GROUNDWATER REPLENISHMENT PROJECT

AUGUST 2014

Public Outreach Summary Report

City of Clearwater

Southwest Florida Water Management District
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TETRA TECH

LBG Lockwood, Brandhorst & Graham, Inc.

City of Clearwater
Groundwater Replenishment Project
Public Outreach Summary Report

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Introduction

The Groundwater Replenishment Project (GWR) was cooperatively funded by the Southwest Florida Water Management District (the District) with Tetra Tech, Inc. and Leggette, Brashears & Graham Inc. serving as engineering and hydrogeology consultants respectively. The GWR's pilot and demonstration phase of the Feasibility Study requires that a Public Outreach Summary Report be produced as part of the public information scope. This report contains the public information methodologies and outcomes and provides recommendations for the next phase of the work for the project.

Project Overview

In 2008 to ensure the future of its water supply, the City of Clearwater began looking at the feasibility of employing groundwater replenishment technology so that more drinking water would be available in the years ahead. Beneath the city, the fresh water from the Upper Floridian aquifer used for drinking water sits on top of a layer of brackish -- or somewhat salty -- water. By balancing the recharge of the aquifer level and water withdrawals, the fresh water is protected from becoming salty.

The Groundwater Replenishment Project has three phases consisting of the following activities, which have been conducted to date:

- Preliminary Feasibility Study
- Feasibility Study
- Pilot-Scale Demonstration

The Preliminary Feasibility Study, which was conducted in 2009, evaluated groundwater levels within the city to determine if the groundwater could be improved with purified water, thus increasing the availability of drinking water. The preliminary study concluded that it is feasible for the City to consider purifying reclaimed water and using the purified water to recharge the aquifer as part of a potable reuse program.

In 2011, the City completed a comprehensive Feasibility Study to further explore the potential for a groundwater replenishment program for the City. The Feasibility Study investigated if up to 3.0 million gallons per day (MGD) of reclaimed water can be purified to meet or exceed drinking water standards and if the introduction of this purified water into a brackish water zone below the freshwater of the Upper Floridian aquifer could help improve groundwater levels. The Feasibility Study, which also included the preliminary design of the pilot purification treatment system, concluded that the Groundwater Replenishment Project is achievable, and that pilot scale treatment and field testing should be conducted to demonstrate the treatment ability of a pilot purification treatment system.

The third phase of the program, which began in 2012 and is ongoing, was constructing and operating the pilot purification treatment system and conducting aquifer field testing. This phase has two objectives:

- Performing underground hydrologic testing and analysis, and conducting a six-month recharge test using groundwater

- Operating a small-scale purification plant for one-year to evaluate the process and water treatment options

The preliminary design of a pilot purification system, which included primary components, was completed during the first phase of the Groundwater Replenishment Project with final design being completed in the second phase. The Pilot Purification System, which went online June 3, 2013, was tested to confirm design and operational parameters for the proposed construction project. During the one-year operation (8,700 total hours) the pre-treatment design, membrane configuration, advanced oxidation process configuration, oxygen removal process, and purified water stabilization process were pre-tested and confirmed.

The purpose of the pilot and demonstration phase is to provide the necessary data to ultimately design and construct a water purification facility that can safely treat up to 3 MGD of reclaimed water that surpasses drinking water standards. The facility would optimize the City's water management by increasing recharge and water withdrawn from local well fields and reducing the amount of water withdrawn from regional well fields and the amount of excess reclaimed water being disposed into Tampa Bay.

A pilot-scale system has been erected at the City's Northeast Water Reclamation Facility to simulate the treatment processes proposed for the full-scale system including a membrane filtration system with ultrafiltration a reverse-osmosis system; an advanced oxidation process system using hydrogen peroxide addition upstream of ultraviolet treatment; a dissolved oxygen removal system; and post-treatment stabilization chemical feed systems.

As part of the second phase, the City along with the public relations and project consultants developed a comprehensive public outreach strategy, which included a communication plan, to build awareness and educate stakeholders about the Groundwater Replenishment Plan and its benefits. At the same time the Southwest Florida Water Management District (District) conducted a survey of adults living in four counties – Hillsborough, Pasco, Pinellas, and Polk -- to gauge the public's perception of reused water.

Public Information Scope and Objectives

The public outreach strategy is to be followed during the pilot and demonstration phase of the study and through project completion to promote the overall acceptance of the aquifer recharge using purified water by educating and engaging stakeholders in order to increase stakeholder understanding and support. Three City of Clearwater departments – Public Utilities, Engineering, and Public Communications – and the District have been actively involved in outreach efforts.

According to the public information scope, the following actions at a minimum are to be included as part of the public outreach program:

- Identify primary stakeholders affected by the project and community organizations that could be used to communicate information on the project
- Develop an informational brochure about the project

- Develop an expanded discussion of the project on the City's website
- Conduct presentations to community organizations to educate stakeholders about the need, purpose, and objectives of the project
- Conduct tours of the Pilot Purification System and develop a schematic of the pilot system for the Northeast Water Reclamation Facility to allow the public to view the details of the treatment process
- Produce and submit a Public Outreach Summary Report, which describes all public information methodologies and outcomes as well as recommendations for the next phase of work. The report is also to include all printed materials, handouts and flyers that were designed for the project

Southwest Florida Water Management District Recharge Survey

In 2012, the Southwest Florida Water Management District conducted a survey of adults living in four counties – Hillsborough, Pasco, Pinellas, and Polk -- to gauge the public's perception of reused water (www.swfwmd.state.fl.us/files/database/social_research/SWFWMD_Water_Perception_Survey_Final_10.17.12.pdf). Two research issues were raised in the Recharge Survey:

- Which terms for "reused" water are most acceptable to the public, and hence, will encourage more and varied uses of reused water
- Which sources are most credible in speaking about reused water as being acceptable for more and varied uses

The data produced by this study was to be used in guiding the education efforts of the public and increase the acceptance of reused water. The interviews were conducted from June 12-30, 2012 by Kerr & Downs Research. There were 384 completed interviews in each county resulting in a plus-or-minus five percentage points sampling error given a 95 percent confidence level. The total sample across four counties was 1,536, resulting in a 2.5 percentage points sampling error given a 95 percent confidence level. Ten percent of the completed interviews were validated by call-backs.

The objective of the study was to evaluate residents' responses to the following:

- **Familiarity with Terms for Reused Water** – Identify the term or terms that best position reused water in the public's mind
- **Evaluative Component of Water Terms** -- Rate 18 water terms using a 10-point scale, where 10 conveys an extremely positive image and 1 conveys an extremely negative image
- **Willingness to Drink Reused Water** -- Rate willingness to drink reused water if it was certified safe and pure by each of the sources.
- **Willingness to Use Recycled Water in Five Scenarios** -- Residents were presented with five scenarios for how recycled water could be treated and introduced into public consumption. In each of these scenarios, residents were asked if they would be willing to use recycled water for six uses.

- **Advantages and Disadvantages of Recycled Water** -- The three terms for recycled water that were most acceptable to residents (purified recycled water, certified safe recycled water, highly purified water) were used to examine the advantages and disadvantages of recycled water.
- **Current Water Sources and Attitudes** -- The results of the survey were instrumental in refining key messages for the public outreach efforts of the Groundwater Replenishment Project.

Page 3 of this 2012 Recharge Survey Final Report states the "Overall Recommendation", which is as follows:

> A comprehensive review of the results of this study reveals that the term "purified water" should be used in order to increase the acceptance of reused water for drinking and other uses. Purified water is the most understood term of the reused water terms and it has the most positive image, even higher than the term "drinking water." When using the term "purified water," it should be certified safe by a spokesperson from the National Academy of Sciences, Florida Department of Health, or the Florida Department of Environmental Protection. These institutions were the top three rated sources for the public in terms of credibility and willingness to accept reused water for a variety of uses, including drinking. Finally, when presenting purified (reused) water, the current practice scenario, where all the world's water is already being reused, is the most likely scenario to be accepted by the public for all uses. Positioning purified water in the context that all water is "used" could be implemented in conjunction with or in a tone similar to the Water Reuse Foundation's "Downstream" campaign.

Describing reused water as the following had favorable acceptance in the survey:

> Only three percent of the world's water is drinkable and water has been reused over and over again for millions of years. Water is used by people and animals and then it returns to our rivers, lakes and aquifers, where it is withdrawn, treated and used again.

Communication Plans

As part of the public outreach strategy, both the City of Clearwater and the District developed communication plans (Appendix A) to provide a framework for internal and external communications and marketing efforts. The objective is to promote the benefits of groundwater replenishment; educate stakeholders about the project, address stakeholder concerns by providing correct and accurate information, and dispel any misconceptions. Further, the plans identified the communication tools that will be used, potential communication challenges, internal and external stakeholders, staffing resources, and determined key messages for both City and the District stakeholders. The communication plans are living documents that are to be routinely reviewed and refined as needed.

Communication Challenges

To increase the effectiveness of the outreach efforts, there are several challenges that will need to be addressed.

- Stakeholders' limited knowledge and understanding of aquifer recharge
- Stakeholders' negative perception of potable reuse

- Stakeholders' limited knowledge using reclaimed water for aquifer recharge
- Need for mutual agreement and a coordinated public communication strategy among the entities participating in the cooperatively funded aquifer recharge project.

Communication Strategies

The outreach challenges will be addressed as plan strategies are implemented.

Strategy 1: Develop a project specific website to educate stakeholders about the concept of aquifer recharge and provide both general and project-specific information and resources, speakers' bureau to present to various groups and organizations, and project-specific talking points.

Strategy 2: Introduce the pilot program using existing and new communication tools including news releases, utility bill stuffers, and social media, fact sheets, a list of frequently asked questions and an informational brochure.

Strategy 3: Host an open house/public meeting to educate stakeholders about the project, share the pilot and demonstration results and discuss project benefits to promote the full-scale project.

Stakeholder Identification

A stakeholder is anyone who has an interest in or is impacted by the project. Below is an overview of project stakeholders while a detailed list of specific stakeholders is provided in Appendix B.

Internal	External
• Mayor and City Council	• General public
• City Management team	• Clearwater Utilities customers
• Southwest Florida Water Management District	• Neighboring communities
• Project team	• Industry professionals and educators
• Consultant team	• Key government and elected officials
• Southwest Florida Water Management District Governing Board	• Neighborhood and civic association leaders; advisory groups
• City of Clearwater employees	• Media
	• Special interest groups, e.g., health, environmental, and science experts

Key Messages

The City, District, and project consultant team developed a number of key messages based on the project phase and specific interests and concerns of stakeholders. Key messages will be shared multiple

times through multiple mediums to ensure the messages reach the intended stakeholders. The recommended messages for the City and District are:

City of Clearwater

- All of Clearwater's water – potable and reclaimed – is safe. It meets or exceeds federal and state water standards and regulations.
- This project could help the City of Clearwater ensure the availability of more drinking water in the future.
- This project is cooperatively funded by the Southwest Florida Management District and is under review by the Florida Department of Environmental Protection (FDEP).

The District

- Aquifer recharge is used to improve water levels within the aquifer and provide additional water supplies.
- The District will only recommend implementing this project if it is safe for people and the environment.
- The Southwest Florida Water Management District supports and provides funding for projects that beneficially use reclaimed water in the region to assist in meeting continuing water supply challenges.

Communication Timelines

The communication timeline (Appendix C) provides a list of stakeholder communications and the dates each was issued or undertaken. A variety of communication tools continue to be employed to ensure that key messages and information reach stakeholders in a timely manner. The timeline, which begins with the introduction of the project and continues through the life of the project, details the tool, the timeframe, the party responsible for each and other pertinent details.

Communication Tools

The City of Clearwater's Public Communications Department is responsible for citywide media and community relations, marketing communications, and video/television projection for 21 departments. This department also leads any special community engagement projects and manages the city's printing and mail and courier services.

Because not everyone receives information in the same manner, a variety of tools will be used to ensure that the greatest number of stakeholders is reached. The table below identifies the communication methods that will be used. Appendix D contains examples of communications developed to date for the Groundwater Replenishment Project.

Communication Tools

- News releases
- Website
- Fact sheets
- C-View TV

- *My Clearwater* magazine
- Public meetings
- Flyers and brochures
- Voicemail or telephone hotline number
- Information brochure
- Newsletters
- Presentations
- Social Media
- List of Frequently Asked Questions
- Talking points for elected officials
- Mailers
- Newspaper ads
- Employee specific communications
- *Sunshine Lines* bill stuffer
- Homeowner Association communication
- E-mail blasts
- Workshops
- Tours

Public Outreach Outcome

Below are the efforts that were conducted as part of the public outreach strategy and the results of each effort including where appropriate the number of people reached and/or the number of materials printed and distributed.

Item	Date	Outcome
Implemented the Integrated Water Management Strategy	2007	
Introduction to City Council	2008	Through one-on-one meetings to cover entire Capital Improvement Program, rate study and budgets to support the program
Defined need for aquifer recharge in "City of Clearwater's Comprehensive Plan"	Dec. 18, 2008	Listed under D-14. "Potable Water and Natural Groundwater Aquifer Recharge Needs." http://myclearwater.com/gov/depts/planning_dev/long_range/plans/pdf/comp_plan/Complete_Comprehensive_Plan_single.pdf
"The Ultimate in Recycling: Drinking Water from Wastewater" article in *St. Petersburg Times*	May 24, 2008	http://www.tampabay.com/news/localgovernment/the-ultimate-in-recycling-drinking-water-from-wastewater/523509
Initial team meeting	2009	
Hosted three-hour planning/outreach workshop	July 16, 2010	Internal meeting to discuss branding principles, best practices, outreach that focuses on policy decisions/makers, case study review, Clearwater issues, next steps
Presentation to Clearwater Citizens' Academy 2011	Sept. 2011	20+ residents/community activists who are interested in getting involved in local government. Yearly program
Introductory GWR Concept Campaign -- "Future of Our Water"	Jan. – April 2012	The City of Clearwater is working to improve the future of our water. Plans are currently underway to implement the ongoing construction of the reclaimed water distribution system; the expansion of our existing reverse osmosis water treatment plant; the design and construction of a second reverse osmosis plant; and looking at the feasibility of groundwater replenishment technology. Provided contact for more information.

Item	Date	Outcome
***My Clearwater* magazine -- "Future of Our Water" article**	Jan-April 2012	Mailed to ~7,000 play pass holders; distributed ~8,000 to city facilities (rec centers, libraries, City Hall, etc.)
Presentation to Environmental Advisory Board	Jan 18, 2012	
***Sunshine Lines* utility bill stuffer --"Future of Our Water" article**	Feb. 2012	Distributed to 46,000 Clearwater Utility customers
E-mail blast for Annual Water Quality Report	June 12, 2012	
Campaign promotion for *Water Quality Report*'s availability - includes "Future of Our Water" article	June 12, 2012	Press release; email to list server registrants; web posting (homepage under "News", Utilities page under "Utilities News", and PDF of CCR); Sunshine Lines utility bill stuffer, *My Clearwater* magazine, Facebook post.
Water Quality Report -- "Future of Our Water" article	June 12, 2012	News release; emailed to list server registrants; web posting; Facebook post
Water Quality Report news release	June 2012	
Water Quality Report -- "Future of Our Water" article	June 22, 2012	Distributed to Clearwater Utility customers by mail
Hosted public meeting -- FDEP/City GWR	Aug 14, 2012	FDEP's public meeting for the well permit for GWR. Meeting conducted at Countryside Rec Center.
City website, city projects page -- GWR Project summary	Aug. 15, 2012	www.myclearwater.com/gov/depts/pwa/engin/projects/groundwaterRepl.asp
Webpost – GWR Project Summary to "City Projects"	Aug. 15, 2012	
Presentation to Clearwater Citizens' Academy	Sept. 2012	20+ residents/community activists who are interested in getting involved in local government. Yearly program.

Item	Date	Outcome
Presentation in Orlando – Potable Reuse for Florida: A full-day workshop for elected officials	Mar 22, 2013	
Outreach meeting #1 City/SWFWMD	April 3, 2013	Attendees: City and the District to discuss outreach
Outreach meeting #2 City/SWFWMD	April 16, 2013	Attendees: City and the District to April 29 presentation
City Manager's Viewpoint (newsletter for City staff) -- "Utility & Water Projects" article; one of three subtitles called "Groundwater Replenishment"	May 1, 2013	City Manager's Viewpoint column in internal newsletter. Distributed electronically to the city's 1,600 employees posted in hallway display cases. Also discussed at Public Utilities staff meetings.
Formal presentation to City Council (aired on C-View TV)	May 1, 2013	Available on streaming video at myclearwater.com
Groundbreaking ceremony for City's second RO facility	May 6, 2013	Talking points included the future of our water and groundwater replenishment
C-View TV's public service announcement & Environmental blocks -- Downstream video	May 8, 2013 – ongoing	Airs twice a day. Potential viewership
Facebook post #1 -- GWR overview and downstream video	May 10, 2013	One like, no comments.
Facebook post #2 -- GWR overview and downstream video	May 10, 2013	Repost of original comment. Three likes, no comments.
Publicity – 83 Degrees online newsletter	May 21, 2013	Article is about city's 2nd RO project; last section is on GWR. www.83degreesmedia.com/innovationnews/osmosis052113.aspx

Item	Date	Outcome
Presentation to Florida Water Environment Association Luncheon – Tampa, FL	May 23, 2013	Presentation to approximately 50-60 attendees. Discussed the GWR Pilot Purification System and groundwater recharge field testing.
Water Quality Report -- "Future of Our Water" article	June 2013	Distributed to Clearwater Utility customers by mail
Presentation to Clearwater Civic Academy	June 20, 2013	A group of 25+ Clearwater High School honor students attended the program
Frequently Asked Questions news release	June 2013	
FDEP news release/provided quote/reviewed	June 2013	
Email blast for Annual Water Quality Report	June 13, 2013	
Sunshine Lines utility bill stuffer – "Groundwater Replenishment" article	June 17, 2013	Distribution to 46,000 Clearwater Utility customers. Worked w/ SWFWMD to comment on verbiage.
Campaign promotion for Water Quality Report's availability – includes GWR article	June 19, 2013	Press release; email to list server registrants; web posting (homepage under "News", Utilities page under "Utilities News", and PDF of CCR); Facebook post.
Presentation to Imperial Park Homeowner Association	July 8, 2013	40-60 people attended. Discussed GWR, RCW, and Future of Our Water/Integrated Water Management Strategy
Presentation -- Edgewater Homeowner Association	July 15, 2013	20-30 people attended. Discussed GWR, RCW, and Future of Our Water/Integrated Water Management Strategy.
Presentation at Florida Section American Water Works Association workshop – "Implementation of Alternative Water Supplies"	Aug 28, 2013	40-50 people attended workshop. Discussed the GWR Pilot Purification System and groundwater recharge field testing.

