for each recycled water system with its own meter; place this information on the same plan as the meter/point of connection it pertains to. Fill out the ten items as applicable, but do not delete any of them.

GENERAL SITE INFORMATION FOR RECYCLED WATER USE

1. RECYCLED WATER USE AREA: (type of use, physical area of use and, for landscapes, square footage of Use Area).
2. PUBLIC ACCESS TO SITE GROUNDS IS (indicate: UNRESTRICTED or RESTRICTED).
3. OWNER: (legal property owner's name).
4. PROPERTY MANAGER CONTACT: (name, title, and telephone number).
5. TENANT (S): [name(s) and phone number(s); if not applicable, state NOT APPLICABLE].
6. ON-SITE WELL LOCATIONS: (for example, ONE; if none, state NONE).
7. WELLS ON ADJACENT SITES LOCATED WITHIN 50 FT. OF RECYCLED WATER APPROVED USE AREA OR WITHIN 100 FT. OF ANY RECYCLED WATER IMPOUNDMENT: (for example, ONE; if none, state, NONE).
8. OUTDOOR DRINKING FOUNTAINS IN/NEAR THE RECYCLED WATER APPROVED USE AREA: (for example, ONE; if none, state, NONE).
9. OUTDOOR EATING AREA(S) IN/NEAR THE RECYCLED WATER APPROVED USE AREA: (for example, ONE; if none, state, NONE).
10. WATER FEATURES ON SITE: (examples below; if none, state NONE).

Number:	Type:	Water Source:
One	Fountain	Recycled
One	Pond	Potable

❑ For irrigation systems, include an irrigation equipment legend specifying all materials of construction for the system, including:

- A pipe schedule listing pipe sizes, materials of construction, and type of water conveyed by the piping.
- A listing of valve types, including quick coupling valves.
- All pertinent information for each type of sprinkler head and/or emitter.
- Indication of purple-colored pipe with recycled water stenciling and quick coupling valves with purple covers where recycled water is used.

❑ For sites containing recycled water landscape impoundments, include all necessary details to demonstrate the landscape impoundment is adequately protected from erosion, washout, or flooding from a rainfall event having a predicted frequency of one in 100 years.

❑ For sites containing recycled water ponds, show all details necessary to clearly demonstrate that the minimum freeboard is consistent with pond design but not less than two feet.

❑ All sites using recycled water must post clearly visible signs conforming to the City of Santa Rosa signage standards. Show proposed sign locations on plans.

- For many sites, typical locations for signs are at the property line near crosswalks, at driveway entrances, and at outdoor eating areas.
- For streetscapes (parkways, frontage or backup landscaping), place signs at street corners and entranceways as appropriate to notify passersby and site users.
- For medians, a sign should be placed at the beginning and end of every median, and another approximately equidistant from the ends of the median for longer median areas.
- For decorative fountains, ponds, and other water features, *see the Advisory Sign for Decorative Fountains, Ponds and Other Water Features section, page 14* of the Recycled Water User's Guide.

❑ Add signature lines for the City of Santa Rosa – to all irrigation plan sheets, detail sheets, and specification sheets that pertain to the recycled water irrigation system.

City of Santa Rosa
Utilities Department

CITY OF SANTA ROSA
CROSS-CONNECTION TEST NOTIFICATION

48-Hour Minimum Notice

Owner's Representative
(Retrofit Contractor/ Shutdown Coordinator)

Name: _____
Company Name: _____
Phone: _____
Fax: _____
Pager/Mobile Phone: _____
Date: _____

ITEMS TO BE COMPLETED BY OWNER REPRESENTATIVE

Site Name: _____
Site Address: _____
Proposed Test Date and Time: _____
Notices sent to:

- [X] City of Santa Rosa: Recycled Water Program
  Phone 707-543-4200 / Fax 707-543-3937
- [ ] Tenant _____ (Name/ Phone)
- [ ] Owner _____ (Name/ Phone)
- [ ] Inspector _____ (Name/ Phone)
- [ ] Account Holder _____
- [ ] On-Site Sup. _____

ITEMS TO BE COMPLETED BY CITY OF SANTA ROSA

User Number: _____
Notices sent to:

- [ ] Utilities Department
  Phone 707-543-4200
  Fax 707-543-3936
- [ ] Laguna Treatment Plant
  Phone 707-543-4200
  Fax 707-543-3399

ITEMS TO BE COMPLETED BY CROSS-CONNECTION SPECIALIST

- [ ] Cross Connection Specialist
  Company Name: _____
  Specialist Name: _____
  Phone/Fax/Pager: _____
- [ ] Specialist's information faxed to Owner's Representative
- [ ] Fax information to City of Santa Rosa: Recycled Water Program - Fax 707-543-3937

Appendix

F CITY OF SANTA ROSA POTABLE AND RECYCLED WATER CODE CHAPTER 14-25

ORDINANCE NO. 3845

AN ORDINANCE OF THE COUNCIL OF THE CITY OF SANTA ROSA AMENDING THE CITY CODE BY INTRODUCING CHAPTER 14-25 AND AMENDING TITLE 14 (WATER) TO ESTABLISH RULES, REGULATIONS AND AUTHORITIES REGARDING THE USE OF RECYCLED WATER IN SANTA ROSA; AND DETERMINING THAT THIS REVISION TO SANTA ROSA CITY CODE IS WITHIN THE SCOPE OF THE IRWP EIR, ADOPTING A MITIGATION MONITORING PROGRAM, ADOPTING A STATEMENT OF OVERRIDING CONSIDERATIONS, AND MAKING CEQA FINDINGS OF FACT

THE PEOPLE OF SANTA ROSA DO ENACT AS FOLLOWS:

Section 1. Title 14 of the Santa Rosa City Code is amended to read as follows:

"Title 14 – Potable and Recycled Water"

Section 2. Chapter 14-04 of the Santa Rosa City Code is amended to read as follows:

"**Chapter 14-04 POTABLE WATER AND RECYCLED WATER SERVICE**

14-04.010 Definitions.

For the purposes of this chapter, the following words and phrases shall have the meanings respectively ascribed to them in this section.

(A) "Board of Public Utilities" means that Board appointed and acting under Section 26 of the Charter of the City of Santa Rosa.

(B) "Charge" or "rate" means the amount of money to be paid by the person liable to the City for potable or recycled water, services or materials.

(C) "Customer" or "Consumer" means any persons having a connection into the potable water system or recycled water system owned and operated by the City.

(D) "Monthly" means occurring once a month.

(E) "Permanent water service" means the installation of a permanent (non-temporary) City water meter by City forces in an approved water meter box accompanied by a request to the City by the property owner, agent, or tenant to establish a permanent potable or recycled water service account.

(F) "Potable water system" means the system of pipelines, pump stations and appurtences which is owned and operated by the City and which delivers water for human consumption.

(G) "Recycled water system" means the system of pipelines, pump stations and appurtences which is owned and operated by the City and which delivers, for approved uses, non-potable tertiary treated recycled water as defined by state law.

(H) "Service charge" means the charge to be paid by persons liable for each and every connection to and/or use of the City potable water system, irrespective of whether or not water is delivered through such connection to such person during the period for which such charge is made.

(I) "Service or water service" means a connection through which potable or recycled water is supplied or is available to a person from and out of the potable or recycled water system owned and operated by the City.

(J) "Service lateral" means that portion of the potable or recycled water system which extends from the City water main to the coupling immediately beyond the meter box on the consumer's premises. (Ord. 3707 §§ 1 and 2, 2005; Ord. 2757 § 1, 1989; Ord. 2667 § 1, 1988; prior code § 25.1)

14-04.020 Administration and regulations authority.

The Board of Public Utilities may adopt rules and regulations for the purpose of administering and enforcing the provisions of this chapter, and for the purpose of regulating and operating the municipal potable and recycled water systems. (Prior code § 25.22)

14-04.030 Fees and charges authority.

The Board of Public Utilities shall establish rules and regulations for collection of fees and charges, including but not limited to requirements for security deposits, and maintenance of service, customer responsibilities, prohibited acts and penalties, adjustments of billings and applications for service, connections, reconnections and discontinuance. (Prior code § 25.7)

14-04.040 Use and resale of potable or recycled water.

No person shall permit the use or resale of any of the potable or recycled water received by him on any premises other than those specified in his application for service, except by special arrangement with the Board of Public Utilities. (Prior code § 25.21)

14-04.050 Application for service—Person with outstanding bills.

When an application for potable or recycled water service is made by an applicant who was responsible for and failed to pay all bills for service previously rendered, regardless of location or when incurred, the Board of Public Utilities may refuse to furnish service to such applicant until the outstanding bills are paid. It may also require, as a guarantee for the payment of future bills, a cash guarantee deposit. (Prior code § 25.11)

14-04.060 Application for service—Outside City.