Item	Date	Outcome
My Clearwater magazine article --"Groundwater Replenishment" article	Sept/Dec 2013	Mailed to ~7,000 play pass holders; will distribute ~8,000 to city facilities (rec centers, libraries, City Hall, etc.)
Presentation at American Ground Water Trust's 13th Annual Aquifer Recharge Program in Orlando	Sept 10, 2013	More than 100 people attended the program. Discussed the GWR project and direct recharge to the aquifer using purified reclaimed water.
Presentation to Clearwater Citizens' Academy	Sept 17, 2013	20+ residents/community activists who are interested in getting involved in local government. Yearly program.
Launch of GWR website	Oct. 30, 2013	92 views; 75 unique page views
Tour of Pilot with Florida Water Environment Association Utility Council	Nov 1, 2013	15-20 people attended. Discussed the GWR Pilot Purification System and groundwater recharge field testing.
Presentation to Environmental Advisory Board	Nov 2013	
Tour of Pilot with Florida Department of Environmental Protection (FDEP) SW District Office Compliance Staff	Dec 5, 2013	Three FDEP compliance division employees from the SW FDEP District Office (Tampa) toured the GWR pilot.
Tour of Pilot with FDEP SW District Office Permitting Staff	Jan 23, 2014	Three FDEP permitting division employees from the SW FDEP District Office (Tampa) toured the GWR pilot.
Presentation at Florida Water Resources Conference	April 8, 2014	Presentation on proofing potable reuse with piloting.
Presentation to North Pinellas Utilities Group	April 25, 2014	Presentation of Clearwater's GWR Project to the "Meeting of the Minds" group.
GWR Article in *Water Quality Report*	April/May 2014	Article distributed to Clearwater's utility customers electronically.
Clearwater Public Works Day & GWR Pilot Tour/Open House	May 22, 2014	The City hosted a Utilities' Open House event, including a tour of the GWR Pilot. Twenty-five people toured the plant.

Tour of Pilot with St. Petersburg College students	June 1, 2014	Students are part of the Environmental Science & Technology program at SPC Seminole Campus.
Tour of Pilot with Tampa Bay Water & North Pinellas Utility Leaders	June 2, 2014	Tour with Tampa Bay Water and the cities of Dunedin, Safety Harbor, and Tarpon Springs.
Presentation to SWFWMD's Environmental Advisory Committee	July 15, 2014 (scheduled)	
Presentation at Aquifer Recharge Symposium	July 31, 2014 (scheduled)	
Presentation at WateReuse Symposium	Sept. 8, 2014 (scheduled)	
Presentations to homeowner associations and boards, Florida Section AWWA, WateReuse, other professional organizations	Ongoing	

Public Outreach Results

Activity	Year	Number Each Year	Estimated Reach (Pop.)
Presentations and Workshops	2010	1	25
	2011	1	30
	2012	2	70
	2013	10	220
	2014 (through May)	2	50
Tours	2013	3	45
	2014 (through May)	4	60
Website Views	Oct. 30, 2013 - Jan. 23, 2014	92 views; 75 unique page views	100
	Feb. 1 – May 31, 2014	172 views	200
Articles, News Releases, Publications, and Email Blasts	2008	1	10,000
	2012	7	10,000
	2013	10	46,000
	2014 (through May)	5	46,000
Website, Television and Social Media	2008	1	100
	2012	2	250
	2013	8	1,000
	2014 (through May)	4	500

This project reached an estimated 48,000 people through presentations, workshops, tours, articles and social media.

Recommendations for the Next Phase

The next phase of the Groundwater Replenishment Project is scheduled to begin in fiscal year 2015. Based on the actions that have been taken to date, recommendations for the next phase include:

- Conduct a survey to measure the effectiveness of efforts that have occurred to date. In order to determine what additional efforts should be implemented, e.g. more articles, additional presentations, increased new releases, it is important to understand how effective past efforts have been. A survey could be conducted on the website – advertised in the utility bill stuffer— to determine what stakeholders know and/or have learned about groundwater replenishment and the pilot.
- Establish a Citizen Advisory Group to assist in increasing the effectiveness of the pilot. This would be a volunteer group that would provide input on how to reach more stakeholders. It also serves to increase support of the project.
- Continue to measure the number of visits to website – tracking the number of visits to the website will help determine if stakeholders are using the site. Create a page for children to introduce the concepts of groundwater replenishment and reclaimed water.
- Develop a virtual tour of the pilot that can be shared via the website to enhance understanding and make the pilot real.
- Plan a media day with local media to introduce the project and encourage articles. Engage a local environmental reporter to develop an extended article on the pilot and the benefit of the project. Invite the pilot equipment manufacturers to attend and bring hands-on displays of their equipment.
- Plan an in-schools program to introduce the concept to Clearwater students to include an essay contest for each education level – elementary, middle and high school. This educates at an early level and enhances understanding and acceptance.
- Introduce the concept to science teachers of appropriate grade levels to include in lessons plans.

APPENDIX A

Communication Plans

City of Clearwater

Southwest Florida Water Management District

TETRA TECH

Taylor Biggette Brashears & Graham, Inc.

COMMUNICATIONS PLAN

Groundwater Replenishment Project

City of Clearwater

Purpose

The purpose of this plan is to provide a framework for internal and external communications and marketing efforts for the City of Clearwater's Groundwater Replenishment project. The goal is to promote the overall acceptance of aquifer recharge using purified water in Clearwater. This plan establishes a way to engage Clearwater citizens and stakeholders to become informed partners and proponents for this groundwater replenishment project.

Scope

This plan includes five methods of communication using existing public information tools: Public Interaction, Print, Web, Social Media, and Television. Each of these methods has different requirements and challenges during conception, production, and distribution. Messages that the city and its cooperative funder, the Southwest Florida Water Management Direct (or SWFWMD), send will help guide us in determining which method should be selected to help best accomplish our goal.

City Department Functions

Three City of Clearwater departments will be actively involved in this project:

The **Public Utilities** department is dedicated to providing high quality water, wastewater, and reclaimed water services while protecting the public health and natural environment of our community through cost effective management, operation and maintenance of our infrastructure sustaining these essential services.

The **Engineering** department is responsible for project management for various elements of the city's Capital Improvement Program. This includes stormwater, environmental, engineering design, contract award, and construction management. The department also is responsible for traffic planning, design, and operations and the administration of the city's Parking System.

The **Public Communications** Department is responsible for citywide media and community relations, marketing communications, and video/television production for 21 departments. The department also leads any special community engagement projects and manages the city’s printing and mail services.

Project Overview

A study is underway that could help the City of Clearwater ensure the availability of more drinking water in the future. Beneath the city, the fresh water from the Upper Floridan aquifer used for drinking water sits on top of a layer of brackish, or somewhat salty, water. The fresh water resource can be protected by balancing the recharge of the aquifer level and water withdrawals, protecting the fresh water from becoming salty.

This study will measure the potential to improve groundwater levels within the city so more drinking water will be available. The study will determine how much the groundwater level can be improved by

directly adding up to three million gallons a day of purified reclaimed water into a brackish water zone below the freshwater zone of the Upper Floridan aquifer. A 2011 feasibility study concluded this groundwater replenishment project to be safe and economical.

The ongoing pilot and demonstration phase of the study is two-fold: 1) underground hydrologic testing and analysis, including a six-month recharge test using groundwater extracted from a freshwater zone of the Upper Floridan aquifer , and 2) a one-year operation of a small-scale purification plant to evaluate the process and water treatment options. The study is cooperatively funded by SWFWMD.

Background

- The City of Clearwater has a long history of producing potable drinking water utilizing water from the Floridan Aquifer. Initially, wellfields were installed back in the 1920s.
- Decades of knowledge garnered from these water production efforts provide the City with an understanding of the local conditions that helps enable us to manage the resource in a responsible manner.
- With given improvements in technology, the groundwater replenishment process is a natural progression of the efforts the City of Clearwater has undertaken to properly conserve, protect and utilize available environmental resources.
- The public outreach efforts have been and will continue to be an integral part of the service we provide to our customers, the residents of the City of Clearwater.

Contract Specifications: Public Information

The City, in coordination with its public relations consultant and the Project Consultants, will develop an overall strategy for conducting public outreach throughout the work of this Project and continuing forward. After its development, the strategy will be provided to SWFWMD for review and comment. At a minimum, the public outreach program will include the following:

- Identification of the primary stakeholders potentially affected by the Project and community organizations that could be used to communicate information about the Project. An initial communication of the nature and status of the Project, along with a source to obtain additional information about the Project would be provided to each.

- Development of an informational brochure about the Project.

- Development of an expanded discussion of the Project on the City's website, including updates on the status and findings of the testing program as it progresses.

- Presentations to community organizations to educate the public about the need, purpose, and objectives of the Project as well as the activities being conducted under the testing phase and the information to be gained.

- Tours of the Pilot Purification System. A schematic of the pilot system will be prepared and set up at the Northeast Water Reclamation Facility (NEWRF) so that the public can view the details of the treatment process. Tours of the pilot system will be conducted during regularly scheduled visits to the site, as requested and as operational requirements of the pilot system permit.

- Upon completion of the above tasks, the City will submit a Public Outreach Summary Report describing all public information methodologies and outcomes, as well as recommendations for the next phase of work. The City will also provide any printed materials, handouts, or flyers designed during these tasks.

Communication Challenges

- The public's potentially limited knowledge and understanding about aquifer recharge
- The public's potentially negative perception of potable reuse
- The public's potentially limited knowledge of the use of reclaimed water for aquifer recharge
- The need for mutual agreement and a coordinated public communication strategy among those participating in the cooperatively funded aquifer recharge project

Audiences

Internal Stakeholders:

- Mayor and City Council
- City Management Team
- Project Team
- Consultant team
- SWFWMD staff
- SWFWMD Governing Board
- Internal employees

External Stakeholders:

- General public
- Clearwater Utilities Customers
- Neighboring Communities
- Industry professionals and educators
- Key government and elected officials
- Media
- Neighborhood and civic association leaders
- Special interest groups such as health, environmental, and science experts

Staffing Resources

Skill Set	Member	Department	Contact Information	Comments
CITY OF CLEARWATER				
Utilities Director	Tracy Mercer	Utilities	727-562-4960 Ext. 7222	
Utilities Assistant Director	Nan Bennett	Utilities	727-562-4960 Ext. 7221	
Project Manager/Engineering Mgr	Rob Fahey	Engineering	727-562-4608	
Professional Engineer	Lan-Anh Nguyen	Engineering	727-562-4581	

Water, Reclaimed & Wastewater Collection Manager	Glenn Daniel	Utilities	727-562-4960 Ext. 7249	
Water Environmental Technologies Manager	David Porter	Utilities	727-562-4960 Ext. 7248	
Water Treatment Plant Chief Operator	Fred Hemerick	Utilities	462-6326	
Utilities Coordinator	Kathryn McGrath	Utilities	727-562-4960 Ext. 7224	
Public Communications Director	Joelle Castelli	Public Communications	727-562-4881	
Public Information Specialist	Heather Parsons	Public Communications	727-562-4708	
SWFWMD				
Project Manager	Robert Peterson, P.G.	Water Resources Bureau, Brooksville Service Office	352-796-7211 Ext. 4253	PM for N179,N286,N521
Water Resources Bureau Chief	Ken Herd, P.E.	Water Resources Bureau, Brooksville Service Office	352-796-7211 Ext. 4226	
Hydrologic Evaluation Program Manager	Jerry Mallams, P.G.	Water Resources Bureau, Brooksville Service Office	352-796-7211 Ext. 4561	
Hydrologeologist	Don Ellison, P.G.	Water Resources Bureau, Brooksville Service Office	352-796-7211 Ext. 4292	
Senior Water Conservation Analyst	Anthony Andrade	Water Resources Bureau, Brooksville Service Office	352-796-7211 Ext. 4196	
Water Use Permit Bureau Chief	Darrin Herbst, P.G.	Regulation Division, Tampa Service Office	813-985-7481	
Regulation	Joe Oros, P.G.	Regulation Division, Tampa Service Office	352-796-7211 Ext. 6109	
Regulation	Judy Richtar, P.G.	Regulation Division, Tampa Service Office	352-796-7211 Ext. 6102	
Public Affairs	Estella Gray	Public Affairs, Brooksville Service Office	813-985-7481 Ext. 2015	
Evaluation Vendor	Phillip Downs, Ph.D.	Kerr & Downs	800- 564-3182	
Communications	Mary Margaret Hull	Public Affairs, Brooksville Service Office	352-796-7211 Ext. 4774	

ENGINEERING CONSULTANT – TETRA TECH				
Engineering Consultant	Emilie Moore, P.E.	Tetra Tech	727-709-1705	
Engineering Consultant	Jarrett Kinslow, P.E.	Tetra Tech	407-839-3955	
Engineering Consultant	Dave MacNevin, PhD, P.E.	Tetra Tech	786-507-3898	
Engineering Consultant	James Christopher, P.E.	Tetra Tech	407-839-3955	
Engineering Consultant	Jennifer Roque, E.I.	Tetra Tech	407-839-3955	
HYDROGEOLOGY CONSULTANT - LEGGETTE, BRASHEARS & GRAHAM				
Hydrogeologic Consultant	David Wiley, P.G.	Leggette, Brashears and Graham	813-968-5882	
Hydrogeologic Consultant	Jeff Trommer, P.G.	Leggette, Brashears and Graham	813-968-5882	
EXTERNAL PR FIRM				
External PR firm	John Ruetten	Resource Trends	760-741-5196	Project N179

Potential Key Messages

Key messages will be developed by the City of Clearwater, SWFWMD, project consultant team, and others. Messages may vary depending on project phase and target audience.

City of Clearwater's Messages:

- All of Clearwater's water - potable and reclaimed - is safe. It meets or surpasses federal and state water standards and regulations.
- All the water we have on Earth has been used over and over again since the time of the dinosaurs.
- We have the technology and expertise to reliably and consistently purify water to meet or surpass drinking water standards.
- This project could help the City of Clearwater ensure the availability of more drinking water in the future.
- This project is currently in the pilot and demonstration phase. A small-scale operational pilot plant was constructed and operated for one year. The pilot was successful and responsible and the city is proceeding with a full-scale project.
- The City of Clearwater will move forward with implementing this project only if it is safe for the community and the environment.
- This project is cooperatively funded by SWFWMD and is under review by the Florida Department of Environmental Protection.

SWFWMD's Messages:

- Aquifer recharge is used to improve water levels within the aquifer and provide additional water supplies.

- SWFWMD will only recommend implementing this project if it is safe for people and the environment.
- Aquifer recharge using reclaimed water is being safely used throughout the country and the world.
- Today's technologies have the capability to purify reclaimed water to safely replenish the aquifer.
- SWFWMD supports and provides funding for projects that beneficially use reclaimed water in the region to assist in meeting continuing water supply challenges.

Objective

The city's objective is to promote the benefits of groundwater replenishment, and to address the concerns of primary stakeholders by providing them with correct and accurate information.

Methods

The City of Clearwater has been and will continue to introduce the concept of aquifer recharge and groundwater replenishment to its residents during the pilot and demonstration phase of the project. As the pilot plant operates and generates data, the city is continually updating the information about the project.

In the months after the pilot's startup (which was June 3, 2013), data will be analyzed, and the city will have concrete information to present to the public to show the project's viability and importance. When the city has results from the pilot testing program and a decision to proceed to construction of a full-scale facility has been approved, a full-fledged campaign will be rolled out. The larger campaign will include complete project promotion. Intermediate efforts will focus around an open house event with site tours of the pilot plant.

At some point, a public relations firm will be brought on board to take the lead on a branding and information campaign to encourage the acceptance of the groundwater replenishment concept and this project. The city will support this endeavor by distributing materials that the firm develops and incorporating their deliverables into city messages, communications, and engagements with Clearwater's residents and business owners.

Existing communication tools used by the city's Public Communications Department include:

- Press releases to media
- Website
- Publications
    - *MyClearwater* magazine (three issues per year)
    - *Sunshine Lines* utility bill stuffer – monthly
    - Downtown newsletter, "Cleveland Street District Update"
    - Neighborhood Newsletter, "Clearwater Neighbors"
- Public meeting and tours
- Flyers and brochures
- Fact sheets - an FAQ sheet will be formatted into a trifold brochure for distribution
- Speaking Circuit to neighborhood and civic groups
- C-mail – email to list server registrants
- Facebook

- Video Bulletin Board slides that air on C-View TV
- Talking points to Councilmembers
- Mailers (postcards, letters, etc.)
- Newspaper ads
- Voicemail box or telephone hotline number
- Internal communications:
    - *Connection*, employee newsletter - six issues per year
    - *Viewpoint*, City Manager's newsletter - 12 issues per year

Other project team members will continue to communicate the ongoing project status and results to the regulatory agencies, professional community, and policy makers including support groups such as the City of Clearwater Environmental Advisory Board. The city also will incorporate any tools or templates provided by SWFWMD to keep messages consistent and uniform.

Strategies

Strategy 1: Educate key stakeholders about the concept of aquifer recharge.

***Tactic A*:** Develop a website with aquifer recharge general and project-specific information, resources, links, videos, etc.

***Tactic B*:** Launch a speaking circuit to present the concept and project to homeowners associations, civic groups, City Council, Citizen's Academy group, Environmental Advisory Board, Chamber groups, etc.

***Tactic C*:** Use telephone survey results and talking points developed by SWFWMD to discuss the aquifer recharge project.

Strategy 2: Introduce Pilot Program

***Tactic A*:** Continue to evolve messages and communications that the city is in the pilot and demonstration phase of an aquifer recharge project.

***Tactic B*:** Develop and distribute media materials from city's existing communication tools that the City of Clearwater is working to improve the future of our water. Tools include press releases, utility bill stuffer, magazine, list serve, website, social media, etc.

***Tactic C*:** Create a fact sheet and/or list of frequently asked questions.

***Tactic D*:** Develop an informational brochure about the project using fact sheet details. The brochure will be a trifold handout that can be distributed by mail, posted to the web, placed in city facilities, and/or at public meetings.

Strategy 3: Launch Promotion of Full-Scale Project

***Tactic A*:** Host an Open House/Public Meeting. The city would invite the general public, stakeholders, etc. to learn about the project, see pilot and demonstration results, tour the plant, etc.

***Tactic B*:** Develop and distribute media materials from city's existing communication tools that the City of Clearwater will proceed forward with the aquifer recharge project. Tools include press releases, utility bill stuffer, magazine, list serve, website, social media, etc.

***Tactic C*:** Engage with the media to discuss project benefits. Develop a media kit that includes benefits, drawings, fact sheet, web content, etc.

Schedule

Following is a list of project milestones associated with this groundwater replenishment project:

- Initial team meetings 2009
- Project meetings began 2009
- Pilot plant is operational June 3, 2013
- Results are being collected and analyzed 2013 to 2014
- Draft of Public Outreach Report is due Dec. 31, 2013
- Final version of Public Outreach Report is due Feb. 28, 2014
- Open House Event & Tours May 22, 2014
- Completion of Informational Brochure July 31, 2014

An inclusive timeline of project activities is available as a separate document to this communication plan. It is separate because it will serve as a record for project activity, will be updated regularly, and will serve as a record of communication activities.

Costs

There are no costs anticipated for the city's communication support functions, to include staffing of a Public Communications Director, Public Information Specialist, and design services, which are all in-house functions of the City of Clearwater's Public Communications department. Costs of securing the public relations firm are separate of this communication plan.