The Board of Public Utilities may extend potable water service beyond the boundaries of the City upon application therefor if it appears to be in the best interest of the City and in the opinion of the board, it is feasible to do so. Any person having or obtaining potable water service outside the City as an express condition of receiving such service shall comply with all present and future provisions of this code and other ordinances and regulations of the City relating to sewer connections and the use thereof to the same extent and manner as if such potable water service were located within the City. (Prior code § 25.12)

14-04.065 Installation, ownership and maintenance of potable or recycled water service receiving equipment.

Consumers shall furnish, construct, install, own, operate, maintain and repair that portion of the potable or recycled water system on the consumer's premises which begin at the coupling on the consumer's side of the water meter. The City, as determined by the City Engineer, may require the consumer at his/her own expense to adjust, replace, repair, maintain or discontinue the use of any potable or recycled water receiving or regulating equipment on the consumer's side of the meter. Where reduced or increased water pressure is desired by the consumer, the consumer at his/her expense and after obtaining all required permits, may install, operate and maintain water pressure regulating equipment which shall be on the consumer's side of the water meter. (Ord. 2757 § 2, 1989)

14-04.070 Liability of owner for collection fees—Generally.

The council finds that the public health, safety and welfare of the people of the City is benefited by providing potable water service and, where feasible, recycled water service to its residents. All owners of property receiving potable or recycled water service are liable for the charges prescribed by this chapter regardless of whether the owners use the service herein provided. (Prior code § 25.2)

14-04.080 Liability of owner for collection fees—Charging occupant.

In the case of premises that are occupied by someone other than the owner, such fees may be charged to the occupant of such premises. If the occupant fails to pay such fees, the owner shall be liable to the City for such fees, but in no event shall the fee charged the owner exceed bills for a four-month period. (Prior code § 25.2.1)

14-04.090 Fixed monthly service charges.

(A) The fixed monthly service charges for potable water service are based upon the size of the water meter and are as follows:

Fixed Monthly Service Charges

Meter Size (in Inches)	Billings Rendered On and After January 1, 2006	Billings Rendered On and After January 1, 2007
5/8	$005.53	$006.03
1	$0010.06	$0010.97
1 1/2	$019.25	$020.98
2	$032.35	$035.26
3	$075.65	$082.46
4	$128.70	$140.28
6	$281.74	$307.10

(B) The monthly service charges for City-maintained meters on private water systems are as follows:

Fixed Monthly Service Charges for City-Maintained Meters on Private Commercial Water Systems

Meter Size (in Inches)	Billings Rendered On and After January 1, 2006	Billings Rendered On and After January 1, 2007
5/8	$003.05	$003.32
1	$003.95	$004.31
1 1/2	$004.20	$004.58
2	$005.60	$006.10
3	$015.55	$016.95
4	$021.68	$023.63
6	$041.01	$044.70

(Ord. 3758 § 1, 2005: Ord. 3642 § 1, 2003: Ord. 3525 § 1, 2001: Ord. 3452 § 1, 1999: Ord. 3394 § 1, 1998: Ord. 3350 § 1, 1997: Ord. 3291 § 1, 1996: Ord. 3230 § 1, 1995: Ord. 3161 § 1, 1994: Ord. 3074 § 1, 1993: Ord. 3055 § 1, 1993: Ord. 2654 § 1, 1987: Ord. 2304 § 1, 1983: prior code § 25.2.2)

14-04.100 Charges for new installations, meters and special charges.

Except for those charges specifically set out in this chapter, uniform installation charges for all new services and connections, cost of meters to consumers and special charges for special services rendered shall be established by resolution of the Board of Public Utilities and such charges may be amended and varied from time to time; provided, that all such charges shall reasonably reflect the total actual cost and expense of the service performed or materials supplied. (Prior code § 25.6)

14-04.110 Charge when meter inoperative.

If a meter fails to register due to any cause except the nonuse of potable or recycled water, the charge for potable or recycled water will be made on the basis of the average charge per month covering the period of the preceding months, first ascertaining whether the meter has properly functioned during such period and whether normal conditions prevailed in regard to the use of potable or recycled water at the premises supplied. In the preparation of such averaged bills, due consideration will be given to fluctuations caused by seasonal changes or any interruption to the service known to have occurred. (Prior code § 25.19)

14-04.120 Separate meters required for separate residential or commercial units.

The Board of Public Utilities may require separate residential or commercial units owned by the same person to be supplied with potable water and/or recycled water through separate meters for each unit, under rules and regulations promulgated by the Board. (Prior code § 25.20)

14-04.130 Vacation of premises—Notice.

Each person about to vacate any premises supplied with potable or recycled water by the Board of Public Utilities shall give notice of his intended removal prior thereto, specifying the date service is desired to be discontinued; otherwise, he will be held responsible for all potable or recycled water furnished to such premises until the Board of Public Utilities has received such notice of removal. (Prior code § 25.15.1)

14-04.140 Bills—Generally.

The Board of Public Utilities shall render bills monthly. Opening bills covering new applicants for less than one month's service may, in the discretion of the Board of Public Utilities, be included in the next regular billing. Closing bills for short periods of time since the last meter reading day may be determined by prorating the amount of the last regular bill based upon the number of days for which service was rendered. (Ord. 2667 § 2, 1988; prior code § 25.13)

14-04.150 Delinquencies—Authority to assess penalties.

The Board of Public Utilities may by resolution prescribe penalties or charges to be assessed against delinquent accounts and shall have the power and authority to enforce collection thereof. (Prior code § 25.18)

14-04.160 Delinquencies—Notice and hearing.

By the adoption of a resolution, the Board of Public Utilities may declare that delinquent charges and penalties, when recorded as provided in this chapter, shall constitute a lien upon the real property served after notice and hearing as provided herein:

(A) On or before the 15th day of July of each year, the Board of Public Utilities shall hold a hearing to determine the amount of the delinquent charges and penalties for potable or recycled water service. Notice of the hearing shall be given by the Tax Collector of the City and shall contain a copy of the proposed resolution. Said notice shall state the time and place for hearing on said proposed resolution, and that at said time and place any person interested may appear and be heard as to the charges and penalties.

(B) The notice shall be published at least once a week for two weeks prior to the hearing in a newspaper published in the City. The first publication of the notice shall be at least 15 days prior to the date of hearing.

(C) At the same time and place fixed in said notice for the hearing, the Board of Public Utilities shall hold said hearing. At the hearing any person interested may appear and be heard on the matters set forth in the notice. At the hearing the Board of Public Utilities may change or modify the charges and penalties; provided, however, that no charge or penalty shall be increased from that set forth in the proposed resolution unless notice of intention to make said increase is published once or posted at least 10 days prior to the hearing on the proposed charge.

(D) At the conclusion of the hearing, the Board of Public Utilities may determine that the charges and penalties are not discriminatory or excessive, comply with law, and adopt said resolution as proposed or modified.

(E) One of the modifications of the resolution may be the finding and determination by the Board of Public Utilities that the amount of the charge and penalty shall be placed on the tax roll. If such finding and determination is made by the Board of Public Utilities, the Tax Collector shall forward the amount fixed by the Board of Public Utilities to the Sonoma County Tax Collector for placement on the tax roll next succeeding the hearing. (Prior code § 25.14.3)

14-04.170 Delinquencies—Appeal.

Any person aggrieved by any decision or determination of the Board of Public Utilities may appeal to the City council by filing written notice of appeal within 15 days of the date of such decision or determination with the City Clerk. The council shall thereupon fix a time and place for hearing such appeal. The City Clerk shall give notice to such person of the time and place of hearing by serving it personally or by depositing it in the United States post office, postage prepaid, addressed to such person at his last known address. (Prior code § 25.14.4)

14-04.180 Charges a lien.

Charges for potable or recycled water service and all penalties thereon, when confirmed by the Board of Public Utilities as provided in this chapter, shall constitute a lien upon the real property served and such lien shall continue until the charge and all penalties are fully paid or the property is sold therefor. The lien shall be prior to all other liens recorded after the lien for potable or recycled water charges is recorded as herein provided. In addition, the Board of Public Utilities may authorize the Tax Collector of the City to place the lien on the tax roll of the property served. (Prior code § 25.14.2)

14-04.190 Recordation a lien.

The lien provided for in this chapter shall attach and be entitled to priority as of the time the Tax Collector records the list of delinquent unpaid charges and penalties with the County Recorder. Each recorded lien shall state the amount of each charge and the penalty, a description of the real property upon which the same is a lien and the name of the City of Santa Rosa to which the same is payable. A list of all such delinquent charges shall be recorded annually, but no delay or informality in recording the same shall invalidate the lien or any unpaid charge, or any subsequent act or proceeding. (Prior code § 25.14.5)

14-04.200 Separate remedies.

As a separate, distinct and cumulative remedy established for the collection of said charges and penalties thereon, an action may be brought in the name of the City of Santa Rosa in any court of competent jurisdiction to enforce the lien of the charge and all penalties thereon against the user. In such action a reasonable attorney's fee may be awarded the plaintiff. (Prior code § 25.14.6)

14-04.210 Disconnection—When.

Potable or recycled water service may be disconnected for the following reasons:

(A) Nonpayment of charges for potable or recycled water, sewer and other services rendered, if the charge is not paid within one month after mailing or presentation thereof to the owner, occupant or consumer as provided by the Board of Public Utilities rules and regulations; or

(B) If the owner, occupant or consumer fails to comply with any of the regulations set out in this chapter, or any other rules and regulations of the Board of Public Utilities; or

(C) For public health and/or safety reasons; or

(D) For breach of the utility service agreement, signed by or assigned to the customer, or attributable to the service to which the customer is connected; or

(E) If the utility customer who has received notice of violation of the water waste provisions of Chapter 14-21 fails to correct the conditions which caused the violation with 15 days, or other reasonable time as determined by the Director of Utilities (Ord. 3426 § 1, 1999, prior code § 25.15); or

(F) For breach of the Recycled Water Use Permit as defined in Chapter 14-25.

14-04.220 Disconnection—Equipment removal—Service reestablishment charge.

When potable or recycled water is turned off due to the use of another source of supply or for other reasons, the meter and other salvageable equipment will be removed. If an application for reestablishment of potable or recycled water service is made to the Board of Public Utilities within a period of one

year from the date of the turnoff, payment must be made in advance for resetting the meter. The amount of the charge therefore shall be established and regulated by the Board of Public Utilities under the authority granted in Section 14-04.100, and will be quoted upon application, provided that any equipment reinstalled and previously paid by the user or premises shall not be charged again. (Prior code § 25.17)

14-04.240 Installation, ownership and maintenance of service laterals.

Where no service lateral exists or where the City Engineer determines an existing service lateral is inadequate for the proposed or actual use, the applicant, at his/her own expense and after obtaining all required permits, shall furnish, construct and install a service lateral acceptable to the City Engineer for the proposed or actual use. If the City has previously installed a service lateral, the City may charge the applicant for the cost of the existing lateral in lieu of requiring the applicant to install a service lateral as required by this section. Upon acceptance by the City Engineer, all service laterals shall be owned and maintained by the City. (Ord. 3368 § 1, 1998: Ord. 2757 § 3, 1989)"

Section 3. Chapter 14-08 of the Santa Rosa City Code is amended to read as follows:

"Chapter 14-08 POTABLE WATER RATES

14-08.010 Rates for the delivery of potable water in addition to fixed monthly charges.

(A) In addition to the fixed monthly charge (see Section 14-04.090), there shall be a user charge of $3.15 per 1,000 gallons of potable water delivered through each meter during the billing period, on billings rendered on and after January 1, 2006.

(B) On billings rendered on and after January 1, 2007, the user charges shall be as follows:

(1) Single-Family Residential Accounts. The user charge is made up of three tiers.

User Charge ($ per 1,000 gallons) On and After January 1, 2007

Tier Allocation	
Tier 1 (up to 8,000 gallons above the account's sewer cap)	$ 3.22
Tier 2 (8,001 to 30,000 gallons above the account's sewer cap)	4.02
Tier 3 (over 30,000 gallons above the account's sewer cap)	6.03

The sewer cap is the sewer usage charge based on indoor water use. This is estimated by averaging the potable water usage during the December, January and February billing periods. For any month that potable water usage is less than the sewer cap, accounts are charged on the basis of actual potable water usage.

A sewer cap will be calculated for all single-family residential accounts, which do not have a corresponding City wastewater account and which use City potable water for irrigation, for purposes of determining user charges under the tier allocation user charges.

Single-family residential accounts which have indoor potable water use only, will have all potable water billed at the Tier 1 user charge.

(2) Dedicated Irrigation Accounts with Potable Water. The user charge is made up of three tiers. The three tiers are based on the percentage of the billing period water budget used by the specific site during the billing period, as follows:

User Charge($ per 1,000 gallons) On and After January 1, 2007

Tier Allocation	
Tier 1 (up to 125% of billing period water budget)	$ 3.22
Tier 2 (126 – 200% of billing period water budget)	4.02
Tier 3 (over 200% of billing period water budget)	6.03

Dedicated irrigation accounts are accounts used solely for irrigation. These accounts shall have a user charge based on site-specific billing period water budgets determined for each billing period in arrears. The billing period water budget is the amount of water, in gallons, needed to irrigate the specific area of landscape served by the dedicated irrigation account for the specific days covered by the billing period. The billing period water budget is determined for each billing period in arrears for each account in accordance with the following formula

Billing period water budget = {[ETo - EP] x [LAh + (LAm x 0.6)] x CF}

ETo (Reference Evapotranspiration) = Evapotranspiration is defined as the amount of water used by the plants (transpiration) and evaporated from the soil (evaporation) measured in inches as determined by the Santa Rosa California Irrigation Management Information Systems (CIMIS) weather stations. Reference evapotranspiration is a standard measurement of evapotranspiration for cool-season turf. The billing period ETo is the sum of the daily ETo for the specific days of the billing cycle.

EP (Effective Precipitation) = The depth of rainfall, measured in inches by the Santa Rosa CIMIS weather stations, that offsets ETo. It is assumed that only 2/3 of total rainfall offsets ETo. The billing period effective precipitation is for the specific days of the billing cycle.

LAh (landscape area high) = Square footage of site's landscape area consisting of high water use plants or uses (turfgrass, ornamental water features, annuals, plants in containers and plants with a plant factor greater than 0.6)

LAm (landscape area moderate) = Square footage of site's landscape area consisting of moderate and low water use plants (plants with a plant factor of 0.6 or less)

CF (Conversion factor) = 0.623, the number that converts square feet to gallons

A dedicated irrigation account customer may request verification of a determination of a billing period water budget by contacting the utilities department. The determination by the Director of the Department of Utilities of a billing period water budget shall be final. Notwithstanding the provisions of Sections 1-20.010 and 1-20.020, an appeal from the final decision of the Director shall be in writing and filed with the Secretary to the Board of Public Utilities within 15 days of the date of the decision. The appeal shall be scheduled to be heard by the Board of Public Utilities within 45 days of the filing of the appeal. The decision of the Board of Public Utilities shall be final and cannot be appealed to the Council.

(3) Multi-Unit Residential Accounts (Two Units and More): $3.43 per 1,000 gallons of potable water delivered through each meter during the billing period.

(4) Commercial and Industrial Accounts: $3.43 per 1,000 gallons of potable water delivered through each meter during the billing period. (Ord. 3758 § 2, 2005:Ord. 3642 § 2, 2003: Ord. 3525 § 2, 2001: Ord. 3452 § 2, 1999: Ord. 3394 § 2, 1998: Ord. 3350 § 2, 1997: Ord. 3291 § 2, 1996: Ord. 3230 § 2, 1995: Ord. 3161 § 2, 1994: Ord. 3055 §§ 1, 2, 1993: Ord. 2838 § 1, 1990: Ord. 2654 § 2, 1987: Ord. 2304 § 2, 1983: Ord. 2243 § 1, 1982: prior code § 25.3)

14-08.020 Fire line protection service charge.

In addition to charges for potable water actually used, there shall be a fixed monthly service charge for fire line protection services for fire lines connected to the City potable water system based on the size of the connection.

(A) The fixed charges for fire line protection services shall be set by resolution of the Board of Public Utilities.

(B) The charges specified by the Board of Public Utilities shall be applicable to private fire line services to which no connections for other than fire protection purposes are allowed and which are regularly inspected by the underwriters having jurisdiction, and are installed according to specifications of the Board of Public Utilities, and are maintained to the satisfaction of the Board. The applicant shall pay all costs of installation including the actual cost of installation of a service or distribution main of adequate size to service such fire line system. (Ord. 3452 § 3, 1999: Ord. 2667 § 3, 1988: prior code § 25.4)"

Section 4. Sections 14-12.110 and 14-12. 120 of Chapter 14-12 of the Santa Rosa City Code are amended to read as follows:

"14-12.110 All developed parcels in zones of groundwater contamination required to connect to safe potable water supply.