Costs associated with this project include the following budgetary costs:

- $40,000 Development of treatment system schematic
  Public Outreach Summary Report
- $40,000 Production of 2-minute and 5-minute videos of pilot system
- $ 5,000 Printing of 4-color brochure
- $12,000 Random phone survey (benchmark public perception)
- $ 2,000 Public Open House direct mail invitation

There will be costs associated with printing services, such as for a brochure which will include a list of frequently asked questions. Printing costs for the brochure are not known at this time and will depend on printing preferences (color vs. black and white), quantity, and materials used.

Re-Evaluation

The City of Clearwater understands this plan is a living document. Our successes will lead to solutions of some challenges and the creation of new ones. When these new challenges arise, we must take another look at our communications and marketing efforts and fine-tune our approach.

Southwest Florida Water Management District Aquifer Recharge Communications Plan

Situation

The Southwest Florida Water Management District is currently providing cooperative funding support for several direct and indirect reclaimed water aquifer recharge projects within its 16-county jurisdiction. The cooperators include Hillsborough, Pasco and Polk counties as well as the cities of Clearwater and Winter Haven. Stakeholders within the District may not know what reclaimed water aquifer recharge is and may not be supportive of these projects.

Background

In 2008, the District started collaborating with utilities in the Tampa Bay area to develop alternative water supply options to help meet the needs of the region by maximizing the beneficial use of excess reclaimed water flows. One of the options discussed was aquifer recharge because it is being used successfully throughout the country and the world. Therefore, it was decided to explore aquifer recharge using reclaimed water to see if it could be implemented within the District.

The District conducted a study in 2009 to determine if aquifer recharge using reclaimed water would be feasible as part of an ongoing effort to increase the beneficial use of reclaimed water in the region. Some of the potential benefits of future aquifer recharge projects may include improving water levels and creating opportunities for new groundwater supplies. In addition, projects along the coast might also help slow saltwater intrusion and improve water quality in brackish groundwater areas.

The results of the study showed that it appears feasible to develop direct and indirect reclaimed water aquifer recharge projects in the region to improve water levels and provide opportunities for additional groundwater withdrawals. However, the study also determined that site specific testing would be necessary. Therefore, local governments were encouraged to begin submitting cooperative funding requests to perform site specific studies in their areas. These studies will provide a better understanding of the costs associated with the projects and Florida Department of Environmental Protection permitting requirements, as well as the projected improvements in water levels, natural systems and water supplies.

As of fiscal year 2014, the District has received cooperative funding requests for five reclaimed water aquifer recharge projects. Each project is unique with its own set of goals and objectives, including water supply development, natural systems enhancement, natural systems restoration and flood protection. As of fiscal year 2014, two of the projects have been completed and no future funding requests have been made from Polk County and the city of Winter Haven. The projects are outlined below.

Indirect Projects

- Pasco County's Reclaimed Water for Natural System Treatment & Restoration Project (H092), project manager – Michael Hancock (Ongoing project)
    - The goal is restoration of water levels that have been decreased by groundwater withdrawals. The study will determine the water level improvements from indirectly recharging up to 20 million gallons per day (mgd) of highly treated reclaimed water through rapid infiltration basins (RIBs) and/or the creation of wetlands within the Northern Tampa Bay Recovery area (eastern Pasco County).
- Polk County's Groundwater Recharge Investigation (N304), project manager – Ron Basso (Completed project)
    - The feasibility and pilot study was conducted to examine the benefits of indirectly recharging reclaimed water to the Upper Florida aquifer via RIBs to quantify how much additional groundwater could be available for future potable supply. The results indicated that the County could withdraw anywhere from 75 to 90 percent of water recharged without environmental impact or significant change to water levels in the Floridan aquifer system.
- City of Winter Haven's Desktop Study – Use of Reclaimed Water to Recharge the Floridan Aquifer (N286), project manager – Robert Peterson (Completed project)
    - The goal of this study was to determine the appropriate locations for indirect aquifer recharge of highly treated reclaimed water through RIBs located within the City, with the objective of improving aquifer levels, natural resources and potentially providing additional water supply. The deliverables for this project were Technical Memoranda which document the process of short listing five (5) sites favorable for reclaimed water aquifer recharge, focusing on desktop technical feasibility and financial analysis.

Direct Projects

- Southern Hillsborough Aquifer Recharge Project (SHARP) (N287), project manager – Mark Barcelo (Ongoing project)
    - The goal is to beneficially use reclaimed water, improve water levels in the Most Impacted Area of the Southern Water Use Caution Area, and assess possible additional water supplies. The study will determine the water level improvements from directly recharging up to 2 mgd of highly treated reclaimed water into the non-potable zone of the Upper Floridan Aquifer (UFA) within the coastal region of southern Hillsborough County. If the project proves feasible, it is anticipated that the County will expand the aquifer recharge system, depending on available water flows.

- City of Clearwater's Aquifer Recharge with Reclaimed Water Project (N179), project manager – Robert Peterson (Ongoing project)
    - The goal is to improve water levels within the City of Clearwater and evaluate the potential for additional withdrawals from its existing wellfields. The study will determine the water level improvements from directly recharging up to 1 mgd of highly purified reclaimed water into a brackish water zone of the UFA. This project is different than the others because the reclaimed water is pre-treated and purified prior to injection. If the project proves feasible, it is anticipated that the City will expand the system to recharge up to 3 mgd.

If feasible, these projects could provide up to 39 mgd for aquifer recharge purposes. It is yet to be determined how much water level improvement or additional water supplies could be provided from these projects.

Communication Challenges

- The public's lack of knowledge and understanding about direct and indirect recharge
- The public's negative perception of reclaimed water used for some types of aquifer recharge and drinking water source replacement
- The public's lack of knowledge of the use of reclaimed water for indirect and direct recharge
- The need for mutual agreement and a coordinated public communications strategy among the cooperators who are participating in the cooperatively funded aquifer recharge projects

Goal

- To increase public support of aquifer recharge using reclaimed water.

Audiences

Internal Stakeholders:

- Executive staff
- District employees
- Governing Board members

External Stakeholders:

- Primary group
    - District's advisory committee members
    - Cooperative funding partners in Hillsborough, Pasco, Pinellas and Polk counties
    - Water utility customers in Hillsborough, Pasco, Pinellas and Polk counties
    - Home owners associations in Hillsborough, Pasco, Pinellas and Polk counties

  - Special interest groups such as health, environmental, engineering and science experts
  - Key local government and elected officials
  - Editorial boards covering Hillsborough, Pasco, Pinellas and Polk counties
- Secondary group
  - Consultants working on the recharge projects
  - Florida Department of Environmental Protection
  - St. Johns and South Florida water management districts

Objective

Increase by 15 percent the number of people who are willing to add reclaimed water to existing water supplies in the District's Tampa Bay and Heartland regions by September 30, 2016, and secure the support of identified key stakeholders.

Key Messages

- The projects are environmentally safe, provide benefits to the environment, and help meet water needs.
- The Southwest Florida Water Management District provides support and funding for local government projects to beneficially use reclaimed water to help meet the region's water needs.
- Aquifer recharge is used to improve water levels within the aquifer and provide additional water supplies.
- Today's technologies have the capability to purify reclaimed water to safely replenish the aquifer.
- Aquifer recharge using reclaimed water is being safely used throughout the country and the world.
- The District will only recommend implementing reclaimed water aquifer recharge projects if they are safe for people and the environment.

Strategies

Strategy 1: Gain insight into the knowledge and attitudes of primary external stakeholders regarding aquifer recharge and reclaimed water.

Tactic A: Develop and implement a telephone survey to take place in Polk County, the City of Winter Haven, Pasco County, Hillsborough County and the City of Clearwater.

Tactic B: Evaluate the survey results and develop key messages for communications tools.

Tactic C: Provide an electronic copy of the survey results to the cooperative funding partners involved with aquifer recharge projects.

Strategy 2: Demonstrate that adding reclaimed water to existing water supplies is beneficial for the community and the environment.

Tactic A: Develop a District webpage that shows the differences and benefits of direct and indirect recharge projects.

Tactic B: Develop a fact sheet, frequently asked questions and a PowerPoint presentation for use on the webpage and speaking engagements.

Tactic C: Develop a short video about the benefits of recharging the aquifer with reclaimed water and post on the District's webpage.

Tactic D: Promote the District's webpage and video with social and industry-related media.

Tactic E: Conduct speaking engagements in cooperation with the cooperators in the specific Hillsborough, Pasco and Pinellas communities.

Strategy 3: Enlist support of special interest groups, local governments and elected officials as well as editorial boards for the projects.

Tactic A: Identify and develop a master list of key stakeholders.

Tactic B: Work with cooperators to review, approve and distribute project-specific outreach materials.

Tactic C: Work with the District's government affairs program managers to provide outreach tools to key stakeholders and offer to provide presentations.

Tactic D: Schedule and conduct one-on-one briefings, meetings and presentations with key parties.

Tactic E: Encourage cooperators to develop a short video about the benefits of recharging the aquifer with reclaimed water.

Materials

- Public perception telephone survey & report (focused on aquifer recharge and reclaimed water topic areas; results provided to cooperators to guide development of communications tools)
- Websites (District and cooperator webpages)
- Frequently Asked Questions (FAQ)
- Fact Sheet
- Stakeholder spreadsheets for Hillsborough, Pasco, Pinellas and Polk counties
- PowerPoint presentation with talking points

- Brochure (Cooperators)
- Video (District and cooperators)

Staffing Resources

Title/Function	Member	Bureau or Cooperator	Contact Information	Comments
Lead Project Manager	Robert Peterson, P.G.	WRB-BKV	Ext. 4253	PM for N179, N286
Water Resources Bureau Chief	Ken Herd, P.E.	WRB-BKV	Ext. 4226	
Hydrologic Evaluation Manager	Jerry Mallams, P.G.	WRB-BKV	Ext. 4561	
Reuse Coordinator	Anthony Andrade	WRB-BKV	Ext. 4196	Task manager for H092, N179, N287, N304
Project Manager	Mark Barcelo, P.E.	WRB-BKV	Ext. 4242	PM for N287
Project Manager	Michael Hancock, P.E.	PRJ-BKV	Ext. 4255	PM for H092
Project Manager	Ron Basso, P.G.	WRB-BKV	Ext. 4291	PM for N304
Senior Hydrogeologist	Don Ellison, P.G.	WRB-BKV	Ext. 4292	Task manager for N179
Water Use Permit Bureau Chief	Darrin Herbst, P.G.	REG-TPA	Ext. 2014	
Regulation	Joe Oros, P.G.	REG-TPA	Ext. 6109	
Regulation	Judy Richtar, P.G.	REG-TPA	Ext. 6102	
Communications	Mary Margaret Hull	COM-BKV	Ext. 4774	
External Affairs	Danny Kushmer	PAB-BSO	Ext. 6000	
External Affairs	Estella Gray	PAB-TSO	Ext. 2015	
Evaluation Vendor	Kerr & Downs	N/A	800.564.3182	
Communications Manager	Robyn Felix	COM-BKV	Ext. 4770	
External Project Manager	Bart Weiss	Hillsborough Co.	813.272.5977, ext. 43330	N287
External Project Manager	Jeff Harris & Pam Wright	Pasco Co.	727.847.8145	H092
External Project Manager	Krystal Azzarella	Polk Co.	863.298.4195	N304
External Project Manager	Rob Fahey	City of Clearwater	727.562.4960	N179
External Project Manager	Kim Hansel	Winter Haven	863.291.5853	N286
External PR firm	Emilie Moore	Tetra Tech, sub to city of Clearwater	727.709.1705	N179
External PR firm	Honey Rand	Env. PR Group, sub to Hillsborough Co.	813.948.6400	N287

Timeline

Communication Timeline/Milestones	Date Started	Date Completed	Team Member Responsible	Comments
Initial team meeting	06/06/2011	06/06/2011	Darcy Brune	Done
Develop communications plan	08/04/2011	02/12/2012	Darcy Brune	Done
Complete phone survey	Winter 2012	12/31/2012	Darcy Brune	Done
Revise draft communications plan	Feb./Mar. 2014		MM Hull	
Identify key stakeholders	Spring 2014		Internal project team members	
Develop communications tools	Spring/Summer/Fall 2014		MM Hull with District PMs	
Implement communications	Summer/Fall 2014 & Ongoing		Government affairs program managers with District PMs	
Communication plan evaluation	2016		MM Hull	

Evaluation of Success of Plan

Evaluate the success of the communication plan's objective by comparing the District's 2013 perceptions of reclaimed water to the 2016 survey results, and identifying how many key stakeholders actively support the projects.

Budget

Total cost for the 2012 formal telephone survey conducted by the District's research consultant was $42,570. Additional costs will be in-house, including staff time and printing costs.

CITY OF Clearwater

Messaging and Public Outreach Plan

TETRA TECH

April 2011

Situational Analysis

The City of Clearwater is committed to ensuring that a sufficient volume and quality of water is available and affordable to meet the daily needs of the Clearwater community. In addition, the City developed an Integrated Water Management Strategy that focuses on water conservation, development and expansion of local water supplies, and providing reclaimed water for irrigation and other non-potable uses. The City recognizes that in order to address and meet these needs, new capital projects will be required. Through stakeholder engagement, the following message points have been developed to guide future public involvement activities.

Messaging & Public Outreach - Defining Strategies

Messaging

In order to gain public support and advocacy, clarifying and maintaining a strong focus is critical. Specifically, the City must establish a clear, consistent message about its organization and services. The following concise concepts should provide the foundation for and be woven into public outreach efforts. Once these messages are accepted and understood, stakeholders will be more open to helping develop solutions and supporting new project concepts.

General

The City of Clearwater Utility Department is committed to ensuring that a sufficient, high quality and affordable water supply is available to meet the daily needs of the Clearwater community and to maintaining a dependable water treatment and delivery service to Clearwater users.

The City's customers use approximately 12 million gallons of potable water daily. Approximately 40 percent of Clearwater's drinking water comes from a groundwater source called the Floridan Aquifer. This aquifer is one of the primary sources of ground water in the southeastern United States. It underlies all of Florida, southern Georgia, and some parts of Alabama and South Carolina. The remaining daily demand is supplied by water purchased from Pinellas County Utilities, consisting of Tampa Bay Water's groundwater, surface water and desalination sources.

Through foresight and planning, efficiency in operations, and focus on excellence in customer service, the City is committed to working with our partners and residents to meet our water resource challenges and to provide affordable, high quality drinking water.

Self-Reliance

Approximately 40 percent of Clearwater's demand (more than 4 million gallons daily) is pumped from our groundwater wells. The remaining volume is purchased from the Pinellas County Water System (PCWS).

The City forecasts that potable water prices will double over the next decade. In order to slow the rate of the increase costs, the City is planning to add new groundwater wells and rehabilitate offline wells. These new wells will increase production to 55 percent of total consumption and significantly reduce our reliance on outside water providers like Pinellas County.

Once the new wells are complete, residents will save approximately $1 per 1,000 gallons of water, or about $6 per home every month.

Reliability (safety)

Safe Drinking Water: Our residents' safety is our primary concern and the City is committed to using the most advanced, state-of-the-art, treatment processes in our drinking water and wastewater plants. Our operations and maintenance programs are designed to minimize potential risks and ensure plant security and equipment are operating at peak efficiency.

Wellfield Management: The City manages the wellfield by pumping groundwater from wells on a rotational basis. This activity allows the City to withdraw the best quality groundwater at managed withdrawal volumes so that water treatment costs are controlled and the pumping of the aquifer has minimal impact on ground surface features.

Sustainability (protection of resources)

Despite Clearwater's progressive management of water and wastewater, including conservation efforts, our water supply demands and wastewater disposal system are not yet sustainable. Most of our drinking water is purchased from Pinellas County, portions of our community use potable water for landscape irrigation, and a portion of our treated wastewater is discharged into Tampa Bay. However, we constantly evaluate other options for managing our drinking, reclaimed and wastewater resources. Our goals are to have a locally controlled water supply and sustainable methods for managing wastewater while expanding conservation and reuse to protect our water and other natural resources. The City's approach to water resource management is a sustainable, semi-closed-loop system. Historic water resource management activities have included installing drinking water wells and implementing reuse in over half of our community, both leaning toward ensuring a locally controlled water supply. Even with these advances, however, our water resource management activities are not sustainable. By examining our options for water supply development, wastewater management, and expanding conservation efforts, we can be better stewards of this precious resource.

Public Outreach

Public outreach is a tool used by non-profit organizations, government entities, and other groups for the purpose of engaging, informing and involving the public. Outreach efforts are designed to reach specific target audiences in order to educate the public and communicate the organization's mission, goals, products, services, activities and other key issues of importance to the organization.

While outreach efforts should include a strong educational component, the most effective approach is to design a strategy that provides for an authentic flow of communication back and forth between the organization and the public. In this way, genuine public engagement occurs and authentic relationships are created that are mutually beneficial for the organization and the public it serves. In addition, outreach strategies must be aligned with the organization's mission, and define targets, goals, and milestones.

A successful branding campaign coupled with an effective outreach and education effort requires a comprehensive and strategic approach.

Suggested Future Activities

I. Complete branding effort

For many organizations, the development of a logo is a key component of any branding process. For the City's Utility Department, however, we felt it was important to maintain some continuity with the established city brand. As a result, we have proposed several minor modifications to the existing City logo, including adding tag lines that can be project or issue specific (attached).

In addition, the key message points that focus on self-reliance, reliability and safety and sustainability should be refined and adopted by staff so that they become part of the organization and energize the team around the public outreach component of the overall plan.

II. Identify and Cultivate Key Partners

Identify appropriate partners within the areas of government, business and economic groups, civic clubs, environmental organizations and others stakeholders. Through early stakeholder meetings, it became evident that there are organizations in the Clearwater community, including the Clearwater Chamber of Commerce, Tampa Bay Builders Association, and the Tampa Bay Estuary Program, that have a strong interest in the City's activities. To date, however, these organizations have had little interaction with the Utility. It is essential that a plan is developed to educate and inform these groups as to the overall water strategy of the City. Each of these groups agreed to allow the City to make presentations, submit educational articles for their newsletters, and provide web-based information.

The City's first initiative should focus on developing a presentation and white paper that provides a basic utility overview that follows the agreed upon message points and described the challenges facing the City. Presentations should be coordinated with the Clearwater Chamber of Commerce, Tampa Bay Builders Association, the local golf course clubs, Kiwanis Club and the key local Homeowners Associations (HOAs). Follow up from the presentations should be conducted through publishing the white paper in their newsletter and/or on their website.

Once this basic information is shared and understood, a more detailed process can be developed for specific capital projects.

III. Website Design and Development

The Utility should work closely with the Public Communications office to create a detailed utility-specific portion of the website designed to educate and inform the visitor on the overall water strategy - focusing on self-reliance, reliability/safety and sustainability. The site should be a valuable resource for the visitor in understanding the history, identifying the need and framing the solution, as well as providing educational materials, links to partners and other useful information.