(A) Notwithstanding any other provision of law, all developed parcels within the City which are located within the Red Zone, the boundary of which is set forth on Exhibit 1, attached to and made a part of this section, which are using groundwater for potable water purposes must be connected to the City's potable water supply system.

(B) Notwithstanding any other provision of law, all developed parcels within the City which are located within a zone of groundwater contamination that is identified in the future by the City pursuant to a resolution of the Council and which are using groundwater for potable water purposes must be connected to the City's potable water supply system. (Ord. 3439 § 3 (part), 1999)

14-12.120 Cross-connection to publicly provided water supply banned.

Notwithstanding any other provision of law, in a zone of groundwater contamination, there shall be no cross-connection between a well and either of the following: (1) the City's or any other public potable or recycled water supply system, or (2) piping for potable or recycled water purposes. To ensure proper implementation of this provision, (1) underground piping connected to such a well shall be disconnected at the well head or (2) for any continued use of groundwater in a zone of groundwater contamination which is not prohibited by this article, or other applicable law, either (a) aboveground piping shall be used to deliver the water from the well head to the point of use or (b) the owner of the developed parcel shall demonstrate to the satisfaction of the administrative authority that there is no cross-connection between underground piping for any allowable use and piping for potable or recycled water purposes. Once piping has been disconnected from a well, no re-connection shall be allowed in the future. (Ord. 3439 § 3 (part), 1999)"

Section 5. Chapter 14-16 of the Santa Rosa City Code is amended to read as follows:

"Chapter 14-16 BACKFLOW PREVENTION REGULATIONS FOR THE POTABLE WATER SYSTEM

14-16.010 Purpose.

This chapter is adopted in order to provide for a reasonable and effective means of protecting the City potable water system from backflow. New potable water service connections shall be installed and existing potable water service connections shall be upgraded to conform to these requirements, which are adopted pursuant to and in compliance with the California Code of Regulations, Title 17, Division 1, Chapter 5. (Ord. 3129 § 1, 1994: Ord. 2644 § 1(part), 1987)

14-16.020 Interpretation.

In interpreting and applying the provisions and requirements of this chapter, such provisions and chapter shall be held to be the minimum requirements. Where the chapter imposes a greater restriction than is imposed or required by other laws, rules, regulations, standards or ordinances, of or applicable to the City, the provisions of this chapter shall control and be applied; where such other laws, rules, regulations, standards or ordinances are more restrictive, they shall control and be applied. (Ord. 2644 § 1(part), 1987)

14-16.030 Definitions.

The words and terms used in this chapter are defined by the following:

(A) "Approved air-gap separation (air-gap)" means a physical break between the service connection and a receiving vessel on the customer's system. An air-gap separation shall be located as close as possible to the service connection, and all piping between the service connection and the receiving vessel shall be entirely visible unless otherwise approved by the engineer. An air-gap separation shall be at least double the diameter of the supply pipe, measured vertically from the flood rim of the customer's receiving vessel to the supply pipe from the service connection. In no case shall the air-gap separation be less than one inch.

(B) (1) "Approved device" means a backflow-prevention device which is manufactured in full conformance with the standards established by the American Water Works Association (AWWA) entitled "AWWA C506-78 Standards for Reduced-Pressure Principle and Double Check Valve Backflow Prevention Devices" and has completely met the laboratory and field performance specifications of the Foundation for Cross-Connection Control and Hydraulic Research (FCCC&HR) of the University of Southern California.

(2) Said AWWA and (FCCC&HR) standards and specifications have been adopted by the Engineer. Only backflow- prevention devices that have been fully tested and granted a certificate of approval by the FCCC&HR laboratory and are listed on the laboratory's current list of "Approved Devices" shall be installed on customer systems connected to the City potable water system.

(C) "Auxiliary water supply" means any water supply on or available to premises other than potable water supplied by the City water system.

(D) "Backflow" means the flow of water or other liquids, mixtures or substances under pressure from the customer's system into the City potable water system.

(E) "Backflow-prevention device" means an approved device installed to City standards which will prevent backflow or back-siphonage into the City potable water system.

(F) "Back siphonage" means the flow of water or other liquids, mixtures or substances from the customer's system into the City potable water system caused by a reduction or loss of pressure within the City potable water system.

(G) "Certified tester" means:

(1) A person who is certified by the City to perform testing of backflow prevention devices owned by customers of the City and who has completed training and received certification by an American Water Works Association sponsored backflow device testing certification program or the University of Southern California Backflow Prevention Device Testing School. To maintain City certification, a tester shall continually demonstrate competency in performing tests on backflow prevention devices to the Engineer's satisfaction.

Failure to comply with the Engineer's standard shall result in the revocation of City certification. Inactivity on the part of the tester for a period of two years shall result in revocation of City certification;

(2) A service representative of the manufacturer of the backflow-prevention device approved by the Engineer;

(3) All City personnel, as authorized by the Engineer.

(H) "City" means the City of Santa Rosa.

(I) "City potable water system" means the potable water distribution system owned and operated by the City, including the service connection to a potable water main.

(J) "Contamination" means an impairment of the quality of the water supply of the City potable water system by sewage, industrial fluids or waste liquids, compounds or other materials to a degree which creates an actual hazard to the public health through poisoning or through the spread of disease.

(K) "Cross-connection" means an unprotected actual or potential connection between the City potable water system and any source or system within a customer's premises and/or customer's system which contains water or any substance that is not or cannot be approved as a potable water supply. Bypass arrangements, jumper connections, removable sections, swivel and changeover devices, or other devices through which backflow or back-siphonage could occur, shall be considered to be cross-connections.

(L) "Customer" means any person or organization who receives water or water service from the City.

(M) "Customer's system" means the potable water piping system located immediately downstream from a meter. This is the point where the City loses jurisdiction and sanitary control over the water delivered to a customer.

(N) "Engineer" means the Director of Utilities/City Engineer of the City, or a designate.

(O) "Pollution" means an impairment of the quality of the potable water supply of the City.

(P) "Potable water supply" means a water supply which, according to recognized standards and the public health authority having jurisdiction, is safe for human consumption.

(Q) "Premises" means a piece of land together with such buildings and appurtenances located thereon.

(R) "Service connection" means the water piping system and/or meter connecting the City potable water system to the customer's system. (Ord. 3129 § 2, 1994; Ord. 2644 § 1 (part), 1987)

14-16.040 Requirements for backflow-prevention devices.

Backflow prevention devices or air-gaps of a type, manufacture and design approved by the Engineer shall be installed by the customer on the customer's system and shall be located as close as possible to the service connection, or a location approved by the Engineer, for premises and/or customer's systems in the following described categories:

(1) Premises having an auxiliary water supply;

(2) Premises and/or customer's systems within which any substance is handled under pressure or any other fashion that, in the opinion of the Engineer, could potentially permit backflow or back-siphonage into the City potable water system, including water that originated from the City water system;

(3) Premises and/or customer's systems which have more than one service connection and which, in the opinion of the Engineer, contain cross-connections or the potential for cross-connections which could result in the pollution or the contamination of the City potable water system in the event of back-flow or back-siphonage;

(4) Premises and/or customer's systems which, in the opinion of the Engineer, contain cross-connections or the potential for cross-connections which could result in the pollution or contamination of the potable City water system in the event of backflow or back-siphonage;

(5) Premises and/or customer's systems where, in the opinion of the Engineer, the potential for contamination is such as to require an air-gap separation system;

(6) Premises having a gray water use system as defined by California Code of Regulations, Title 24, Part 5; and

(7) Premises having a recycled water system as defined by the State of California Code of Regulations, Title 22, Division 4, Chapter 3. (Ord. 3129 § 3, 1994: Ord. 2644 § 1 (part), 1987)

14-16.050 Installation of backflow-prevention devices.

(A) New Service Connections.

(1) At the time of application for potable water service by a potential customer, the Engineer will review said application to determine the need for a backflow-prevention device or air-gap. If the Engineer determines that a backflow-prevention device or air-gap is required, it shall be the customer's responsibility at customer's expense to provide for installation of an approved backflow-prevention device or air-gap in accordance with City standards and at a location approved by the Engineer.

(2) Installation of a backflow-prevention device or air-gap, where required by the City, shall be a condition of City potable water service and meter installation.

(B) Existing Service Connections Without Backflow- Prevention Devices or Air-Gaps. The City may inspect the premises of existing customers which, in the opinion of the Engineer, may require a backflow-prevention device or air-gap. If the Engineer determines that a backflow-prevention device or air-gap is required, the installation of an approved device or air-gap shall be a condition of continued potable water service from the City potable water system to the premises and/or customer's systems.