IV. Collateral Materials Development

The Utility should work with the Public Communications office to review and assess existing collateral materials around the City's water strategy in both print and electronic format, including PowerPoint presentations. It is important to make any needed improvements to these materials and identify any gaps that require the development of additional collateral. There may also be a need for the development of promotional items, educational giveaways, exhibits and outreach displays/booths. The materials would also serve to drive traffic to the project website for further education of the general public.

V. Media Relations

The Utility should work with the Public Communications office to ensure there is a concerted effort to strengthen relationships with local media and be able to provide more in depth information to help guide news articles on critical projects. This can be done through:

- Engagement or re-engagement of media through the editorial board of the local newspapers as well as the environmental, health and business reporters
- Generate a *consistent and timely* flow of information to the media through press release distribution that includes newsworthy information from a local, state, and national perspective as well as to general media outlets and specialty/trade publications
- Pitch feature stories to media as appropriate; plan field trips to facilities to highlight proposed project improvements
- Guest columns and letters to the editor as appropriate
- Radio and local TV appearances including local government access channels

VI. Advertising

The Utility should review and assess existing advertising endeavors through all mediums including print, radio, television and electronic, both internally and externally. Develop a strategic advertising campaign to broaden awareness using internal governmental resources as well as external opportunities. Advertising efforts would also serve to drive traffic to the project website for further education of the general public.

VII. Speaker's Bureau

Identify and develop candidates to participate in a speaker's bureau. Speakers would give presentations to local civic groups, schools, homeowners association and other clubs and organizations for the purpose of education, outreach and stakeholder development. Speakers

would utilize approved PowerPoint and collateral materials, drive traffic to the website, and collect emails from supporters to grow the stakeholder list and strengthen advocacy efforts.

VIII. E-Mail Marketing

E-mail marketing is a cost-efficient and effective way to deliver your message to stakeholders. The creation of a professional e-mail marketing campaign with the goal of enhancing your relationship with local residents, business and civic groups, strategic partners and other stakeholders will add value to the branding and outreach processes. A suggested frequency of at least six (6) times per year will help to maximize the benefit of an e-mail marketing campaign. Every effort should be made to collect email information from potential stakeholders at every point of contact by the City's team with the public.

IX. Social Media

The use of social media is an important tool in reaching stakeholders who are moving away from traditional forms of media to access their information and news. As examples, Facebook, Twitter, YouTube and weblogs are low cost social media opportunities that can be used to reach a broad and growing range of targeted audiences – especially younger demographic groups. If used strategically and consistently, social media can be incorporated into outreach efforts to further strengthen brand awareness and communicate key message points. The City is currently utilizing this avenue of communication, but the Utility should have its own effort to supplement the overall effort.

1


It's your water...conserve it!
City of
Clearwater

2


City of
Clearwater
It's your water...reuse it!

3


It's Your Water - reuse it
Clearwater

4


It's Your Water - conserve it
CLEARWATER
MANAGEMENT PLAN

5


Clearwater
It's your water...conserve it!

a


It's your water - reuse it
CLEARWATER
Management Plan

b


A CLEAR WATER
MANAGEMENT PLAN

APPENDIX B

Stakeholder Summary

City of Clearwater

Southwest Florida Water Management District

TETRA TECH

Taylor Biggette Brashears & Graham, Inc.

Key Stakeholders			
Contact	**Hesperides Contact**	**Date of Contact**	**Comments/Notes**
Clearwater Chamber of Commerce 401 Cleveland Street Clearwater, FL 33755 Bob Clifford, President/CEO bclifford@clearwaterflorida.org 727.461.0011, Ext. 239	MM/JM	4-May-10	Yes, like most municipalities, CW is facing water supply challenges; new industry and businesses will need process water and guarantees to relocate here; not much knowledge of IWMS; concerns over new wells and resulting sinkholes; Best format(7 and higher) - TV, newsletter, email, website, public mtg, social media; Important to be self reliant; env impact - sink hole; no idea of per capita use; reclaimed water is grey water/runoff from storm sewers; rely on govt to make water safe; Willing to be a part of communication strategy.
Tampa Bay Builders Association 6043 Winthorp Commerce, Suite 203 Tampa, FL 33578 Jennifer Doerfel, Executive VP 813. 571.8222 ext. 303 Jennifer@tbba.net	MM	3-Jun-10	Quantity and quality challenges now and in future; water supply essential to economic development. Look to newspapers and members to hear about key water issues. Newspaper, email and social media are good. Would trust HOAs, Gov and business community. Didn't realize Clwt produces some of their own water. No worries regarding wells, reclaimed or gw replinishment. Plant City just poor mgmt/planning. Very conservation minded, reuse, FL landscaping. Trust regulations. "Toilet to Tap" not so bad - let's at least discuss it. Willing to be a partner - share press releases, stories, etc. with members. Also suggested meeting with the Regional Coalition (real estate coalition) - Jeff Rogo. Very excited to be approached.
SWFWMD 2379 Broad Street Brooksville, FL 34604-6899 Anthony Andrade 800.423.1476 ext 4196	MM	27-May-10	Concern for water quantity everywhere, quality in coastal areas; CLWT has small lense of great water; need as much recharge as possible. PR needs to focus on simple technical terms, "safety" (not risk); "purified water"; absense of info always go to negative; "new water"; West Basin, CA - Rich Nagel - excellent PR program; also Orange Co; Dunedin - poster child; SWFWMD 2030 goal is 75% reuse; currently Clwt discharges to Tampa Bay and Steven Creek - not best use of water or good for TB. GW Replinishment - "measured benefits in specific locations"
SWFWMD 2379 Broad Street Brooksville, FL 34604-6899 Sandy Will 800.423.1476, ext 4604	MM	28-May-10	Indirect recharge - land surface; direct - recharge wells (not RIBs b/c of space and confining unit - thick lithology. So, advanced ultra purified water will be put in wells.Risk - arsenic - increased dissolved oxygen causes metals to leach. Production wells are downgradient and should be safe (may have challenge with UIC permit). Will be a good saltwater barrier.
SWFWMD 2379 Broad Street Brooksville, FL 34604-6899 David L. Moore, Executive Director 800.423.1476, ext 4604	MM	1-Jun-10	~45 local govts in TB area; largest 6 use 80% of water; push them to alternatives leaving gw for smaller users. Would like to interconnect systems to move extra reuse to Pasco to replinish wetlands. Risks: 1. arsenic; 2. public acceptance of gw replinishment; 3/4 spread out production wells to reduce sw intrution and sink hole possibilities. sink holes not really a risk since there will only be 1-3' gw drawdown, as opposed to 30-60'. Look at SPTimes article.
Tampa Bay Estuary Program 100 8th Avenue S.E. MS I-1 / NEP St. Petersburg, FL 33701 Holly Greening, Executive Director 727-893-2765	MM	7-May-10	Quality and Qantity concerns; no knowledge of IWMS, but integrating the water cycle is critical especially adding the environmental and human components; 7 and higher is daily newspaper, website. Consider neighbor to neighbor, garden supply stores as partners. Trust civic and env organizations. New plans must be fully evaluated - Saltwater intrusion, water quality impacts on groundwater; nutrient impacts. City should focus on landscaping - use city-owned property to highlight what FL-friendly looks like.
University of South Florida College of Geology 4202 E. Fowler Avenue Tampa FL 33620 Dr. Mark Stewart, Hydrogeologist 813-974-8749 mark@cas.usf.edu	MM	1-Jun-10	Production wells in Clearwater very different from the freeze related pumping in Plant City. During the freeze (77, 83, 10), there were 10+ days of heavy pumping that resulted in an 80' drop in gw levels; this combined with being a giologically sink-hole prone area, created problem. Did study on Patricia Estates (northern pinellas and unique) that showed there wasn't an obvious relationship between well cone of depression and sink holes. Check on Robert Peterson's SWFWMD presentation to the board for graphic on drop in gw. Combination of stress on aquifer and geology. *"Mapping of geology and hydrology related to subsidence induced foundation failures, Pinellas County."*

Clearwater Country Club Paula Penix, Club Manager 525 North Betty Lane Clearwater, Florida 33755 727.446.9501 paulaccc@tampabay.rr.com	JM	2-Jun-10	Keith Hering, Golf Superintendent. Yes both water quality and quantity problems; reliable water supply essential to economic growth; never heard of IWMS, but know about pieces; in '94 city shut down 10 wells, kept one for emergencies and went to reuse; reclaimed water causes corrosion of pipes; get info from organizations, govt mtgs, local govts (do not trust standard media - best to get info from govt directly); city should be self reliant; concerned about salt water intrusion and sinkholes; conservation = water restrictions, home improvements, reclaimed water; reuse - corrosion of pipes; don't know about GWR; keep informed, will publish info in newsletter
Countryside Country Club Jeff C. Anderson, Director of Golf 3001 Countryside Blvd., Clearwater, FL 33761 727.796.2153 jeff.c.anderson@ourclub.com	JM	2-Jun-10	Scott Heath, Golf Superintendent; quantity and quality concerns/important to economic development; city has done a good job in the past and has plans to do more. Hear about plans on TV, newspaper and networks; best format local news; govt access; standard media; messenger - bus community; city must be self reliant; sinkholes a concern; conservation - watering restrictions, toilets/shower - don't really know what City is doing; course uses reuse; concern over expense of putting in delivery system; never heard of GWR. Avenues to partner - youth golf program, newsletter, speakers at club meetings.
Chi Chi Ridriguez Golf Club James Poulter, Chief Operating Officer/Director of Golf 3030 N McMullen Booth Rd Clearwater, FL 33761-3331 P: (727) 726-8829 http://www.chichi.org	JM	2-Jun-10	Geoff Belline, Golf Superindendent - Yes both water quality and quantity problems; reliable water supply essential to economic growth; supportive of IWMS - without water, golf course is failure. Look to all outlets for info; rate email and newspaper as best; trust env and bus community for info. Like self reliance, concern over sink holes, restrictions; more familiar with City efforts during this interview; no worries about reuse; no knowledge about GWR. Please keep golf course informed; Can include info in Club's newsletter.
Clearwater Audubon Society P.O. Box 97 Clearwater, FL 33757 Mike McDonald, President (727) 409-0459 curmudgin@hotmail.com	JM	3-Jun-10	100% focused on oil spill; no time to focus on other issues right now. Willing to have us come and speak - after program gets under way.
Clearwater Harbor/St. Joseph Sound Initiative Pinellas County Dept of Env. Mgmt. 512 S. Ft. Harrison Avenue Clearwater, FL 33756 727. 464.4761	MM	27-May-10	Key concern is elliminated discharges to surface water. Exchanged voice mails, but never spoke; was referred to website for program information. Available when informaiton starts getting produced. Opporutnity for links to website (plans to address stormwater, etc.).
Kiwanis Club of Springtime City of Clearwater P.O. Box 6142 Clearwater, Florida 33758 Dale Tindall, President 727.725.7549 FriendsOfSpringtimeCityKiwanis@Yahoo.Com			Not comfortable answering questions. Willing to let us come and speak - after program gets under way
Mease Countryside Hospital 3231 McMullen Booth Rd. Safety Harbor, FL 34695 727.725.6111			Interested in program once it gets under way and how it will impact (positively or negatively) the hospital - no real comments at this time.
University of South Florida College of Public Health 13201 Bruce B. Downs Blvd. MDC 56 Tampa, FL 33612 Paula Knaus, Associate Dean 813.974.3623			Have spoken to several people, but not the right person!
Rotary Club of Clearwater P.O. Box 822 Clearwater, Florida 33757 Cliff Snedecker, District Governor Phone: (727) 510-4812 clrotary@clearwaterrotary.org			No desire to participate -"we don't use water"; may allow us to make a presentation at a later date.
Church of Scientology Mission of Clearwater Ben Shaw 100 N. Belcher Road Clearwater, FL 33765 (727) 443-4111 clearwater@scientology.net			No response after multiple attempts

APPENDIX C

Communication Timeline

City of Clearwater

Southwest Florida Water Management District

TETRA TECH

Taylor Biggette Brashears & Graham, Inc.

PROJECT TIMELINE

Groundwater Replenishment Project

City of Clearwater

Actions, Milestones, Results	Date Started	Date Completed	Team Member(s) Responsible	Attendees & Notes
Implemented the Integrated Water Management Strategy	2007		Public Utilities Dept.	
Introduction to City Council	2008	2009	Tracy Mercer, Nan Bennett, Rob Fahey	Through One-on-one meetings to cover entire Capital Improvements Program, Rate Study and Budgets to support the program
Publicity: *St. Petersburg Times*, "The ultimate in recycling: drinking water from wastewater"	5/24/2008	5/24/2008	Times reporter: Mike Donila	http://www.tampabay.com/news/localgovernment/the-ultimate-in-recycling-drinking-water-from-wastewater/523509
Defined Need for Aquifer Recharge in "City of Clearwater's Comprehensive Plan"	Adopted 12/18/08	Amended 7 times, last on Oct. 17, 2012	Utilities & Planning Depts.	Listed under D-14: "Potable Water and Natural Ground Water Aquifer Recharge Needs." http://myclearwater.com/gov/depts/planning_dev/long_range/plans/pdf/comp_plan/Complete_Comprehensive_Plan_single.pdf
Initial team meeting	2009	2009	Rob Fahey, Nan Bennett, Emilie Moore	
Project meetings	2009	continuing	Utilities/Engineering	
Met w/ PR Firm prior to launching branding of Integrated Water Management Strategy, stakeholder survey, and outreach plans	3/23/2010	2/28/2011	Melissa Meeker, Hesperides Group, LLC	City, Tetra Tech, LBG, Melissa Meeker
Hosted 3-hr Planning/Outreach Workshop	7/16/2010	7/16/2010	John Ruetten, Resources Trends Inc.	Discussion included branding principles, best practices, outreach that focuses on policy decisions/makers, case study review, Clearwater issues, next steps
Received results of Integrated Water Management Strategy re-branding, stakeholder survey, and outreach plans	2/28/2011	2/28/2011	Melissa Meeker, Hesperides Group, LLC	City received results through Tetra Tech
Presentation to Clearwater Citizen's Academy 2011	Sept. 2011	Sept. 2011	Tracy Mercer/Nan Bennett	20+ residents/community activists who are interested in getting involved in local government. Yearly program.

Introductory Campaign to Introduce GWR Concept: "Future of Our Water"	January 2012	April 2012	Heather Parsons	"The City of Clearwater is working to improve the future of our water. Plans are currently underway to implement the ongoing construction of the reclaimed water distribution system; the expansion of our existing reverse osmosis water treatment plant; the design and construction of a second reverse osmosis plant; and, looking at the feasibility of ground water replenishment technology. If you, your neighborhood, or civic association would like more information on any of these projects, call (727) 562-4960. Each project will have public meetings for public input over the coming year. If you are interested, watch for notification of these meetings on the city's website, myclearwater.com."
MyClearwater magazine - Article, "Future of Our Water"	Jan-April 2012 issue	Jan-April 2012 issue	Heather Parsons	Mailed to ~7,000 Play Pass holders; distributed ~8,000 to city facilities (rec centers, libraries, City Hall, MSB, etc.)
Presentation to Environmental Advisory Board	1/18/2012	1/18/2012	Utilities Staff	
Started Monthly Project Status Meetings: 1st Friday of month for most mtgs	2/3/2012	2/3/2012	Emilie Moore	Attendees: City, Tetra Tech, LBG, SWFWMD
Sunshine Lines Utility Biller Stuffer - Article, "Future of Our Water"	February 2012	February 2012	Heather Parsons	Distribution to 46,000 Clearwater Utility customers.
Monthly Project Status Meeting - March 2012	3/2/2012	3/2/2012	Emilie Moore	
Monthly Project Status Meeting - April 2012	4/6/2012	4/6/2012	Emilie Moore	
Provided feedback to SWFWMD (Darcy Brune) re: draft of aquifer recharge/reclaimed water perception survey	5/1/2012	5/1/2012	Darcy Brune	Rob Fahey, Nan Bennett, Lan-Anh Nguyen, Heather Parsons
Received results from SWFWMD re: perception survey	5/4/2012	1/4/2013	Darcy Brune/MM Hull	
Monthly Project Status Meeting - May 2012	5/4/2012	5/4/2012	Emilie Moore	
Monthly Project Status Meeting - June 2012	6/1/2012	6/1/2012	Emilie Moore	
Campaign promotion for *Water Quality Report*'s availability - includes "Future of Our Water" article	6/12/2012	6/12/2012	Heather Parsons	Press release; email to list server registrants; web posting (homepage under "News", Utilities page under "Utilities News", and PDF of CCR); *Sunshine Lines* utility bill stuffer, *MyClearwater* magazine, Facebook post.
Water Quality Report printed mailer- Article, "Future of Our Water"	6/22/2012	6/22/2012	Greg Turman	Distributed to Clearwater Utility customers by mail.
Monthly Project Status Meeting - July 2012	7/6/2012	7/6/2012	Emilie Moore	
Monthly Project Status Meeting - Aug 2012	8/10/2012	8/10/2012	Emilie Moore	
Hosted public meeting - FDEP/City GWR	8/14/2012	8/14/2012	Rob Fahey/Lan-Anh Nguyen	FDEP's public meeting for the well permit for GWR. Mtg held at Countryside Rec Center, 2-4 p.m.
Website Post - GWR Project Summary to city website, "City Projects" page	8/15/2012	Still online	City IT/Engineering	www.myclearwater.com/gov/depts/pwa/engin/projects/GroudwaterRepl.asp
Presentation to Clearwater Citizen's Academy 2012	Sept. 2012	Sept. 2012	Tracy Mercer/Nan Bennett	20+ residents/community activists who are interested in getting involved in local government. Yearly program.
Monthly Project Status Meeting - Sept 2012	9/7/2012	9/7/2012	Emilie Moore	