(C) Upgrading of Existing Backflow-Prevention Devices or Air-Gaps. An existing backflow-prevention device or air-gap which, in the opinion of the Engineer, is a non-approved device or air-gap that does not provide adequate protection for the degree of potential hazard from the backflow or back-siphonage from a premises and/or customer's systems, shall be upgraded at the customer's expense.

(D) Penalty for Failure to Install or Upgrade Devices Within Specified Period. Failure of a customer to provide for the installation or the upgrading of a required backflow-prevention device or air-gap, as specified in Sections 14-16.050(B) and 24-16.050(C), within 30 days following written notification from the City, shall result in termination of City potable water service to the premises and/or customer's system until the customer has installed or upgraded, and tested, an approved device or air-gap to the satisfaction of the Engineer.

(E) Ownership of Backflow-Prevention Devices and Air-Gaps. Backflow-prevention devices and air-gaps installed or upgraded shall be and remain the property of the customer. (Ord. 2644 § 1 (part), 1987)

14-16.060 Testing of backflow-prevention devices.

(A) The customer shall have each backflow-prevention device installed on the customer's system inspected and tested by a certified tester at least once a year. Where the Engineer determines that there is a potential for backflow or back-siphonage, the Engineer may require inspection and testing of the backflow-prevention devices at more frequent intervals. Inspections and tests shall be at the customer's expense.

(B) Where City personnel are required to perform the test, the City shall charge the customer a testing fee established by the City council, by resolution.

(C) Backflow-prevention devices which fail to pass inspection or testing by a certified tester shall be maintained and repaired in accordance with Section 14-16.070. The City may perform additional testing if the Engineer determines it to be in public's best interest. The customer shall pay for additional testing performed by the City if the customer's device fails a test.

(D) The City may terminate the customer's potable water service if the customer fails to have a backflow prevention device inspected and tested within the time period required by the City. (Ord. 3129 § 4, 1994: Ord. 2644 § 1 (part), 1987)

14-16.070 Maintenance and repair of backflow-prevention devices.

(A) The customer on any premises where backflow-prevention devices are installed shall be responsible for maintenance and repair of the devices. The customer shall at all times maintain the devices in proper working order as a condition of continued City potable water service. If a backflow-prevention device should fail to pass inspection and testing pursuant to Section 14-16.060 of this chapter, the customer shall, within 30 days after notification of test results, provide for maintenance and repair of the device.

(B) Repair, overhaul or replacement of a backflow- prevention device shall be performed by a private certified tester, as defined in subsections G1 and G2 of Section 14-16.030, at the customer's expense. Repairs and satisfactory retest of devices by a private certified tester shall be documented and submitted on a form provided by the City. Failure by the customer to repair a backflow-prevention device within the time period allowed by the City shall result in termination of City potable water service to the premises. (Ord. 2644 § 1 (part), 1987)

14-16.080 Entry upon customer's premises.

As a condition of potable water service for new customers and as a condition of continued potable water service for existing customers, the City may require the customer to have a backflow-prevention device or air-gap installed and maintained on the customer's system at the point of delivery from the City potable water system. The customer shall permit the City to enter upon the customer's property during the City's normal working hours, or in case of emergency at any time, to test and inspect the customer's backflow-prevention or air-gap device. The City may terminate the customer's service if the customer refuses to allow entry by the City. (Ord. 3129 § 5, 1994: Ord. 2644 § 1 (part), 1987)

14-16.090 Termination of water service.

In addition to the grounds for termination set forth in Sections 14-16.060, 14-16.070 and 14-16.080, the City may terminate potable water service to any premises or customer's systems if a required back-flow-prevention device or air-gap is removed by the customer, or if the City finds evidence that an installed backflow-prevention device or air-gap has been bypassed or rendered ineffective. (Ord. 3129 § 6, 1994: Ord. 2644 § 1 (part), 1987)

14-16.100 Violation.

Every customer who fails to install a backflow-prevention device or air-gap as required by this chapter and every person who violates any other provision of this chapter is guilty of a misdemeanor. Every day any violation of this chapter continues is a separate offense. (Ord. 3238 § 27, 1996: Ord. 2644 § 1 (part), 1987)"

Section 6. Chapter 14-20 of the Santa Rosa City Code is amended to read as follows:

"Chapter 14-20 WATER SYSTEM VIOLATIONS

14-20.010 Purpose.

The purpose of this chapter is to promote public health and safety by fixing a civil penalty for: taking water from the City potable or recycled water system without the City's permission; tampering with or damaging the City potable or recycled water system; operating the City potable or recycled water system without the City's permission. These sections are intended to assure the safe functioning of the potable or recycled water system by discouraging potential contamination as well as other potential damage resulting from tampering, unauthorized operation, or unauthorized use of the City potable or recycled water system. (Ord. 2792 § 1 (part), 1989)

14-20.020 Unauthorized taking of City potable or recycled water.

Every person who willfully takes water from the City potable or recycled water system without the City's permission is liable to the City in the sum of $500.00, as a civil penalty, for the first such act and $1,000.00, as a civil penalty, for each subsequent act during any three-year period. This sum shall be recoverable by civil suit in a court of competent jurisdiction. This section does not limit the City's right to recover the cost of any City potable or recycled water taken without the City's permission. (Ord. 2792 § 1(part), 1989)

14-20.030 Tampering or damage to City potable or recycled water system.

Every person who willfully tampers with or causes damage to any City potable or recycled water system appurtenance is liable to the City in the sum of $500.00, as a civil penalty, for the first such act and $1,000.00, as a civil penalty, for each subsequent act during any three-year period. This sum shall be recoverable by civil suit in a court of competent jurisdiction. This section does not limit the City's right

to recover the cost or damage to its potable or recycled water system. (Ord. 2792 § 1(part), 1989)

14-20.040 Operation of City valve or hydrant without permission of City.

Every person who willfully operates or uses any City potable or recycled water valve or hydrant on the City potable or recycled water system without the City's permission is liable to the City in the sum of $500.00, as a civil penalty, for the first such act and $1,000.00, as a civil penalty, for each subsequent act during any three-year period. This sum shall be recoverable by civil suit in a court of competent jurisdiction. (Ord. 2792 § 1(part), 1989)"

Section 7. Chapter 14-21 of the Santa Rosa City Code is amended to read as follows:

"Chapter 14-21 WATER WASTE REGULATIONS

14-21.010 Purpose.

The purpose of this chapter is to promote the efficient use of potable and recycled water by prohibiting water uses which constitute water waste. The sections of this chapter encourage reasonable use of the potable and recycled water supply by eliminating all intentional or unintentional water waste when a reasonable solution is available and discouraging use of equipment which is wasteful. (Ord. 3426 § 2 (part), 1999)

14-21.020 Water waste—Definition.

Water waste means:

(A) Potable or recycled water use in outdoor areas resulting in runoff; or

(B) Breaks or leaks in the potable or recycled water delivery system. (Ord. 3426 § 2 (part), 1999)

14-21.030 Prohibition of potable or recycled water waste.

A customer shall not allow potable or recycled water waste. (Ord. 3426 § 2 (part), 1999)

14-21.040 Requirements for certain recirculating systems in new potable or recycled water services.

New potable or recycled water services shall be equipped with recycling or reuse systems for the following water service receiving equipment: evaporative cooling systems, decorative water fountains, conveyor car washes and industrial clothes washers. (Ord. 3426 § 2 (part), 1999)

14-21.050 Notice and disconnection.

The Director of Utilities may issue a written warning to anyone who violates the provisions of this chapter. If a customer does not correct the violation within 15 days of notification, or such other time as specified by the Director, the City may disconnect potable or recycled water service. (Ord. 3426 § 2 (part), 1999)"

Section 8. Chapter 14-25 is added to the Santa Rosa City Code to read as follows:

"Chapter 14-25 RECYCLED WATER REGULATIONS

14-25.010 Definitions.

For the purposes of this chapter, the following words and phrases will have the meanings respectively ascribed to them in this section.

(A) "Approved uses" means the uses defined in the City's Recycled Water User's Guide or by state law as being approved for use of tertiary treated recycled water.

(B) "Customer", "Consumer", or "User" means a person or entity having a connection into the recycled water system or potable water system owned and operated by the City.

(C) "On-site recycled water system" means that portion of the recycled water system on the consumer's premises which begins at the coupling on the consumer's side of the water meter.

(D) "Potable water" means water which meets the federal, state and local standards for human consumption and is approved for human consumption.

(E) "Recycled water" means tertiary treated water which results from the treatment of wastewater, is suitable for direct beneficial use, and conforms to the definition of disinfected tertiary recycled water in accordance with state law.