Monthly Project Status Meeting - Oct 2012	10/16/2012	10/16/2012	Emilie Moore	
Monthly Project Status Meeting - Nov 2012	11/2/2012	11/2/2012	Emilie Moore	
Monthly Project Status Meeting - Dec 2012	12/2/2012	12/2/2012	Emilie Moore	
Monthly Project Status Meeting - Jan 2013	1/4/2013	1/4/2013	Emilie Moore	
Monthly Project Status Meeting - Feb 2013	2/1/2013	2/1/2013	Emilie Moore	
Monthly Project Status Meeting - March 2013	3/1/2013	3/1/2013	Emilie Moore	
Presentation in Orlando - Potable Reuse for Florida: A Full Day Workshop for Elected Officials	3/22/2013	3/22/2013	Nan Bennett	
Outreach Meeting #1 - City/SWFWMD	4/3/2013	4/3/2013	Mary-Margaret Hull	Attendees: City & SWFWMD, to discuss outreach
Monthly Project Status Meeting - April 2013	4/5/2013	4/5/2013	Emilie Moore	
Outreach Meeting #2 - City/SWFWMD	4/16/2013	4/16/2013	Heather Parsons	Attendees: City & SWFWMD, to discuss 4/29 Presentation
Presentation Preview for 5/1 GWR Presentation to City Council	4/17/2013	4/17/2013	Nan Bennett/Heather Parsons	
RO Pilot Hands-on Training for City Staff	4/19/2013	5/3/2013	Tetra Tech/City	UF, RO, AOP, and Membrane Contactor Training
Formal presentation to City Council - Project Update	5/1/2013	5/1/2013	Nan Bennett	
City Manager's Viewpoint (newsletter for city staff) - Article, "Utility & Water Projects," one of three subtitles called "Groundwater Replenishment"	5/1/2013	5/1/2013	Heather Parsons	Distributed electronically to the city's 1,600 employees; posted to hallway display cases; discussed in Public Utilities staff meetings
Monthly Project Status Meeting - May 2013	5/3/2013	5/3/2013	Emilie Moore	
Groundbreaking Ceremony for City's 2nd RO Facility (mentioned project in host remarks)	5/6/2013	5/6/2013	Mercer/Bennett/Utilities department	Mercer talked about RO No. 2 plant, the future of our water, and groundwater replenishment
Requested/received permission from WateReuse Association to broadcast *Downstream* video on C-View TV (city's cable-access channel) and post to web	5/8/2013	5/8/2013	Heather Parsons	Granted approval to post, only if WateReuse Association is acknowledged.
Downstream video is airing on C-View TV's PSA & Environmental blocks	5/8/2013	Ongoing	Heather Parsons	Will air twice a day
Facebook post #1 - GWR overview & Downstream video	5/10/2013	5/10/2013	Heather Parsons	One like, no comments. Seen by few (posted Friday night), will repost 5/14
Facebook post #2 - GWR overview & Downstream video	5/14/2013	5/14/2013	Heather Parsons	Three likes, no comments
Publicity - 83 Degrees Online Newsletter,	5/21/2013	5/21/2013	News Reporter: Megan Hendicks	Article is about city's 2nd RO project; last section is on GWR. www.83degreesmedia.com/innovationnews/osmosis052113.aspx
Presentation to Florida Water Environment Association	5/23/2013	5/23/2013	Nan Bennett/Emilie Moore	Groundwater replenishment presentation to approximately 50-60 attendees.
Sunshine Lines Utility Biller Stuffer - Article, "Groundwater Replenishment"	June 2013	June 2013	Heather Parsons	Distribution to 46,000 Clearwater Utility customers. Worked w/ SWFWMD to comment on verbiage.
Pilot Plant is Operational	6/3/2013	One year	Tetra Tech	☺

MyClearwater magazine - Article, "Groundwater Replenishment" (content submitted)	Submitted 6/5/2013	Sept/Dec 2013 issue	Heather Parsons	Already submitted article; this issue isn't designed yet. Should be printed mid- to late-August 2013. Will be mailed to ~7,000 Play Pass holders; will distribute ~8,000 to city facilities (rec centers, libraries, City Hall, MSB, etc.)
Monthly Project Status Meeting - June 2013	6/7/2013	6/7/2013	Emilie Moore	
Provided a quote/comments for FDEP's GWR release	6/10/2013	6/10/2013	Tracy Mercer/Heather Parsons	Contact at FDEP: Catalina Quintana.
Write and revise website content draft	6/11/2013	Ongoing	Heather Parsons	Under review: Mercer, Bennett, Fahey, Nguyen, Moore. Once tweaks are made, will send to SWFWMD for comment.
Water Quality Report printed mailer- Article, "Groundwater Replenishment"	06/17/2013	06/17/2013	Greg Turman	Distributed to Clearwater Utility customers by mail.
Campaign promotion for Water Quality Report's availability - includes GWR article	6/19/2013	6/19/2013	Heather Parsons	Press release; email to list server registrants; web posting (homepage under "News", Utilities page under "Utilities News", and PDF of CCR); Facebook post.
Presentation to Clearwater Civic Academy	6/20/2013	6/20/2013	Tracy Mercer/Nan Bennett	A group of 25+ Clearwater High School honors students attended the program.
Presentation to Imperial Park HOA	7/8/2013	7/8/2013	Tracy Mercer/Glenn Daniel	40 to 60 people attended. Discussed GWR, RCW, and Future of Our Water/Integrated Water Management Strategy.
Monthly Project Status Meeting - July 2013	7/12/2013	7/12/2013	Emilie Moore	
Presentation to Edgewater HOA	7/15/2013	7/15/2013	Tracy Mercer/Jerry Wells	20 to 30 people attended. Discussed GWR, RCW, and Future of Our Water/Integrated Water Management Strategy.
Monthly Project Status Meeting - August 2013	8/2/2013	8/2/2013	Emilie Moore	
Draft of Fact Sheet/FAQ questions sent to City Project Team	8/2/2013	June 2014	Mercer/Bennett/Fahey/ Parsons	Heather Parsons came up with a skeleton of FAQs and started with SWFWMD's talking points. Additional content is needed. HP sent FAQs to Project Manager - waiting on feedback/input for technical support. Will forward to SWFWMD when receive feedback from city team. Final document will be designed by city's Graphic Designer as a tri-fold brochure for distribution to the public, at HOA/civic meetings, media, web, etc.
Presentation to Florida Section American Water Works Association workshop, entitled "Implementation of Alternative Water Supplies"	8/28/2013	8/28/2013	Nan Bennett/Emilie Moore/Don Ellison	40-50 people attended workshop. Discussed the GWR Pilot Purification System and groundwater recharge field testing.
Monthly Project Status Meeting - Sept. 2013	9/6/2013	9/6/2013	Emilie Moore	
Presentation to American Groundwater Trust in Orlando	9/9/2013	9/10/2013	Bennett	
Send web content to IT Dept to create a GWR page	9/12/2013	Ready to launch	Team/Heather Parsons	Team provided content; Heather Parsons worked w/ IT to post in Intranet environment (not yet live); final draft to city team hosted on Intranet; question of photos; ready to launch once given the go-ahead.
Presentation to Clearwater Citizen's Academy 2013	9/17/2013	9/17/2013	Tracy Mercer/Nan Bennett	20+ residents/community activists who are interested in getting involved in local government. Yearly program.

MyClearwater magazine - Article, "Groundwater Replenishment" (printed)	Sept/Dec 2013 issue	Sept/Dec 2013 issue	Heather Parsons	Submitted 6/5/2013. Printed and distributed. Mailed to ~7,000 Play Pass holders; will distribute ~8,000 to city facilities (rec centers, libraries, City Hall, MSB, etc.)
Monthly Project Status Meeting - Oct. 2013	10/4/2013	10/4/2013	Emilie Moore	
Public Outreach Meeting - City/SWFWMD	10/8/2013	10/8/2013	Fahey/Peterson	Attendees: (City) Fahey, Bennett, Nguyen, Parsons. (SWFWMD) Peterson, Hull.
Website launch	10/30/2013	10/30/2013	Heather Parsons	Received go-ahead to launch webpage. Updates will need to be made, and photos are extremely generic. However, it's a start.
Monthly Project Status Meeting - Nov. 2013	11/1/2013	11/1/2013	Emilie Moore	
Public Outreach Summary Report - City/Tetra Tech	11/7/2013	11/7/2013	Moore/Fahey	Discussion about roles and responsibilities. Introduction of Debra James, who will be summarizing the information for the report. Attendees: (City) Fahey, Bennett, Nguyen, Parsons. (Tetra Tech): Moore, James, others.
Documentation to Debra James for Public Outreach Summary Report	11/12/2013	11/12/2013	Heather Parsons	Final draft versions of communication plan and timeline as well as draft version of starter FAQ was sent to Debra James, who will be working on communications and the Public Outreach Summary report for the project. Electronic files of documents to follow.
Presentation to Environmental Advisory Board	Nov. 2013	Nov. 2013	Bennett	
FDEP Compliance Staff Site Visit of Pilot	12/5/2013	12/5/2013	Fahey/Bennett/Nguyen/ Moore/Trommer	Tour of Pilot Plant with Florida Department of Environmental Protection (FDEP) Compliance Staff Kelly Honey, Roger Evans, Alison Meetze.
Monthly Project Status Meeting - Dec. 2013	12/6/2013	12/6/2013	Emilie Moore	
Draft version of Public Outreach Summary is due	12/31/2013	12/31/2013	Debra James	
Monthly Project Status Meeting - Jan. 2014	1/3/2014	1/3/2014	Emilie Moore	
FDEP Permitting Staff Site Visit of Pilot	1/23/2014	1/23/2014	Mercer/Bennett/Fahey/ Nguyen/Peterson	Tour of Pilot Plant with Florida Department of Environmental Protection (FDEP) Permitting Staff Mauryn McDonald, Cindy Zhang-Torres, Jeff Thompson.
Web hits to myclearwater.com/groundwater: 92	1/23/2014	1/23/2014	Heather Parsons	Covers 10/30/13 to 1/23/14
Monthly Project Status Meeting - Feb. 2014	2/7/2014	2/7/2014	Emilie Moore	
Web hits to myclearwater.com/groundwater: 14	3/1/2014	3/1/2014	Heather Parsons	Covers 2/1 to 2/28
Monthly Project Status Meeting - March 2014	3/7/2014	3/7/2014	Emilie Moore	
Public Outreach Meeting	3/24/2014	3/24/2014	N. Bennett, E. Moore, R. Peterson, MM Hull, L. Nguyen, H. Parsons, D. James	Discussed revisions to Draft Public Outreach Summary Report
Web hits to myclearwater.com/groundwater: 31	4/1/2014	4/1/2014	Heather Parsons	Covers 3/1 to 3/31
Monthly Project Status Meeting – April 2014	4/4/2014	4/4/2014	Emilie Moore	
Presentation: Florida Water Resources Conference	4/8/2014	4/8/2014	Bennett/Moore/MacNevin	Approximately 25 people in audience.

Presentation: Meeting of the Minds group for immediate utility neighbors	4/25/2014	4/25/2014	Bennett/Moore/MacNevin	North Pinellas Utilities Group
Water Quality Report - Article, "Groundwater Replenishment"	April 2014	May 2014	Greg Turman; various city staff	Distributed to Clearwater Utility customers electronically.
Campaign promotion for GWR Pilot Plant Tours & Public Works Day	April 2014	May 2014	Heather Parsons	E-vite to stakeholders; press release; Top Ops event program (w/ GWR Pilot Tours photos, description, & tours info); media kits; email to list server registrants; web posting (homepage under "News", Utilities page under "Utilities News", and PDF of CCR); *Sunshine Lines* utility bill stuffer, Video bulletin board slide; online calendar of events; multiple Facebook posts.
Web hits to myclearwater.com/groundwater: 33	5/1/14	5/1/14	Heather Parsons	Covers 4/1 to 4/30
Monthly Project Status Meeting - May 2014	5/2/2014	5/2/2014	MacNevin/Roque	
FAQ Document: Written & Completed	5/1/14	5/21/14	Moore; Parsons; Hull; Peterson	Completed and included in media kits for GWR Pilot Plant Tours on 5/22/14. Goal is to produce the FAQs into a brochure for distribution at HOA mtgs, events, etc.
City Public Works Day/GWR Open House Event	5/22/2014	5/22/2014	Many	25 people toured the plant, not including project team staff that were on-hand. A group of adult students working toward their GEDs attended the tour via shuttle from the Public Works Day event, and a group of homeschooled youth were among those who toured the pilot plant. Others included SWFWMD, FDEP, Hillsborough County, and City of Clearwater staff.
GWR Pilot Plant Tours & Equipment Photos	5/22/14	5/22/14	Heather Parsons	Photos taken before and during tours; Parsons provided to City/SWFWMD/Tetra Tech w/ request to credit the City of Clearwater
Video Filming On-Site at Pilot Plant	5/27/14	5/27/14	Alex Gazio; various staff	B-roll of the pilot plant was taken, as well as interviews from City/SWFWMD/Tetra Tech staff
Video Production Meeting #1	5/30/14	5/30/14	Moore, Bennett, Fahey, Nguyen, Parsons, Stafford, Hull, Peterson	Discussed video for both the 2-min video and 5-min virtual tour
Web hits to myclearwater.com/groundwater: 94	6/1/14	6/1/14	Heather Parsons	Covers 5/1 to 5/31
Pilot Tour – St. Petersburg College (Seminole Campus); Environmental Science & Technology Associates of Science (AS) Degree Program	6/1/14	6/1/14	Bennett, Fahey, Nguyen	Urban Pollution EVR1263-1419 as an Independent Study, Summer Course. Instructor (attended tour) was Irvin Kety. Students who attended were Misty Bridges, Sean Ellington, Jordan Kelly.
Pilot Tour – Tampa Bay Water & North Pinellas Utility Leaders	6/2/14	6/2/14	Moore, Bennett, Fahey, Nguyen, Kinslow	10 attendees who were not project-staff, including Tampa Bay Water (Paula Dye, Ivana Blankenship), Safety Harbor (Ray Boler, Tammy Parker), Tarpon Springs (Paul Smith, Bob Robertson), Dunedin (Paul Stanek, Andy Shaffer, John Van Amburg, Mike Moschenik)

Campaign promotion for *Water Quality Report*'s availability - includes GWR article	6/3/14	6/3/14	Heather Parsons	Press release; email to list server registrants; web posting (homepage under "News", Utilities page under "Utilities News", and PDF of CCR); *Sunshine Lines* utility bill stuffer, Video bulletin board slide; Facebook post.
Pilot Plant is disassembled and removed from service	6/4/14	6/6/14	Tetra Tech	One-year pilot is complete.
Video Production Meeting #2	6/13/14	6/13/14	Moore, Fahey, Nguyen, Parsons, Hull, Peterson	Reviewed Draft Script and clip tracking for 2-min video. Hull drafted script and clip tracking for review.
Monthly Project Status Meeting - June 2014	6/20/14	6/20/14	Emilie Moore	
Final version of Public Outreach Summary is complete	6/27/14	6/27/14	Emilie Moore, Debra James	Printed copies to be distributed as discussed on 6/20/14

CURRENTLY UNDERWAY				
Production of video/virtual tour of pilot plant	May 2014	Ongoing	Alex Gazio (Producer); MM Hull (wrote script); various staff, on-camera interviews; various staff support	
FAQ Document: Design into a brochure format	6/12/14	Ongoing	Parsons, Hull	City's Graphic Designer did a mock layout for FAQ brochure. Hull to assist w/ SWFWMD's designer to layout brochure.
Presentation: SWFWMD's Environmental Advisory Committee	7/15/14	7/15/14	Fahey, Bennett	
Presentation: Aquifer Recharge Symposium	7/31/14	7/31/14	Trommer	Anaheim, CA
Presentation – WateReuse Symposium	9/7/14	9/10/14	Bennett, MacNevin	Dallas, TX
Presentation – American Groundwater Association	9/8/14	9/9/14	Trommer, Kinslow	Orlando, FL
Presentation – American Water Works Association (Florida Section) Conference	Nov. 2014	Nov. 2014	Moore, Bennett	Orlando, FL
Publicity: Article is scheduled to run in Nov. 2014 issue of *Water World* magazine	Nov. 2014	Nov. 2014	Trommer	
Presentations to HOAs and boards as they are scheduled	Ongoing	Ongoing		
Presentation: Clearwater Environmental Advisory Board	TBA	TBA		
When city has results from pilot testing program and a decision to proceed to construction of a full-scale facility has been approved, a full-fledged campaign will roll out. The larger campaign will include complete project promotion. Intermediate efforts will focus around an open house event with site tours of the pilot plant.	2013	Jan. 2015		
A public relations firm will be brought on board to take the lead on a branding and information campaign to encourage the acceptance of the groundwater replenishment concept and this project.	Ongoing	Jan. 2015		

PUBLIC OUTREACH EFFORT
COMMUNICATION TIMELINE
Groundwater Replenishment Project
City of Clearwater

Actions, Milestones, Results	Date Started	Date Completed	Team Member(s) Responsible	Details
Publicity: *St. Petersburg Times*, "The ultimate in recycling: drinking water from wastewater"	5/24/2008	5/24/2008	Times reporter: Mike Donila	http://www.tampabay.com/news/localgovernment/the-ultimate-in-recycling-drinking-water-from-wastewater/523509
Defined Need for Aquifer Recharge in "City of Clearwater's Comprehensive Plan"	Adopted 12/18/08	Amended 7 times, last on Oct. 17, 2012	Utilities & Planning Depts.	Listed under D-14: "Potable Water and Natural Ground Water Aquifer Recharge Needs." http://myclearwater.com/gov/depts/planning_dev/long_range/plans/pdf/comp_plan/Complete_Comprehensive_Plan_single.pdf
Met w/ PR Firm prior to launching branding of Integrated Water Management Strategy, stakeholder survey, and outreach plans	3/23/2010	2/28/2011	Melissa Meeker, Hesperides Group, LLC	City, Tetra Tech, LBG, Melissa Meeker
Hosted 3-hr Planning/Outreach Workshop	7/16/2010	7/16/2010	John Ruetten, Resources Trends Inc.	Discussion included branding principles, best practices, outreach that focuses on policy decisions/makers, case study review, Clearwater issues, next steps
Received results of Integrated Water Management Strategy re-branding, stakeholder survey, and outreach plans	2/28/2011	2/28/2011	Melissa Meeker, Hesperides Group, LLC	City received results through Tetra Tech

Actions, Milestones, Results	Date Started	Date Completed	Team Member(s) Responsible	Details
Presentation to Clearwater Citizen's Academy 2011	Sept. 2011	Sept. 2011	Tracy Mercer/Nan Bennett	20+ residents/community activists who are interested in getting involved in local government. Yearly program.
Introductory Campaign to Introduce GWR Concept: "Future of Our Water"	January 2012	April 2012	Heather Parsons	"The City of Clearwater is working to improve the future of our water. Plans are currently underway to implement the ongoing construction of the reclaimed water distribution system; the expansion of our existing reverse osmosis water treatment plant; the design and construction of a second reverse osmosis plant; and, looking at the feasibility of ground water replenishment technology. If you, your neighborhood, or civic association would like more information on any of these projects, call (727) 562-4960. Each project will have public meetings for public input over the coming year. If you are interested, watch for notification of these meetings on the city's website, myclearwater.com."
MyClearwater magazine - Article, "Future of Our Water"	Jan-April 2012 issue	Jan-April 2012 issue	Heather Parsons	Mailed to ~7,000 Play Pass holders; distributed ~8,000 to city facilities (rec centers, libraries, City Hall, MSB, etc.)
Presentation to Environmental Advisory Board	1/18/2012	1/18/2012	Utilities Staff	
Sunshine Lines Utility Biller Stuffer - Article, "Future of Our Water"	February 2012	February 2012	Heather Parsons	Distribution to 46,000 Clearwater Utility customers.