(F) "Recycled Water Project Area" means all areas within the Santa Rosa Urban Growth Boundary. Customers within the Recycled Water Project Area are eligible for recycled water service for approved uses when it becomes available.

(G) "Recycled Water Service Area" means the area within the Recycled Water Project Area which has recycled water service or is about to receive recycled water service within a reasonable time, as determined by the Director of Utilities.

(H) "Recycled Water Use Permit" means a permit given by the City to the customer which grants permission to use recycled water and requires the customer to use recycled water in accordance with the rules, regulations and standards of the Recycled Water User's Guide and all applicable state and local rules and regulations.

(I) "Recycled Water User's Guide" means City's document which details the requirements of the state and local rules and regulations that apply to the design, installation, and operations and maintenance of the on-site recycled water system, including but not limited to the requirements of the California Code of Regulations, Title 22.

14-25.020 Administration and regulatory authority.

The State of California has declared that the use of potable water for non-potable uses is a waste or unreasonable use of water if recycled water is available. The City owns and operates the recycled water distribution system providing recycled water for approved purposes. The City also owns and operates the potable water distribution system.

The Board of Public Utilities has the authority to adopt rules and regulations for the purpose of administering and enforcing the provisions of this chapter, and for the purpose of regulating and operating the recycled water system.

14-25.030 Recycled water service eligibility.

All areas served by potable water service within the Recycled Water Project Area are eligible for recycled water service connections for approved uses when recycled water becomes available.

However, the Director of Utilities, or his or her designee, may determine that connection to the recycled water system is not economically or operationally feasible because of distance from an available recycled water source or other such conditions as the Director of Utilities, or his or her designee, deems appropriate.

For single family residential landscape irrigation, the Director of Utilities will review each request to determine the suitability for recycled water use.

14-25.040 Requirement to use recycled water.

The City reserves the right to require all customers who connect to the City water system on or after October 19, 2007, to use recycled water in-lieu of potable water for all approved uses.

14-25.050 Recycled Water User's Guide.

The City will at all times have a Recycled Water User's Guide which will be prepared, maintained and updated by the Director of Utilities, or his or her designee. The purpose of the Recycled Water User's Guide is to detail the requirements of the following rules and regulations as they apply to the City recycled water system: this chapter; the California Code of Regulations Title 22; other state and local rules and regulations related to the use of recycled water as they may be adopted or changed from time to time.

14-25.060 Recycled Water Use Permit.

The City will issue to each recycled water customer a Recycled Water Use Permit for each site, which grants permission to use recycled water and requires the customer to use recycled water in accordance with the rules, regulations and standards of the Recycled Water User's Guide and all applicable state and local rules and regulations.

14-25.070 Designation of Site Supervisor.

Each customer will be required to designate a Site Supervisor for each site covered by a Recycled Water Use Permit. The Site Supervisor must serve as a liaison with the City, and must have the authority to carry out the requirements of the Recycled Water User's Guide and Recycled Water Use Permit, including the operations and maintenance of the on-site recycled water system and prevention of potential hazards.

14-25.080 Operation and maintenance of customer equipment.

Each customer will be required to operate and maintain the on-site recycled water system in accordance with the Recycled Water User's Guide and Recycled Water Use Permit.

Notwithstanding compliance with this section, the City reserves the right to take any action necessary with respect to the operation of the customer's recycled water system to safeguard public health.

14-25.090 Backflow prevention on recycled water systems.

The City reserves the right to require a backflow prevention device on the customer's recycled water system if it is determined that there is a backflow hazard on site. If a backflow device is required, it must be properly maintained by the customer, inspected quarterly and tested at least annually. All required tests must be submitted to the City in accordance with the City backflow prevention program.

14-16.100 Entry upon customer's premises.

As a condition of recycled water service for new customers and as a condition of continued recycled water service for existing customers, the customer will permit the City to enter upon the customer's property during the City's normal working hours, or in case of emergency at any time, to inspect the customer's on-site recycled water system for compliance with the provisions of this chapter.

14-25.110 Enforcement of recycled water use rules and regulations.

The Director of Utilities may immediately terminate recycled water service to any customer who violates the provisions of this chapter.

In the alternative, the Director of Utilities may issue a written warning to anyone who violates the provisions of this chapter. If a customer does not correct the violation within 15 days of notification, or such other time as specified, the Director of Utilities may terminate recycled water service without further notice."

Section 9. Environmental Determination. The Council makes the following findings in support of adoption of this ordinance:

1. The Council hereby determines that the Santa Rosa Urban Recycled Water Ordinance is within the scope of the Program EIR for the Incremental Recycled Water Program (IRWP), and that the Santa Rosa Urban Recycled Water Ordinance was covered in the Program EIR for the purposes of CEQA (CEQA Guidelines, § 15168, subd. (c)(4)); and

2. The Council hereby adopts the "CEQA Findings of Fact for the Santa Rosa Urban Recycled Water Ordinance and Policies Project" attached to the Staff Report for this Agenda Item for the Santa Rosa Urban Recycled Water Ordinance, in accordance with Public Resources Code § 21081(a); and

3. The Council hereby adopts the "Statement of Overriding Considerations for the Santa Rosa Urban Recycled Water Ordinance and Policies Project" attached to the Staff Report for this Agenda Item for the Santa Rosa Urban Recycled Water Ordinance, in accordance with Public Resources Code § 21081(b); and

4. The Council hereby adopts the "August 2007 Mitigation and Monitoring Program for the Santa Rosa Urban Recycled Water Ordinance and Policies Project" attached to the Staff Report for this Agenda Item for the Santa Rosa Urban Recycled Water Ordinance, in accordance with Public Resources Code § 21081.6(a)(1); and

5. The custodian of the documents or other material which constitutes the record of proceedings upon which this ordinance is based is:

Glen Wright, Deputy Director Water Resources
Santa Rosa Utilities Department
69 Stony Circle
Santa Rosa, CA 95401

Section 10. Severability. If any section, subsection, sentence, clause, phrase, or word of this ordinance is for any reason held to be invalid, the validity of the remaining portions of this ordinance shall not be affected.

Section 11. Effective Date. This Ordinance shall be in full force and effect from and after the expiration of thirty (30) days from the date of its final passage.

IN COUNCIL DULY PASSED AND ADOPTED this 18th day of September, 2007.

AYES: (6) Mayor Blanchard; Councilmembers Bender, Dean, Gorin, Jacobi, Sawyer

NOES: (0)

ABSENT: (1) Vice-Mayor Pierce

ABSTAIN: (0)

ATTEST: Susan Stoneman, City Clerk APPROVED: Bob Blanchard, Mayor

APPROVED AS TO FORM:

Brien Farrell, City Attorney

CITY OF SANTA ROSA WATER EFFICIENT LANDSCAPE POLICY, CITY COUNCIL POLICY 200-20

COUNCIL POLICY			
Subject:	Policy Number	Effective Date	Number of Pages
WATER EFFICIENT LANDSCAPE POLICY	200-20	07/01/2007	Page 1 of 13

Introduction: The Water Efficient Landscape Policy was initially adopted by Resolution No. 21142 of the Santa Rosa City Council on December 22, 1992 in response to California's Government Code Section 65591 which requires local agencies to adopt water efficient landscape regulations. The Policy was updated to amend the Applicability, Definitions, Irrigation, Documentation for Compliance, Other Provisions and Provisions for Appeal sections and to add an Appendix to the policy and was adopted as Council Policy 200-20 by the Santa Rosa City Council on June 5, 2007 to apply to projects on or after July 1, 2007. The adopted Policy is shown below.

The Policy:

I. PURPOSE

The purpose of this policy is to ensure efficient water use by establishing standards for landscape design appropriate to Santa Rosa's climate, soils, water resources, land use and resource planning.

II. APPLICABILITY

1. This policy applies to all new projects, public and private, with landscaping that require conditional use permit or design review by the City, or a Utilities certificate on or after July 1, 2007[1], and in the following categories: office, commercial, industrial and institutional landscaping; park and greenbelt landscaping; developer-installed landscaping in multiple-family residential and in common areas of single-family residential.

2. This policy does not apply to landscaping in private areas of single-family and multiple-family residential projects, since they are subject to City Council Policy No. 200-19.

3. This policy does not apply to any landscapes irrigated by private well water. However, these projects are encouraged to use this policy as guidelines.

4. This policy does not apply to registered historical sites.

1 Projects that have a completed application for a Conditional Use Permit, Building Permit, Design Review or Utilities Certificate on file prior to July 1, 2007 will be governed by the City of Santa Rosa Water Efficient Landscape Policy as adopted by City Council Resolution No. 21142 and as amended by City Council Resolution No. 26846.