Action	Date Started	Date Completed	Team Member(s) Responsible	Details
Provided feedback to SWFWMD (Darcy Brune) re: draft of aquifer recharge/reclaimed water perception survey	5/1/2012	5/1/2012	Darcy Brune	
Received results from SWFWMD re: perception survey	5/4/2012	1/4/2013	Darcy Brune/MM Hull	http://www.swfwmd.state.fl.us/projects/social_research/details/51/
Campaign promotion for *Water Quality Report*'s availability - includes "Future of Our Water" article	6/12/2012	6/12/2012	Heather Parsons	Press release; email to list server registrants; web posting (homepage under "News", Utilities page under "Utilities News", and PDF of CCR); *Sunshine Lines* utility bill stuffer, *MyClearwater* magazine, Facebook post.
Water Quality Report printed mailer- Article, "Future of Our Water"	6/22/2012	6/22/2012	Greg Turman	Distributed to Clearwater Utility customers by mail.
Hosted public meeting - FDEP/City GWR	8/14/2012	8/14/2012	Rob Fahey/Lan-Anh Nguyen	FDEP's public meeting for the well permit for GWR. Mtg held at Countryside Rec Center, 2-4 p.m.
Website Post - GWR Project Summary to city website, "City Projects" page	8/15/2012	Still online	City IT/Engineering	www.myclearwater.com/gov/depts/pwa/engin/projects/GroudwaterRepl.asp
Presentation to Clearwater Citizen's Academy 2012	Sept. 2012	Sept. 2012	Tracy Mercer/Nan Bennett	20+ residents/community activists who are interested in getting involved in local government. Yearly program.

Actions, Milestones, Results	Date Started	Date Completed	Team Member(s) Responsible	Details
Presentation in Orlando - Potable Reuse for Florida: A Full Day Workshop for Elected Officials	3/22/2013	3/22/2013	Nan Bennett	
Outreach Meeting #1 - City/SWFWMD	4/3/2013	4/3/2013	Mary-Margaret Hull	Attendees: City & SWFWMD, to discuss outreach
Outreach Meeting #2 - City/SWFWMD	4/16/2013	4/16/2013	Heather Parsons	Attendees: City & SWFWMD, to discuss 4/29 Presentation
Presentation Preview for 5/1 GWR Presentation to City Council	4/17/2013	4/17/2013	Nan Bennett/Heather Parsons	
RO Pilot Hands-on Training for City Staff	4/19/2013	5/3/2013	Tetra Tech/City	UF, RO, AOP, and Membrane Contactor Training
Formal presentation to City Council - Project Update	5/1/2013	5/1/2013	Nan Bennett	
City Manager's Viewpoint (newsletter for city staff) - Article, "Utility & Water Projects," one of three subtitles called "Groundwater Replenishment"	5/1/2013	5/1/2013	Heather Parsons	Distributed electronically to the city's 1,600 employees; posted to hallway display cases; discussed in Public Utilities staff meetings
Groundbreaking Ceremony for City's 2nd RO Facility (mentioned project in host remarks)	5/6/2013	5/6/2013	Mercer/Bennett/Utilities department	Mercer talked about RO No. 2 plant, the future of our water, and groundwater replenishment

Actions, Milestones, Results	Date Started	Date Completed	Team Member(s) Responsible	Details
Requested/received permission from WateReuse Association to broadcast *Downstream* video on C-View TV (city's cable-access channel) and post to web	5/8/2013	5/8/2013	Heather Parsons	Granted approval to post, only if WateReuse Association is acknowledged.
Downstream video is airing on C-View TV's PSA & Environmental blocks	5/8/2013	Ongoing	Heather Parsons	Will air twice a day
Facebook post #1 - GWR overview & Downstream video	5/10/2013	5/10/2013	Heather Parsons	One like, no comments. Seen by few (posted Friday night), will repost 5/14
Facebook post #2 - GWR overview & Downstream video	5/14/2013	5/14/2013	Heather Parsons	Three likes, no comments
Publicity - 83 Degrees Online Newsletter,	5/21/2013	5/21/2013	News Reporter: Megan Hendicks	Article is about city's 2nd RO project; last section is on GWR. www.83degreesmedia.com/innovationnews/osmosis052113.aspx
Presentation to Florida Water Environment Association	5/23/2013	5/23/2013	Nan Bennett/Emilie Moore	Groundwater replenishment presentation to approximately 50-60 attendees.
Sunshine Lines Utility Biller Stuffer - Article, "Groundwater Replenishment"	June 2013	June 2013	Heather Parsons	Distribution to 46,000 Clearwater Utility customers. Worked w/ SWFWMD to comment on verbiage.
Pilot Plant is Operational	6/3/2013	One year	Tetra Tech	☺

Actions, Milestones, Results	Date Started	Date Completed	Team Member(s) Responsible	Details
MyClearwater magazine - Article, "Groundwater Replenishment" (content submitted)	Submitted 6/5/2013	Sept/Dec 2013 issue	Heather Parsons	Already submitted article; this issue isn't designed yet. Should be printed mid- to late-August 2013. Will be mailed to ~7,000 Play Pass holders; will distribute ~8,000 to city facilities (rec centers, libraries, City Hall, MSB, etc.)
Water Quality Report printed mailer- Article, "Groundwater Replenishment"	06/17/2013	06/17/2013	Greg Turman	Distributed to Clearwater Utility customers by mail.
Campaign promotion for Water Quality Report's availability - includes GWR article	6/19/2013	6/19/2013	Heather Parsons	Press release; email to list server registrants; web posting (homepage under "News", Utilities page under "Utilities News", and PDF of CCR); Facebook post.
Presentation to Clearwater Civic Leadership Group	June 2013	June 2013	Tracy Mercer/Nan Bennett	A group of 25+ Clearwater High School honors students attended the program.
Presentation to Imperial Park HOA	7/8/2013	7/8/2013	Tracy Mercer/Glenn Daniel	40 to 60 people attended. Discussed GWR, RCW, and Future of Our Water/Integrated Water Management Strategy.
Presentation to Edgewater HOA	7/15/2013	7/15/2013	Tracy Mercer/Jerry Wells	20 to 30 people attended. Discussed GWR, RCW, and Future of Our Water/Integrated Water Management Strategy.

Actions, Milestones, Results	Date Started	Date Completed	Team Member(s) Responsible	Details
Draft of Fact Sheet/FAQ questions sent to City Project Team	8/2/2013	June 2014	Mercer/Bennett/Fahey/Parsons	H. Parsons developed skeleton of FAQs; started with SWFWMD's talking points. Additional content needed. HP sent FAQs to Project Manager for feedback/input on technical support. Forwarded to SWFWMD for review.Final document to be designed by city's Graphic Designer as tri-fold brochure for distribution at public meetings, media, web.
Presentation to American Water Works Association workshop, entitled “Implementation of Alternative Water Supplies”	8/28/2013	8/28/2013	Nan Bennett/Emilie Moore/Don Ellison	40-50 people attended workshop. Discussed the GWR Pilot Purification System and groundwater recharge field testing.
Presentation to American Groundwater Trust	9/9/2013	9/10/2013	Bennett	Presentation held in Orlando.
Send web content to IT Dept to create a GWR page	9/12/2013	Ready to launch	Team/Heather Parsons	Team provided content; Heather Parsons worked w/ IT to post in Intranet environment (not yet live); final draft to city team hosted on Intranet; question of photos; ready to launch once given the go-ahead.
Presentation to Clearwater Citizen's Academy 2013	9/17/2013	9/17/2013	Tracy Mercer/Nan Bennett	20+ residents/community activists who are interested in getting involved in local government. Yearly program.
MyClearwater magazine - Article, "Groundwater Replenishment" (printed)	Sept/Dec 2013 issue	Sept/Dec 2013 issue	Heather Parsons	Submitted 6/5/2013. Printed and distributed. Mailed to ~7,000 Play Pass holders; will distribute ~8,000 to city facilities (rec centers, libraries, City Hall, MSB, etc.)

Actions, Milestones, Results	Date Started	Date Completed	Team Member(s) Responsible	Details
Public Outreach Meeting - City/SWFWMD	10/8/2013	10/8/2013	Fahey/Peterson	Attendees: (City) Fahey, Bennett, Nguyen, Parsons. (SWFWMD) Peterson, Hull.
Website launch	10/30/2013	10/30/2013	Heather Parsons	Received go-ahead to launch webpage. Updates will need to be made, and photos are extremely generic. However, it's a start.
Presentation to Environmental Advisory Board	Nov. 2013	Nov. 2013	Bennett	
FDEP Compliance Staff Site Visit of Pilot	12/5/2013	12/5/2013	Fahey/Bennett/ Nguyen/Moore/ Trommer	Tour of Pilot Plant with Florida Department of Environmental Protection (FDEP) Compliance Staff Kelly Honey, Roger Evans, Alison Meetze.
Draft version of Public Outreach Summary Report due	12/31/2013	12/31/2013	Debra James	
FDEP Permitting Staff Site Visit of Pilot	1/23/2014	1/23/2014	Mercer/Bennett/ Fahey/Nguyen/ Peterson	Tour of Pilot Plant with Florida Department of Environmental Protection (FDEP) Permitting Staff Mauryn McDonald, Cindy Zhang-Torres, Jeff Thompson.
Public Outreach Meeting	3/24/2014	3/24/2014	N. Bennett, E. Moore, R. Peterson, MM Hull, L. Nguyen, H. Parsons, D. James	Discussed revisions to Draft Public Outreach Summary Report

Presentation: Florida Water Resources Conference	4/8/2014	4/8/2014	Bennett/MacNevin	Approximately 25 people in audience.
Presentation: Meeting of the Minds group for immediate utility neighbors	4/25/2014	4/25/2014	Bennett/Moore/MacNevin	North Pinellas Utilities Group
Water Quality Report - Article, "Groundwater Replenishment"	April 2014	May 2014	Greg Turman; various city staff	Distributed to Clearwater Utility customers electronically.
Campaign promotion for GWR Pilot Plant Tours & Public Works Day	April 2014	May 2014	Heather Parsons	E-vite to stakeholders; press release; Top Ops event program (w/ GWR Pilot Tours photos, description, & tours info); media kits; email to list server registrants; web posting (homepage under "News", Utilities page under "Utilities News", and PDF of CCR); Sunshine Lines utility bill stuffer, Video bulletin board slide; online calendar of events; multiple Facebook posts.
FAQ Document: Written & Completed	5/1/14	5/21/14	Moore; Parsons; Hull; Peterson	Completed and included in media kits for GWR Pilot Plant Tours on 5/22/14. Goal is to produce the FAQs into a brochure for distribution at HOA mtgs, events, etc.
City Public Works Day/GWR Open House Event	5/22/2014	5/22/2014	Many	25 people toured the plant, not including project team staff that were on-hand. A group of adult students working toward their GEDs attended the tour via shuttle from the Public Works Day event, and a group of homeschooled youth were among those who toured the pilot plant. Others included SWFWMD, FDEP, Hillsborough County, and

				City of Clearwater staff.
Video Filming On-Site at Pilot Plant	5/27/14	5/27/14	Alex Gazio; various staff	B-roll of the pilot plant was taken, as well as interviews from City/SWFWMD/Tetra Tech staff
Video Production Meeting #1	5/30/14	5/30/14	Moore, Bennett, Fahey, Nguyen, Parsons, Stafford, Hull, Peterson	Discussed video for both the 2-min video and 5-min virtual tour
Pilot Tour – St. Petersburg College (Seminole Campus); Environmental Science & Technology Associates of Science (AS) Degree Program	6/1/14	6/1/14	Bennett, Fahey, Nguyen	Urban Pollution EVR1263-1419 as an Independent Study, Summer Course. Instructor (attended tour) was Irvin Kety. Students who attended were Misty Bridges, Sean Ellington, Jordan Kelly.
Pilot Tour – Tampa Bay Water & North Pinellas Utility Leaders	6/2/14	6/2/14	Moore, Bennett, Fahey, Nguyen, Kinslow	10 attendees who were not project-staff, including Tampa Bay Water (Paula Dye, Ivana Blankenship), Safety Harbor (Ray Boler, Tammy Parker), Tarpon Springs (Paul Smith, Bob Robertson), Dunedin (Paul Stanek, Andy Shaffer, John Van Amburg, Mike Moschenik)
Campaign promotion for Water Quality Report's availability - includes GWR article	6/3/14	6/3/14	Heather Parsons	Press release; email to list server registrants; web posting (homepage under "News", Utilities page under "Utilities News", and PDF of CCR); Sunshine Lines utility bill stuffer, Video bulletin board slide; Facebook post.

Pilot Plant is disassembled and removed from service	6/4/14	6/6/14	Tetra Tech	One-year pilot is complete.
Video Production Meeting #2	6/13/14	6/13/14	Moore, Fahey, Nguyen, Parsons, Hull, Peterson	Reviewed Draft Script and clip tracking for 2-min video. Hull drafted script and clip tracking for review.
Final version of Public Outreach Summary is complete	6/27/14	6/27/14	Emilie Moore, Debra James	Printed copies to be distributed as discussed on 6/20/14
Presentations to HOAs and boards as they are scheduled	Ongoing	Ongoing		

APPENDIX D

Communication Tools

City of Clearwater

Southwest Florida Water Management District

TETRA TECH

Biggert Brashears & Graham, Inc.

City of Clearwater

Public Communications, Post Office Box 4748, Clearwater, Florida 33758-4748
100 South Myrtle Avenue, Clearwater, Florida 33756
Telephone (727) 562-4284 Fax (727) 562-4696

FOR IMMEDIATE RELEASE
June 3, 2014

Contact:
Heather Parsons
(727) 562-4708

Drinking Water Quality Report Now Available

CLEARWATER, Fla. -- The City of Clearwater Public Utilities Department released its annual Water Quality Report. The report contains pertinent water quality information of interest to Clearwater residents. As part of the U.S. Environmental Protection Agency's "Safe Drinking Water Act Amendments," all water systems throughout the country must publish this annual report.

The Water Quality Report for reporting year 2013 is available electronically at myclearwater.com/waterreport. Printed copies are available upon request by calling Clearwater Public Utilities at (727) 562-4960. The report also is available in Spanish.

"I am pleased that our water quality meets or exceeds national drinking standards. This is a testament to the great job our employees do in performing their daily work to secure the integrity and safety of our water system," said Tracy Mercer, Public Utilities Director.

To learn more about the city's water quality or to request a copy by mail, call (727) 562-4960 or visit myclearwater.com.

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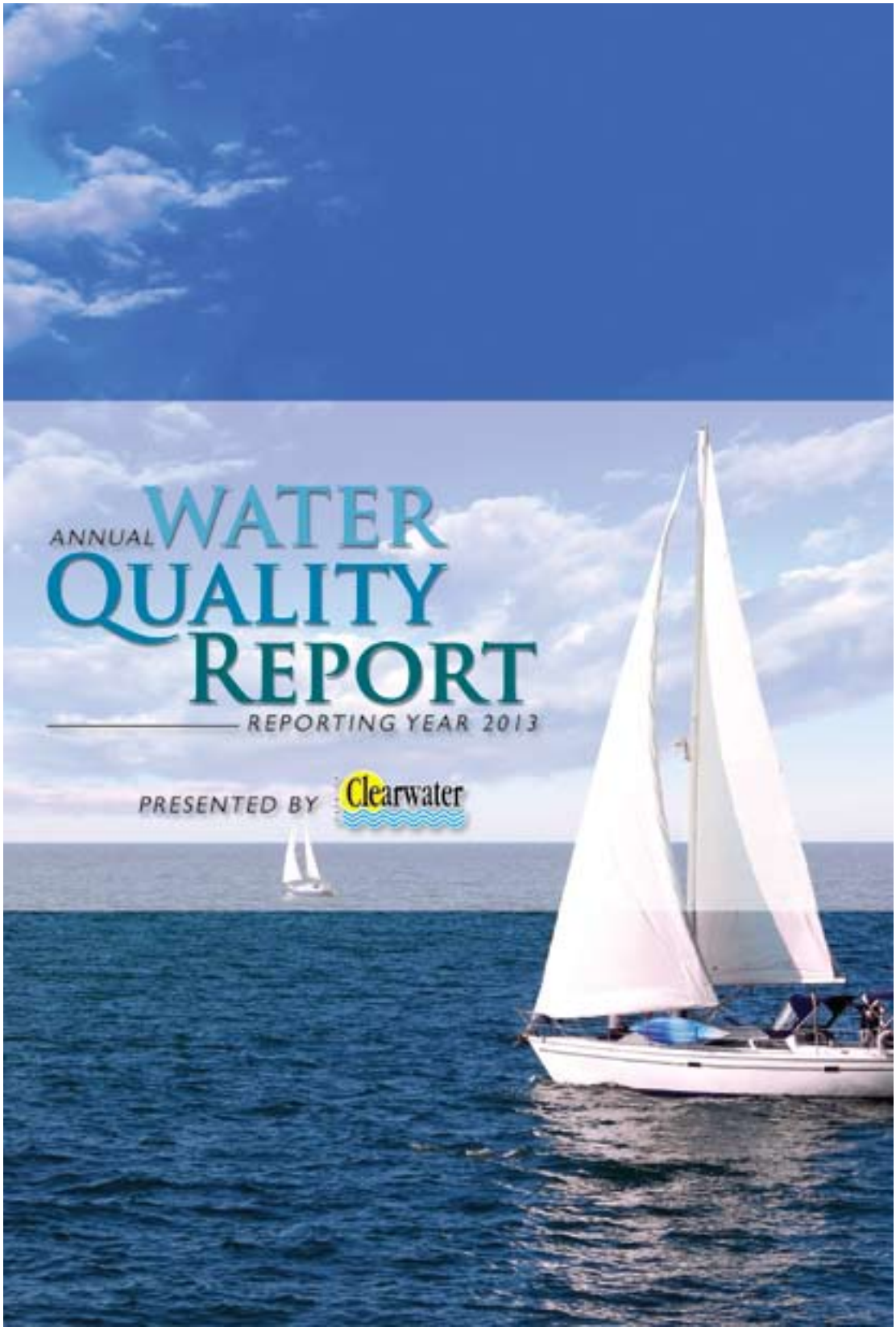

ANNUAL WATER
QUALITY
REPORT
REPORTING YEAR 2013
PRESENTED BY Clearwater

Dear City of Clearwater Water Consumer,

This report presents important information about the City of Clearwater's drinking water quality. It also discusses our water supplies and methods used for producing drinking water you can trust, delivered to your tap every day. Included is information on how you can participate in water system improvements and decision-making processes.

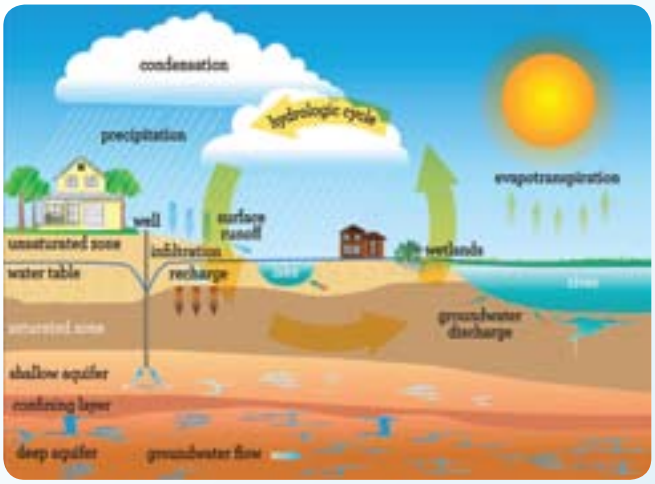
Our trained, licensed water professionals are committed to producing high-quality drinking water that meets or exceeds all regulatory standards. Our Engineering and Management staff strive to maintain a modern and reliable water system by employing a forward-thinking, proactive approach in anticipating future community needs and regulations.