5. This policy does not apply to ecological restoration projects that do not require permanent irrigation systems.

6. Parks, playgrounds, sports fields, golf courses, schools and cemeteries are exempt from the turf area limit of this policy. In these projects, turf will be allowed in all areas where functional need for turf is demonstrated. Every other requirement of this policy is applicable.

III. DEFINITIONS

For purposes of this Policy, the following definitions apply:

1. Drought resistant cool-season grass - Cool season grasses which can tolerate drought stress. These grasses usually require high-water-use irrigation scheduling to stay green and vital, but will survive under limited water. Examples: turf-type tall fescues e.g., Medallion and Rebel.

2. Functional need (for turf) - Turf planting which serves a functional or practical need rather than purely aesthetic purpose. Examples: athletic fields and pedestrian circulation areas.

3. High-water-use plantings - Turf, annuals, container plantings, and other plants recognized as high-water-use by the *Water Use Classification of Landscape Species* document (http://www.owue.water.ca.gov/docs/wucols00.pdf), as it currently exists or maybe amended in the future.

4. Hydrozone - A portion of a landscape having plants with similar water needs. Typically, a hydrozone is served by a valve or set of valves with the same type of irrigation hardware and schedule.

5. Irrigation circuit - A section of an irrigation system, including the piping and sprinkler heads or emitters, that is operated by a single remote control valve.

6. Low-water-use plants - "Mediterranean Region" and native trees, shrubs and groundcovers (such as rosemary), juniper, most native oaks, and other plants recognized as low-water-use by the *Water Use Classification of Landscape Species* document (http://www.owue.water.ca.gov/docs/wucols00.pdf), as it currently exists or maybe amended in the future.

7. Low Head Drainage - Water that escapes from the low irrigation heads after a valve has turned off.

8. Matched precipitation rate - All emission devices on a given irrigation valve apply water at the same rate.

9. Microclimate - A section of a landscaped site with unique climatic conditions that affect the amount of water plants within the area use. Examples of landscape mircroclimates include courtyards, tree understory areas, median islands.

10. Moderate-water-use-plant - Many ornamental trees, shrubs, and groundcovers, most fruit bearing trees, roses, and other plants recognized as moderate-water-use by the *Water Use Classification of Landscape Species* document, (http://www.owue.water.ca.gov/docs/wucols00.pdf), as it currently exists or maybe amended in the future.

11. Non-mechanically compacted soil - Soil which has not undergone engineered compaction procedures.

12. Organic amendment - Any fully organic material added to the soil to improve soil structure, and other physical properties of the soil. Examples: composted sawdust, redwood soil conditioner, compost, peat moss.

13. Overspray - Water which is discharged from an overhead irrigation system outside the desired planting area, especially water which wets adjacent hard surfaces, e.g., sidewalks, patios, streets.

14. Porous landscape fabric - A material that allows water to flow through it to the soil surface.

15. Porous mulch - A loose material which is applied to the soil surface to reduce evaporation and retard weed growth. Examples of acceptable mulches include: wood chips, decomposed granite, straw, compost.

16. Project's landscaped area - The parcel area less building, footprints, driveways, paved walks and patios, parking areas and undeveloped open space or designated natural areas. The project's landscaped area does include all areas under irrigation, water features and hardscape other than those noted above.

17. Project water saving techniques (to mitigate run-off from slopes) - Landscape design techniques which either allows irrigation to be applied at a rate close to the infiltration rate of the soil or which captures and recycles run-off.

18. Rain shut-off device - A device which automatically shuts the irrigation system off when a measurable amount of rain occurs.

19. Reference evapotranspiration - A standard calculation of the quantity of water transpired by a reference crop and evaporated from adjacent soil surfaces as measured by the California Irrigation Management Information System (CIMIS) of weather stations.

20. Registered historical sites - Sites which are registered as historically significant through either national, state, city or county registries.

21. Runoff - Water which is not absorbed by the soil to which it is applied and runs off onto other areas. Runoff usually occurs when water is applied at a rate greater than the infiltration rate of the soil, and is especially problematic on slopes and on heavy clay soils.

22. Water feature - Ornamental or functional body of water or fountain.

IV. PLANT SELECTION, WATER FEATURES, AND USE LIMITATION

1. Turf, high-water plantings (e.g. annuals, container plants) and water features (e.g., fountains, pools) shall all be considered high-water-uses and shall be limited to not more than 40% of the project's landscaped area if non-drought resistant cool-season grass is used, and to no more than 50% of the landscaped area if drought resistant cool-season grass or warm-season grass is used.

2. Plants selected in all other landscaped areas shall be well-suited to the climate, geology and topographic conditions of the site, and shall be low-water-use once established.

3. No turf or high-water-use plants shall be allowed on slopes exceeding 10%, or 25% where other project water saving techniques can compensate for the increased runoff, and where need for such slopes is demonstrated.

4. No turf shall be allowed in areas eight feet wide or less.

5. Plants having similar water use shall be grouped together in distinct hydrozones and shall be irrigated with separate irrigation circuits.

6. Recirculating water shall be used for all water features.

V. SOIL CONDITIONING AND MULCHING

1. A minimum of one foot depth of non-mechanically compacted soil shall be available for water absorption and root growth in planted areas.

2. In areas with overhead irrigation, organic amendment shall be incorporated into the soil to a minimum depth of 6" at a minimum rate of 5 cubic yards per 1000 square feet, or per specific amendment recommendations from a soils laboratory report.

3. A minimum of a two inch layer of porous mulch shall be applied to all exposed soil surfaces of non-turf areas within the landscaped area. Non-porous material, such as plastic sheeting, shall not be placed under the mulch; porous landscape fabric is permitted.

VI. IRRIGATION

1. All planted landscaped areas shall be irrigated with automatic controllers with repeat start-time potential.

2. When the landscape contains more than one type of plant type (turf, ground cover, annual) or a variety of solar exposures, controllers shall have multiple program potential.

3. Separate irrigation circuits shall be provided for different plant types, irrigation methods, solar exposures, microclimates (e.g. understory, courtyard), slopes and soil types.

4. Pressure regulation shall be installed so that all components of the irrigation system operate at the manufacturer's recommended optimal pressure

5. Point application methods (drip, bubbler) shall be used where overhead irrigation

would result in overspray, runoff, or non-uniform application.

6. Irrigation delivery systems shall be designed in such a manner that water does not run off or overspray onto adjacent pavement, sidewalks, structures or other non-landscaped areas.

7. Sprinkler heads shall have matched precipitation rates on each irrigation circuit.

8. Rain shut-off devices shall be installed on each irrigation controller.

9. Check valves shall be installed where elevation differential may cause low head drainage.

VII. DOCUMENTATION FOR COMPLIANCE

The following documentation is to be presented to the City at each of the four steps of review defined below. This documentation is required for compliance with this policy.

STEP 1: PRELIMINARY DESIGN REVIEW

In the Preliminary Landscape Statement (See Appendix A), briefly describe the planting and design actions that are intended to meet the requirements of this policy.

STEP 2: FINAL DESIGN REVIEW

The following shall be submitted with a design review application or with a conditional use permit application when involving design review or when required to apply for a Utilities Certificate:

A. The landscape planting design plan that accurately and clearly identifies and depicts:
   - new and existing trees, shrubs, groundcovers, turf, and any other planting areas;
   - plants by botanical name and common name;
   - plant sizes and quantities;
   - property lines, new and existing building footprints, streets, driveways, sidewalks and other hardscape features;
   - pools, fountains, water features,

B. A conceptual irrigation design plan or statement which describes irrigation methods and design actions that will be employed to meet the irrigation specifications of this policy.

STEP 3: BUILDING PERMIT/PLAN CHECK

The following shall be reviewed and approved prior to a building permit being issued:

A. The planting design as submitted at step 2.

B. The irrigation plan drawn at the same scale as the planting plan that::

- Accurately and clearly identifies and depicts irrigation system point of connection;
- Accurately and clearly identifies and depicts irrigation system components, e.g. controller, pipe, remote-control valves, sprinklers and other application devices, rain shut-off device, check valves, pressure regulating devices, backflow prevention devices.
- Includes the Hydrozone Table and Hydrozone Summary Table (See Appendix B)

C. Where slopes exceed 10%, a grading plan drawn at the same scale as the planting plan that accurately and clearly identifies finished grades and spot elevations where contours exist within landscaped areas.

D. The Certificate of Conformance (See Appendix C), completed by the design professional, which substantiate compliance with all requirements of this policy.

STEP 4: COMPLETION OF INSTALLATION

Upon installation and completion of the landscape a final inspection shall be performed to verify policy compliance. The Water Conservation Program requires advance notice for all inspections. Inspections can be requested for either morning or afternoon during regular business hours. Specific times of the day cannot be scheduled. Building permit final approval shall not be completed until the landscape inspection is approved. An extension of the building permit to complete landscape and irrigation installation shall be requested and must be approved by the Chief Building Official prior to occupancy.

VIII. OTHER PROVISIONS

1. The Director of Utilities will consider and may allow the substitution of design alternatives and innovation which may equally reduce water consumption for any of these requirements.

2. The Director of Utilities will accept documentation methods, water allowance determination, and landscape and irrigation design requirements of the State of California Model Water Efficient Landscape Ordinance instead of sections 2-6 of these requirements where it can be demonstrated that the State procedure will more effectively address the design requirements of the project.

IX. PROVISIONS FOR APPEAL

The applicant or any affected person may appeal the final decision of staff regarding plan check or final inspection to the Director of Utilities, or a final decision of the Director of Utilities to the Board of Public Utilities by filing a written notice of appeal within ten City working days of the date of the decision. The decision of the Board of Public Utilities shall be final and may not be appealed to the City Council. An appeal regarding plan check must be submitted prior to the installation of the landscape.

Appendix A

CITY OF SANTA ROSA

WATER EFFICIENT LANDSCAPE POLICY

Preliminary Landscape Statement

Project Name _____

Project Location _____

Type of Project (e.g., commercial, residential) _____

_____

The *Preliminary Landscape Statement* is to be submitted at Preliminary Design Review.

Briefly describe the planting and design actions intended to meet the requirements of the Water Efficient Landscape Policy.

_____

_____

_____

_____

_____

_____

_____ _____
Signature Date

_____ _____
Project Representative Phone

_____
Address

Appendix B

CITY OF SANTA ROSA

WATER EFFICIENT LANDSCAPE POLICY

On landscape and irrigation plans, include the total planned square footage of planted areas for high water use plants (i.e.- turf, annuals and container plants); moderate water use plants (i.e. - ornamental trees, shrubs ground covers, and perennials primarily irrigated by sprinklers); and low water use plants (i.e. - drought tolerant plants irrigated primarily through drip emitters). The planting plan must include specific plant names that fit in each category. The following tables should appear on all landscape and irrigation plans:

Hydrozone Table Complete for all valves

Valve No.	Irrigation Method (Spray, drip, etc.)	Plant type (High, Moderate, Low)	GPM	Precipitation Rate (in/hr)	Area (ft^2)	% of Landscape
1						
2						
3						

Summary Hydrozone Table

Plant Type	**Area (ft^2)**	**% of Landscape**
Low water use		
Moderate water use		
High water use		
Total		

Appendix C

CITY OF SANTA ROSA

WATER EFFICIENT LANDSCAPE POLICY

Certificate of Conformance

Project Name _____

Project Location _____

Type of Project (e.g., commercial, residential) _____

_____

The *Certificate of Conformance* is to be submitted with the building permit application, together with complete planting, irrigation and, where necessary, grading plans.

Please check all boxes, unless otherwise noted, and fill in appropriate blanks.

I Plant Selection, Water Features, and Use Limitation

1. Check one:

   [ ] Turf, high-water-use plantings (e.g. high-water-use plants, container plants) and water feature (e.g.fountains, pools) cover not more than 40% of the project's landscaped area if non-drought resistant cool-season grass is used, and to no more than 50% of the landscaped area if drought resistant or warm-season grass is used.

   Type of grass used _____.
   Total high-water-use coverage _____ %.

   [ ] This project is exempt from the turf area limit of this policy because it falls into one of the following categories: park, playground, sports field, golf course, school, and cemetery. (Circle appropriate category)

2. [ ] Plants selected in all other landscaped areas are well-suited to the climate, geology and topographic conditions of the site, and shall be low-water-use once established.

3. Check one:
   [ ] No turf or high-water-use plants are used on slopes exceeding 10%.
   [ ] Turf is used on slopes up to 25% with the following special water saving techniques used to compensate for increased run-off:
   _____
   _____
   _____
   _____

4. [ ] No turf is used in areas eight feet wide or less.

5. [ ] Plants having similar water use are grouped together in distinct hydrozones and are irrigated with separate irrigation circuits.

6. Check if water features are used:
   [ ] Recirculating water is used for all water features.

II Soil Conditioning and Mulching

1. [ ] A minimum of one foot depth of non-mechanically compacted soil is available for water absorption and root growth in planted areas.

2. Check one:
   [ ] In areas with overhead irrigation, organic amendment is specified to be incorporated into the soil to a minimum depth of 6" at a minimum rate of 5 cubic yards per 1000 square feet.
   [ ] Amendment recommendations from a soils laboratory report are specified, and this report is attached.

3. [ ] A minimum of a two inch layer of porous mulch is specified to be applied to all exposed soil surfaces of non-turf areas within the landscaped area. No non-porous material, such as plastic sheeting, will be placed under the mulch.

III Irrigation

1. [ ] All landscaped areas are irrigated with automatic systems with repeat start-time potential.

2. Check if appropriate:

[ ] This landscape contains more than one type of plant type (turf, ground cover, annual) or a variety of solar exposures, therefore controllers with multiple programs are used.

[ ] Separate irrigation circuits are provided for different plant types, irrigation methods, solar exposures, microclimates, slopes and soil types.

[ ] Pressure regulation is provided to effect correct operating pressure for each water delivery hardware type (e.g. spray, rotor, drip, bubbler). The specific pressure regulation techniques employed are:

[ ] Point application methods (drip, bubbler) are used where overhead irrigation would result in overspray, runoff, or non-uniform application.

[ ] Irrigation delivery systems are designed in such a manner that water does not run off or overspray onto adjacent pavement, sidewalks, structures or other non-landscaped areas.

[ ] Sprinkler heads have matched precipitation rates on each valve circuit.

[ ] Rain shut-off devices are specified for each irrigation controller.

[ ] Check valves specified where elevation differential may cause low head drainage.

_____ _____

Signature Date

_____ _____

Project Design Professional Phone

_____

Address

Appendix

H REFERENCES

1. **California Code of Regulations (CCR), Title 22, Division 4, Chapter 3, "Water Recycling Criteria"** – These regulations are written by the State DPH and specify the approved uses and use area requirements, such as hose bib restrictions, prohibition of irrigation near wells, etc. The regulations govern both the City of Santa Rosa's distribution system as well as the User's on-site system.
2. **California Code of Regulations (CCR), Title 17, "Drinking Water Supply - Backflow Prevention"** – Title 17 specifies requirements intended to protect the public drinking water supply from contamination. Some requirements specified in Title 17 include backflow prevention devices, designation of a User, Site Supervisor, and Cross-Connection testing requirements.
3. **American Water Works Association (AWWA), California-Nevada Section, Guidelines For Distribution of Nonpotable Water** – This document provides recommended guidelines for planning, designing, constructing, and operating nonpotable water systems, including recycled water systems. The guidelines themselves are not regulations but many agencies have adopted them as general requirements. The document covers both installations of the City of Santa Rosa's distribution systems and on-site use systems.
4. **International Association of Plumbing and Mechanical Officials (IAPMO) Uniform Plumbing Code, Appendix J –** Appendix J of the Uniform Plumbing Code sets forth requirements when recycled water is used within buildings in a dual-plumbed system for nonpotable domestic uses, such as toilet and urinal flushing. This section of the Uniform Plumbing Code does not apply to irrigation sites, where the recycled water system is located outside buildings, or industrial sites, where the recycled water is used for non-domestic industrial purposes. In addition, the pipe separation regulations indicated in this document are different than and take precedence over the Appendix J requirements.
5. **Regional Water Quality Control Board – The North Coast Regional Water Quality Control Board (RWQCB)** is the agency responsible for preserving the quality of California's water resources. The RWQCB is responsible for issuing National Pollutant Discharge Elimination System (NPDES) permits, which contains regulations concerning discharge of water in the city limits of Santa Rosa.
6. **State of California Department of Public Health, Drinking Water Field Operations Branch, Sonoma County District** – The State Department of Public Health Drinking Water Field Operations Branch (DPH) is the agency responsible for protecting and promoting the safety of California's drinking water. They are responsible for developing the criteria and regulations for recycled water use, evaluating and approving recycled water systems, and for making recommendations to the RWQCB regarding the public health implications of recycled water use.
7. **Photography –** All photographs included in the Recycled Water User's Guide were provided by the City of Santa Rosa. Photography by Kelly McManus. Photography direction and coordination by Data Instincts. Special thanks to Agilent Technologies for image on page 3.