The City of Clearwater routinely monitors for contaminants in your drinking water in accordance with Federal and State laws, rules, and regulations. This report is based in the results of monitoring from January 1 through December 31, 2013.

Where Does My Water Come From?

City of Clearwater residents use approximately 10.7 million gallons of potable water every day. Approximately 60 percent is pumped from City-owned and -operated groundwater wells; the remaining daily demand is supplied by water purchased from Pinellas County Utilities. The groundwater source for Clearwater comes from a groundwater supply called the Floridan Aquifer. This aquifer is one of the major sources of groundwater in the United States and underlies all of Florida, southern Georgia, and small parts of adjacent Alabama and South Carolina.

Pinellas County Utilities receives drinking water from Tampa Bay Water, a regional water supplier, which in turn becomes part of the water supplied to the residents of Clearwater. The water supplied by Tampa Bay Water is a blend of groundwater, treated surface water, and desalinated seawater. Eleven regional wellfields, pumping from the Floridan Aquifer, are the primary source for the regional groundwater supply. The Alafia River, the Hillsborough River, C.W. Bill Young Regional Reservoir, and the Tampa Bypass Canal are the primary supplies for the regional treated surface water supply. Hillsborough Bay is the primary supply of seawater for the regional desalinated supply. For more information on the Tampa Bay Water system, visit their Web site at www.tampabaywater.org.



Community Participation Is Welcome

You are invited to participate in our regularly scheduled meetings. The City of Clearwater Council normally meets at 6 p.m. on the first and third Thursdays of each month at City Hall, 112 S. Osceola Ave, Clearwater, FL. The meeting agendas are published on the city's Web site at www.myclearwater.com. For more information, call (727) 562-4090.

The Pinellas County Board of County Commissioners meets typically twice a month, usually, but not always, on the first and third Tuesdays of the month. The earlier meeting in the month begins at 9:30 a.m. Meetings in the latter part of the month are held in two parts. Agenda items are discussed with the Board at 2 p.m., after which there is a break and the Board reconvenes at 6 p.m. The public is invited to attend these meetings held in the 5th floor Assembly Room of the Pinellas County Courthouse located at 315 Court St., Clearwater, FL 33765. For more information, call (727) 464-3485.

Tampa Bay Water's Board of Directors meetings occur on the third Monday of every other (even) month at 9 a.m. at Tampa Bay Water, 2575 Enterprise Rd., Clearwater, FL 33763. For more information, visit their Web site at www.tampabaywater.org or call (727) 796-2355.

Ground Water Replenishment

The City of Clearwater is looking at using purified water to replenish local groundwater supplies, with the goal of helping to ensure the availability of more drinking water in the future. This project, if implemented, could potentially improve groundwater levels within the city so more drinking water will be available. A study is underway that will determine how much the groundwater level can be improved by directly adding up to three million gallons a day of purified water into a brackish water zone below the fresh water zone of the Upper Florida Aquifer. A 2011 feasibility study concluded this groundwater replenishment project to be safe and economical.

The city is currently in the pilot and demonstration phase of the study. A small-scale pilot plant went online in June 2013 and is producing results that will indicate whether a full-scale plant is feasible and safe.

The study is cooperatively funded by the Southwest Florida Water Management District. Informational presentations are available for neighborhood and civic associations by calling (727) 562-4960. For project information, visit www.myclearwater.com/groundwater.

Water Restrictions

Citywide watering restrictions change on a regular basis, usually once or twice a year. Make sure your household is following current watering restrictions while watering lawns and landscaping. For your watering schedule or more information, visit www. myclearwater.com/watering or call the Water Conservation Hotline at (727) 562-4WTR (4987).

City Water Treatment Plants

Clearwater has three water treatment plants, one of which is a reverse-osmosis (RO) water treatment plant. Construction is currently underway on the city's second RO water treatment plant, which is anticipated to be online early next year.

How Is My Water Treated?

Clearwater uses Best Available Treatment (BAT) technologies to ensure that the drinking water delivered to our consumers meets or exceeds all drinking water standards. The city produces its own water and purchases the rest from Pinellas County Utilities to meet the water demand of city residents.

At RO Plant No. 1, water from wells in the Upper Floridan Aquifer is filtered to remove suspended solids such as iron. Then it is processed by reverse osmosis (RO) to remove selected dissolved molecules, including hardness-causing salts. The water is disinfected using monochloramines, stabilized to protect the pipeline system, and then pumped to consumers.

At Water Plants No. 2 and No. 3, raw water from the Upper Floridan Aquifer is blended with water supplied by Pinellas County Utilities, disinfected using monochloramines, stabilized to protect the pipeline system, and then pumped to consumers.

Questions?

Please contact Greg Turman, Water Production Coordinator, at (727) 562-4960 if you have questions about this report.

Substances That Could Be in Water

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

Microbial Contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

Inorganic Contaminants, such as salts and metals, which can be naturally occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

Pesticides and Herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.

Organic Chemical Contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production and can also come from gas stations, urban stormwater runoff, and septic systems.

Radioactive Contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, the U.S. EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at (800) 426-4791.

Bring Reclaimed Water into Your Neighborhood!

If your neighborhood does not currently have reclaimed water service and you would like it, it is easy to initiate a project. Neighbors along the proposed pipeline route would need to sign a Citizen-initiated Petition form to express interest in getting reclaimed service. More than 50 percent of property owners along the route are required for approval leading to construction. To learn more, call (727) 562-4960 or visit www.myclearwater.com/reclaimed.

Source Water Assessment

In 2013, the Department of Environmental Protection performed a Source Water Assessment on the City of Clearwater, Tampa Bay Water (TBW), and Pinellas County utility systems. The assessment was conducted to provide information about any potential sources of contamination in the vicinity of our wells. The well water source is considered to be at low to moderate risk due to potential sources of contamination such as gas stations and waste cleanup sites present in the assessment area. The assessment of the Tampa Bay Water surface water intakes are considered to be at high risk because of the many potential sources of contamination present in the assessment area. The complete assessment results are available on the FDEP Source Water Assessment and Protection Program Web site at www.dep.state.fl.us/swapp or they can be obtained from Tampa Bay Water, 2575 Enterprise Road, Clearwater, FL, 33763, (727) 796-2355.

Lead in Home Plumbing

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. We are responsible for providing high-quality drinking water, but we cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at www.epa.gov/safewater/lead.

Sampling Results

During the past year, we have taken hundreds of water samples in order to determine the presence of any radioactive, biological, inorganic, volatile organic, or synthetic organic contaminants. The information in the tables shows only those contaminants that were detected in the water. Although all the substances listed here are under the Maximum Contaminant Level (MCL), it is important that you know exactly what was detected and how much of the substance was present in the water. We are pleased to report that the City of Clearwater's drinking water meets all Federal and State requirements.

The State requires us to monitor for certain substances less often than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

We participated in the 3rd stage of the EPA's Unregulated Contaminant Monitoring Regulation (UCMR3) program by performing additional tests on our drinking water. UCMR3 benefits the environment and public health by providing the EPA with data on the occurrence of contaminants suspected to be in drinking water, in order to determine if the EPA needs to introduce new regulatory standards to improve drinking water quality.

PRIMARY REGULATED CONTAMINANTS

Microbiological Contaminants

		City of Clearwater		Pinellas County Utilities				
CONTAMINANT AND UNIT OF MEASUREMENT	MCL VIOLATION (YES/NO)	DATE OF SAMPLING (MO./YR.)	HIGHEST MONTHLY PERCENTAGE	DATE OF SAMPLING (MO./YR.)	HIGHEST MONTHLY PERCENTAGE	MCLG	MCL	LIKELY SOURCE OF CONTAMINATION
Total Coliform Bacteria (% positive samples)	No	09/2013	4	1/2013–12/2013	2.5	0	Presence of coliform bacteria in 5% of monthly samples	Naturally present in the environment

	City of Clearwater					
CONTAMINANT AND UNIT OF MEASUREMENT	MCL VIOLATION (YES/NO)	DATE OF SAMPLING (MO./YR.)	TOTAL NUMBER OF POSITIVE SAMPLES FOR THE YEAR	MCLG	MCL	LIKELY SOURCE OF CONTAMINATION
Fecal coliform and E.coli [in the distribution system] (# positive samples)	No	01/01/2013–12/31/2013	7	0	0	Human and animal fecal waste

		Tampa Bay Water					
CONTAMINANT AND UNIT OF MEASUREMENT	MCL VIOLATION (YES/NO)	DATE OF SAMPLING (MO./YR.)	THE HIGHEST SINGLE MEASUREMENT	THE LOWEST MONTHLY PERCENTAGE OF SAMPLES MEETING REGULATORY LIMITS	MCLG	MCL	LIKELY SOURCE OF CONTAMINATION
Turbidity[1] (NTU)	No	1/2013–6/2013; 11/2013–12/2013	0.80	100	NA	TT	Soil runoff

Radioactive Contaminants		City of Clearwater			Pinellas County Utilities					
CONTAMINANT AND UNIT OF MEASUREMENT	MCL VIOLATION (YES/NO)	DATE OF SAMPLING (MO./YR.)	LEVEL DETECTED	RANGE OF RESULTS	DATE OF SAMPLING (MO./YR.)	LEVEL DETECTED	RANGE OF RESULTS	MCLG	MCL	LIKELY SOURCE OF CONTAMINATION
Alpha Emitters (pCi/L)	No	NA	NA	NA	3/2011	0.806	ND–0.806	0	15	Erosion of natural deposits
Beta/Photon Emitters (pCi/L)	No	NA	NA	NA	NA	NA	NA	0	50	Decay of natural and man-made deposits
Radium 226 + 228 [Combined Radium] (pCi/L)	No	02/01/2013	1.7	0.6–1.7	NA	NA	NA	0	5	Erosion of natural deposits
Uranium (ppb)	No	02/01/2013	0.51	0.11–0.51	NA	NA	NA	0	30	Erosion of natural deposits
Inorganic Contaminants										
Antimony (ppb)	No	NA	NA	NA	NA	NA	NA	6	6	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder
Arsenic[2] (ppb)	No	02/01/2013	5.9	ND–5.9	1/2013	0.4	0.1–0.4	NA	10	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Barium (ppm)	No	02/01/2013	0.018	0.009–0.018	1/2013	0.0209	0.0171–0.0209	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Cadmium (ppb)	No	NA	NA	NA	NA	NA	NA	5	5	Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries and paints
Chromium (ppb)	No	02/01/2013	7.7	3.4–7.7	1/2013	5.3	4.2–5.3	100	100	Discharge from steel and pulp mills; erosion of natural deposits
Cyanide (ppb)	No	NA	NA	NA	1/2013	0.54	ND–0.54	200	200	Discharge from steel/metal factories; discharge from plastic and fertilizer factories
Fluoride (ppm)	No	02/01/2013	0.12	0.048–0.12	1/2013	0.18	ND–0.18	4	4.0	Erosion of natural deposits; discharge from fertilizer and aluminum factories; water additive that promotes strong teeth when at optimum levels between 0.7 and 1.3 ppm
Lead [point of entry] (ppb)	No	NA	NA	NA	NA	NA	NA	NA	15	Residue from man-made pollution such as auto emissions and paint; lead pipe, casing, and solder
Mercury [inorganic] (ppb)	No	NA	NA	NA	NA	NA	NA	2	2	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills; runoff from cropland
Nickel (ppb)	No	02/01/2013	2.6	0.7–2.6	1/2013	2.7	1.8–2.7	NA	100	Pollution from mining and refining operations; natural occurrence in soil
Nitrate [as Nitrogen] (ppm)	No	02/01/2013	0.16	0.04–0.16	1/2013	0.37	0.25–0.37	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Nitrite [as Nitrogen] (ppm)	No	NA	NA	NA	NA	NA	NA	1	1	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Selenium (ppb)	No	02/01/2013	4.6	1.7–4.6	1/2013	1	ND–1	50	50	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines
Sodium (ppm)	No	02/01/2013	58	16–58	1/2013	22.2	9.94–22.2	NA	160	Salt water intrusion; leaching from soil
Thallium (ppb)	No	NA	NA	NA	NA	NA	NA	0.5	2	Leaching from ore-processing sites; discharge from electronics, glass, and drug factories
Synthetic Organic Contaminants including Pesticides and Herbicides										
Dalapon (ppb)	No	02/01/2013; 4/11/2013; 8/1/2013; 10/04/2013	1.3	ND–1.3	1/2013; 4/2013; 8/2013	1.4	1.1–1.4	200	200	Runoff from herbicide used on rights of way

Radioactive Contaminants		Tampa Bay Water					
CONTAMINANT AND UNIT OF MEASUREMENT	MCL VIOLATION (YES/NO)	DATE OF SAMPLING (MO./ YR.)	LEVEL DETECTED	RANGE OF RESULTS	MCLG	MCL	LIKELY SOURCE OF CONTAMINATION
Alpha Emitters (pCi/L)	No	NA	NA	NA	0	15	Erosion of natural deposits
Beta/Photon Emitters (pCi/L)	No	7/2009	5.1	NA	0	50	Decay of natural and man-made deposits
Radium 226 + 228 [Combined Radium] (pCi/L)	No	4/2013	2.8	NA	0	5	Erosion of natural deposits
Uranium (ppb)	No	4/2013	1.3	NA	0	30	Erosion of natural deposits
Inorganic Contaminants							
Antimony (ppb)	No	4/2013; 7/2013; 10/2013	8.1	ND–8.1	6	6	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder
Arsenic[2] (ppb)	No	NA	NA	NA	NA	10	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Barium (ppm)	No	NA	NA	NA	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Cadmium (ppb)	No	4/2013	ND	NA	5	5	Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries and paints
Chromium (ppb)	No	NA	NA	NA	100	100	Discharge from steel and pulp mills; erosion of natural deposits
Cyanide (ppb)	No	NA	NA	NA	200	200	Discharge from steel/metal factories; discharge from plastic and fertilizer factories
Fluoride (ppm)	No	NA	NA	NA	4	4.0	Erosion of natural deposits; discharge from fertilizer and aluminum factories; water additive that promotes strong teeth when at optimum levels between 0.7 and 1.3 ppm
Lead [point of entry] (ppb)	No	1/2013; 4/2013; 11/2013	13	ND–13	NA	15	Residue from man-made pollution such as auto emissions and paint; lead pipe, casing, and solder
Mercury [inorganic] (ppb)	No	4/2013	ND	NA	2	2	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills; runoff from cropland
Nickel (ppb)	No	NA	NA	NA	NA	100	Pollution from mining and refining operations; natural occurrence in soil
Nitrate [as Nitrogen] (ppm)	No	NA	NA	NA	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Nitrite [as Nitrogen] (ppm)	No	2/2013; 4/2013; 7/2013; 10/2013	0.04	ND–0.04	1	1	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Selenium (ppb)	No	NA	NA	NA	50	50	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines
Sodium (ppm)	No	NA	NA	NA	NA	160	Salt water intrusion; leaching from soil
Thallium (ppb)	No	4/2013	ND	NA	0.5	2	Leaching from ore-processing sites; discharge from electronics, glass, and drug factories
Synthetic Organic Contaminants including Pesticides and Herbicides							
Dalapon (ppb)	No	NA	NA	NA	200	200	Runoff from herbicide used on rights of way

Stage 1 Disinfectants and Disinfection By-Products

CONTAMINANT AND UNIT OF MEASUREMENT	MCL VIOLATION (YES/NO)	City of Clearwater: DATE OF SAMPLING (MO./YR.)	City of Clearwater: LEVEL DETECTED	City of Clearwater: RANGE OF RESULTS	Pinellas County Utilities: DATE OF SAMPLING (MO./YR.)	Pinellas County Utilities: LEVEL DETECTED	Pinellas County Utilities: RANGE OF RESULTS	Tampa Bay Water: DATE OF SAMPLING (MO./YR.)	Tampa Bay Water: LEVEL DETECTED	Tampa Bay Water: RANGE OF RESULTS	MCLG OR [MRDLG]	MCL OR [MRDL]	LIKELY SOURCE OF CONTAMINATION
Bromate (ppb)	No	NA	NA	NA	NA	NA	NA	1/2013–2/2013; 6/2013–12/2013	2.69	ND–5.7	0	10	By-product of drinking water disinfection
Chloramines (ppm)	No	1/2013–5/2013; 7/2013–8/2013; 10/2013–12/2013	3.1	0.1–4.8	1/2013–12/2013	3.8	0.8–5.9	NA	NA	NA	[4]	[4.0]	Water additive used to control microbes
Chlorine (ppm)	No	6/2013; 9/2013	3.1	0.7–4.5	1/2013–12/2013	3.8	0.8–5.9	NA	NA	NA	[4]	[4.0]	Water additive used to control microbes

CONTAMINANT AND UNIT OF MEASUREMENT	ACUTE VIOLATIONS (YES/NO)	Tampa Bay Water: DATE OF SAMPLING (MO./YR.)	NONACUTE VIOLATIONS (YES/NO)	LEVEL DETECTED	MRDLG	MRDL (AT THE ENTRANCE TO THE DISTRIBUTION SYSTEM)	LIKELY SOURCE OF CONTAMINATION
Chlorine Dioxide[3] (ppb)	No	1/2013–6/2013; 11/2013–12/2013	NA	573	800	800	Water additive used to control microbes

CONTAMINANT AND UNIT OF MEASUREMENT	MCL VIOLATION (YES/NO)	Tampa Bay Water: DATE OF SAMPLING (MO./YR.)	HIGHEST MONTHLY AVERAGE (THREE SAMPLE SET COLLECTED IN THE DISTRIBUTION SYSTEM)	HIGHEST AVERAGE (THREE SAMPLE SET) FOLLOWING A DAILY MCL VIOLATION AT THE ENTRANCE TO THE DISTRIBUTION SYSTEM	MCLG	MCL	LIKELY SOURCE OF CONTAMINATION
Chlorite (ppm)	No	1/2013–12/2013	0.0070	NA	0.8	1.0	By-product of drinking water disinfection

CONTAMINANT AND UNIT OF MEASUREMENT	TT VIOLATION (YES/NO)	Tampa Bay Water: DATE OF SAMPLING (MO/YR)	ANNUAL AVERAGE MONTHLY REMOVAL RATIO OR LOWEST ANNUAL AVERAGE MONTHLY REMOVAL RATIO	RANGE OF MONTHLY REMOVAL RATIOS	MCLG	MCL	LIKELY SOURCE OF CONTAMINATION
Total Organic Carbon[4] (ppm)	No	1/2013–6/2013; 11/2013–12/2013	3.79	3.32–4.0	NA	TT	Naturally present in the environment

Stage 2 Disinfectants and Disinfection By-Products

CONTAMINANT AND UNIT OF MEASUREMENT	MCL VIOLATION (YES/NO)	City of Clearwater: DATE OF SAMPLING (MO./YR.)	City of Clearwater: LEVEL DETECTED	City of Clearwater: RANGE OF RESULTS	Pinellas County Utilities: DATE OF SAMPLING (MO./YR.)	Pinellas County Utilities: LEVEL DETECTED	Pinellas County Utilities: RANGE OF RESULTS	MCLG	MCL	LIKELY SOURCE OF CONTAMINATION
Haloacetic Acids (five) [HAA5]–Stage 2 (ppb)	No	2013	38	11–52	2013	43	5.4–63.9	NA	60	By-product of drinking water disinfection
TTHM [Total trihalomethanes]–Stage 2 DDBP (ppb)	No	2013	73	51–89	2013	56.4	19.4–73.1	NA	80	By-product of drinking water disinfection

Lead and Copper (Tap water samples were collected from sites throughout the community)

CONTAMINANT AND UNIT OF MEASUREMENT	AL EXCEEDANCE (YES/NO)	City of Clearwater: DATE OF SAMPLING (MO./YR.)	City of Clearwater: 90TH PERCENTILE RESULT	City of Clearwater: NO. OF SAMPLING SITES EXCEEDING THE AL	Pinellas County Utilities: DATE OF SAMPLING (MO./YR.)	Pinellas County Utilities: 90TH PERCENTILE RESULT	Pinellas County Utilities: NO. OF SAMPLING SITES EXCEEDING THE AL	MCLG	AL (ACTION LEVEL)	LIKELY SOURCE OF CONTAMINATION
Copper [tap water] (ppm)	No	8/2011–9/2011	0.593	0	6/2011–7/2011	0.498	0	1.3	1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead [tap water] (ppb)	No	8/2011–9/2011	3	0	6/2011–7/2011	1.4	0	0	15	Corrosion of household plumbing systems; erosion of natural deposits

[1] Turbidity is a measure of the cloudiness of the water. It is monitored because it is a good indicator of the effectiveness of the filtration system. High turbidity can hinder the effectiveness of disinfectants. The result in the lowest monthly percentage column of the contaminant table is the lowest monthly percentage of samples meeting the turbidity limits reported in the Monthly Operating Report.

[2] While your drinking water meets the U.S. EPA's standard for arsenic, it does contain low levels of arsenic. The EPA's standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. The EPA continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

[3] For chlorine dioxide, the level detected is the highest single measurement collected at the entrance to the distribution system. Acute MRDL violation: If any daily sample taken at the entrance to the distribution system exceeds the MRDL, and on the following day one or more of the three samples taken in the distribution system exceed the MRDL, then the system is in violation. In addition, failure to take samples in the distribution system the day following an exceedance of the chlorine dioxide MRDL at the entrance to the distribution is also considered an acute MRDL violation. Nonacute MRDL violation: If any two consecutive daily samples taken at the entrance to the distribution system exceed the MRDL and all distribution system samples are less than the MRDL, the system is in violation of the MRDL.

[4] The monthly TOC removal ratio is the ratio between the actual TOC removal and the TOC rule removal requirements.

Definitions

AL (Action Level): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

IDSE (Initial Distribution System Evaluation): An important part of the Stage 2 Disinfection Byproducts Rule (DBPR). The IDSE is a one-time study conducted by water systems to identify distribution system locations with high concentrations of trihalomethanes (THMs) and haloacetic acids (HAAs). Water systems will use results from the IDSE, in conjunction with their Stage 1 DBPR compliance monitoring data, to select compliance monitoring locations for the Stage 2 DBPR.

LRAA (Locational Running Annual Average): The average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters.

MCL (Maximum Contaminant Level): The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

MCLG (Maximum Contaminant Level Goal): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

MRDL (Maximum Residual Disinfectant Level): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

MRDLG (Maximum Residual Disinfectant Level Goal): The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

NA: Not applicable

ND (Not detected): Indicates that the substance was not found by laboratory analysis.

NTU (Nephelometric Turbidity Units): Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

pCi/L (picocuries per liter): A measure of radioactivity.

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppm (parts per million): One part substance per million parts water (or milligrams per liter).

TT (Treatment Technique): A required process intended to reduce the level of a contaminant in drinking water.

City of Clearwater
Public Communications, Post Office Box 4748, Clearwater, Florida 33758-4748
100 South Myrtle Avenue, Clearwater, Florida 33756
Telephone (727) 562-4284 Fax (727) 562-4696

FOR IMMEDIATE RELEASE
May 13, 2014

Contact:
Heather Parsons
(727) 562-4708

Public Works Day Features Competition of North Pinellas Utility Professionals

CLEARWATER, Fla. -- The City of Clearwater invites residents to attend Public Works Day on Thursday, May 22 from 8:30 a.m. to 3 p.m., Public Works Complex, 1650 N. Arcturas Ave. in Clearwater. This free, family-friendly event features the 2nd annual North Pinellas Top Ops Competition, in which utility and field crews from Pinellas County compete for top honors among local industry professionals. The event also includes free tours of the city's groundwater replenishment pilot plant, demonstrations, and vehicle and equipment displays to show the importance of public works in community life.

The North Pinellas Top Ops Competition will include teams and individual competitors from the cities of Clearwater, Dunedin, Largo, Oldsmar, Pinellas Park, Safety Harbor, and Tarpon Springs, and the town of Belleair and Pinellas County. Formal competitions begin at 8 a.m. and go to 1 p.m., and include: **Best Tasting Water Contest** (utilities compete in a judged taste test), **Hard Tap** (open a ductile iron pipe/install a tap), **Fun Tap** (open a PVC pipe/install a tap), **Meter Madness** (assemble a water meter from a bucket of parts), **Backhoe Egg Drop** (place an egg in a 5-gallon bucket), **Vac Truck Basketball** (make a basket with a basketball/hoop), **Wastewater Operator Challenge** ("college-bowl" style Q&A), **Water Operator Challenge** ("college-bowl" style Q&A), **Admin Challenge** (same as backhoe), and a **Hot Dog Eating Contest**. Residents are invited to cheer on the teams and participate in the **Best Motorcycle Contest** and open **Volleyball** and **Corn Toss** games.

Tours of the groundwater replenishment pilot plant will be available at 10 a.m. to 1 p.m. Shuttles by van will be available to and from the facility by licensed CDL city drivers. The city, Southwest Florida Water Management District, and consultants are currently in the pilot demonstration phase to determine the feasibility of groundwater replenishment technology in Clearwater. This project, if implemented in a full-scale facility, would improve water levels within the aquifer. To learn more about this important project, visit myclearwater.com/groundwater.

Tracy Mercer, Public Utilities Director, will be presented with a national award in honor of being named one of American Public Works Association's Top Ten Leaders of the Year for 2014. Her award will be presented during the Top Ops Award Ceremony scheduled to begin around 1 p.m. Cake reception to follow.

(more)

City of Clearwater
Public Communications, Post Office Box 4748, Clearwater, Florida 33758-4748
100 South Myrtle Avenue, Clearwater, Florida 33756
Telephone (727) 562-4284 Fax (727) 562-4696

"Public works is an integral, necessary part of life in the Clearwater community through services such as water, sewer, reclaimed water, stormwater, traffic engineering, sidewalks, and streets and highways," says Tracy Mercer, Public Utilities Director. "Today, public works employees are in the forefront of using the best sustainable practices to ensure our environment and infrastructure is well maintained for the public's use and enjoyment in the future."

The Top Ops Competition is hosted by the City of Clearwater and is supported by North Pinellas Municipal Utilities Forum. To learn more, call (727) 562-4960.

# # #

2nd Annual North Pinellas TOP OPS Competition 2014

May 22, 2014

Hosted by City of Clearwater.

Sponsored by industry businesses and supported by the cities of Dunedin, Largo, Oldsmar, Pinellas Park, Safety Harbor, St. Petersburg, Tarpon Springs, Town of Belleair, and Pinellas County.

Welcome

I would like to take this opportunity to thank the planning committee, city staff and our sponsors who have been working so hard to put the Public Works Day and Top Ops Competition together for 2014.

Thank you to the contestants, judges, photographers, musicians, food preparers, and everyone who encouraged, supported, participated in and attended this event; your responses and contributions have been overwhelming. It is great to have participants from more than nine different cities come together as a team.

We're pleased to host this event again this year and thank each of you for making this Annual Public Works Day and 2nd Annual Top Ops Competition possible.

Sincerely,

Tracy Mercer

Tracy Mercer, Director
Clearwater Public Utilities

2nd Annual North Pinellas TOP OPS Competition 2014

May 22, 2014

Groundwater Replenishment Pilot Plant Tours & Demonstration

The City of Clearwater currently is looking at using purified water to replenish local groundwater supplies, with the goal of helping to ensure the availability of more drinking water in the future. This project – if implemented – could potentially improve groundwater levels within the city so more drinking water will be available.

A study is underway that will determine how much the groundwater level can be improved by directly adding up to three million gallons a day of purified water into a brackish water zone below the freshwater zone of the Upper Floridan aquifer. A 2011 feasibility study concluded this groundwater replenishment project to be safe and economical. The city is currently in the pilot and demonstration phase of the study. A small-scale pilot plant went online in June 2013, and is producing results that will indicate whether a full-scale plant is feasible and safe.

The study is cooperatively funded by the Southwest Florida Water Management District. Informational presentations are available for neighborhood and civic associations by calling (727) 562-4960. For project information, visit *www.myclearwater.com/groundwater.*

Take a Tour! *(Tour at 10 a.m. and 1 p.m.)*

Tours of the groundwater replenishment pilot plant are available on Public Works Day either on-site at 3290 State Route 580 in Clearwater or by roundtrip shuttle by van from the Public Works Complex.

Please join us...

Groundwater Replenishment Pilot Plant

Tours & Demonstrations

Hosted by:

Clearwater Public Utilities

Thursday, May 22, 2014

9 a.m. to 2 p.m.

3290 State Route 580, Clearwater

Pilot plant tours and demonstrations are offered on-site and as part of the City of Clearwater's Public Works Day & Top Ops Competition. Roundtrip shuttles by van will be available from the Public Works Complex, 1650 N. Arcturas Ave., Clearwater.

CITY OF Clearwater

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Clearwater Groundwater Replenishment Program – Pilot Tours May 22nd, 2014
Sign-In Sheet

NAME	E-MAIL ADDRESS
Emilie Moore	emilie.moore@tetratech.com
Robert Peterson	RobertPeterson@watermatters.org
Jerry Mallams	Jerry.Mallams@watermatters.org
Kelley Bartwright	Kelley.M.Bartwright2@dep.state.fl.us
Jeff Tronmer	jtronmer@lbgtampa.com
David Wile	dwiley@lbgtampa.com
David MacNevin	dave.macnevin@tetratech.com
Nan Bennett	Nan.Bennett@myclearwater.com
Ed Chesney	city
Chuck Lane	"
Adelaida Cruz	adela.@hotmail.com
Cassie Rovissilla	CassieRovissilla@gmail.com
Belinda PI.	BelindaPi24@gmail.com
Charlene Mayfield	
Robert Bradway	Robertbradway@live.com
Justina Cruz	justinacrz@gmail.com
Corinne Arnold	arnoldco@pcsb.org
Cheryl Shaver	shaverc@pcsb.org
Alice Varkey	alicemvarkey@gmail.com
Laurie Reed	Laurie.Reed@me.com
Susie Mikelonis	~~Susan~~ Samseagoll1@me.com
Breighton Reed (a)	
~~Emmerson~~ Reed (6)	
Todd Pressman	Todd@pressmaninc.com
Chris Kuyler	CKuyler@kingengineering.com
Jamie Fish	jamie.fish@yahoo.com
Scott Bennett	SL_bennett@yahoo.com
CEO Robinson	leorobins2004@yahoo.com
Linda Varonich	lvaronich@gmail.com
Michael Vacca	Mike.Vacca@myclearwater.com
Brad Weiss	WeissT@HillsboroughCounty.org

May 2014

Clearwater's Groundwater Replenishment Project

Frequently Asked Questions

The City of Clearwater is working to ensure the future of our water. Clearwater Utility professionals treat and deliver an average of 11.5 million gallons of drinking water and nearly seven million gallons of reclaimed water to customers each day. Preserving our valuable water resources is an important part of this industry, and one we take seriously. The city is currently in the pilot and demonstration phase of groundwater replenishment technology to see if it is right for Clearwater.

What is groundwater replenishment?

Groundwater replenishment, also known as aquifer recharge, is used to improve water levels within the aquifer and provide additional water supplies. The city's Groundwater Replenishment Program is a two-step program that includes purifying reclaimed water to better-than-drinking-water standards and recharging an aquifer using the purified water. Aquifer recharge is safely used throughout the country and the world.

What is this project all about?

The city is currently in the pilot and demonstration phase of the project to see if groundwater replenishment is a viable option in Clearwater. This phase includes the construction and operation of a small-scale version of the proposed water purification plant, or pilot, at the Northeast Water Reclamation Facility. The pilot takes reclaimed water and treats it using various purification processes to create purified water. This purified water is the proposed water to be injected back into a brackish water interval of the aquifer.

The ongoing pilot and demonstration phase of the study is two-fold: 1) underground hydrologic testing and analysis, and 2) a one-year operation of a small-scale purification plant to evaluate the process and water treatment options. This phase will help determine the anticipated water level improvements from recharging up to 3 million gallons per day (MGD) of purified water into a brackish water interval of Lower Zone A of the Upper Floridan aquifer. Additionally, this phase will help demonstrate the effectiveness of the water purification treatment process.

If the pilot and demonstration phase of this project proves feasible, it is anticipated that the city will continue to move forward with the Groundwater Replenishment Project and build the full-scale facility (up to 3 MGD capacity), with funding support from the Southwest Florida Water Management District (District). This project is one of several projects in the city's Integrated Water Management Strategy Program.

What is the project's goal?

The goal of the project is to see if it is viable to replenish the aquifer for future safe yields of groundwater for drinking water supply and to ensure the availability of more drinking water in the future. The city, the District, and project team members are currently studying the potential to improve water levels within the City of Clearwater and to evaluate the potential for additional withdrawals from their existing wellfields.

Who will this project affect?

This project will potentially affect groundwater well users within the northeastern portion of the City of Clearwater, in the northern part of Pinellas County. Recharging the aquifer with purified water will help keep the water within the aquifer fresher and help maintain and improve existing groundwater levels.

Where does my water come from, and where is it going in regard to this project?

Only one percent of the world's water is accessible fresh water that can be used for drinking water, and that water has been reused over and over again for millions of years. Water is used by people and animals and then it returns to our rivers, lakes and aquifers, where it is withdrawn, treated, and used again.

Clearwater's drinking water comes from a groundwater source called the Floridan Aquifer, which sits on top of a layer of brackish, or somewhat salty, water. This aquifer is one of the major sources of groundwater in the United States and underlies all of Florida, southern Georgia, and small parts of adjacent Alabama and South Carolina. Clearwater customers use about 11.5 million gallons of potable water daily. Approximately 60 percent is pumped from 31 city-owned and operated groundwater wells; the remaining daily demand is supplied by water purchased from Pinellas County Utilities. The freshwater resource can be protected by balancing the recharge of the aquifer level and water withdrawals, protecting the fresh water from becoming salty.

When did the pilot plant go online, and where is it located?
The one-year operation of the pilot plant began June 3, 2013. Testing and analysis was conducted on a rigorous basis to ensure the water purification process produced purified water that meets regulations and can safely be used as a source of water to recharge the aquifer. The pilot plant is located at the city's Northeast Water Reclamation Facility, which is also where a full-scale plant would be located.

How pure is purified water? How is it made?
Clearwater Public Utilities stays abreast of advancements in technology, health science, and government regulations in order to provide a constant, safe supply of water. Today's technologies have the capability to purify reclaimed water to safely replenish the aquifer. The purified water is made by passing the reclaimed water through four water treatment processes, including ultrafiltration (UF), reverse osmosis (RO), an advanced oxidation process (AOP) of hydrogen peroxide addition upstream of ultraviolet (UV) treatment, and membrane contactors. These combined processes provide a multiple barrier treatment approach and remove pathogens, inorganic and organic compounds, and very small molecular weight compounds called microconstituents (e.g., sucralose, caffeine), creating a purified water. This purified water is then conditioned so that it will blend well with the groundwater in the existing aquifer.

Is it safe? If so, can you prove it?
Yes. A 2011 feasibility study concluded this groundwater replenishment project to be safe and economical. The results from the recent one-year (June 2013 – June 2014) pilot and demonstration phase have further concluded that the project is safe and economical. The City of Clearwater and the District will only recommend implementing this project if it is safe for people and the environment.

What kind of testing is involved?
Clearwater routinely collects and tests water samples long before it reaches your water tap, and it will be no different with this project. Monitoring and testing is a large part of this pilot and demonstration phase. The purified water from the pilot plant is being tested on an hourly, daily, weekly, monthly and quarterly basis for a period of one year. Results are being compiled and analyzed during and after the pilot plant operation. Limestone cores were tested for metals leachability using treated water from the pilot plant. The results of these tests will be used to evaluate the effectiveness of the treatment processes to prevent metals mobilization in the aquifer. A six-month recharge test using potable groundwater is being performed to collect data regarding the ability of the aquifer to accept the recharge water, and the travel time of injected water in the recharge interval.

What did the test results show?
The test results show that the pilot plant successfully and consistently purified the source reclaimed water to better-than-drinking-water standards.

How will the water be injected into the aquifer?
At least five recharge wells will be utilized to introduce the purified water into the aquifer. A pipeline from the water purification plant will deliver the purified water to these wells.

Is this a toilet-to-tap project?
No. The source of water supply for the water purification plant is reclaimed water (tertiary treated wastewater). Reclaimed water will be treated by the water purification plant to better-than-drinking-water standards. This purified water will be conditioned and then used for aquifer recharge.

Signs are posted around the city not to drink reclaimed water. So why is it safe to inject treated water into the aquifer and later to drink?
The water that will be injected into the ground is purified water, which is reclaimed water that has been treated to better-than-drinking-water standards using advanced treatment technologies. This is a safe and permittable process that meets federal and state regulations.

Who supports, monitors, and approves this project? Who makes up the project team?
This project is cooperatively funded by the District, which provides support and funding for local government projects to beneficially use reclaimed water to help meet the region's water supply needs. The project also is under review by the Florida Department of Environmental Protection. The project team includes Tetra Tech (Engineering Consultant) and Leggette, Brashears & Graham Inc. (Hydrogeology Consultant). The project team has been actively involved in public outreach with residents in and around the city and also with municipalities within the northern Pinellas County area.

What other groups or cities have or are developing projects like this?
Orange County, California has an existing groundwater replenishment project. Cloudcroft, Arizona and Big Spring, Texas both have active potable reuse projects. Two additional cities in Texas, Brownwood and Wichita Falls, are actively developing their potable reuse projects. In Florida, some cities have piloted potable reuse projects and are investigating next steps.

What regulations are in place to ensure this project is safe?
State rules regulating potable reuse include Florida Administrative Code (F.A.C.) 62-600. Additionally, there are potable reuse guidelines as developed by the California Department of Public Health (CDPH) that are being utilized to ensure that this project is safe.

When will the water purification plant be built, and when will purified water be replenishing the aquifer?
The anticipated construction start date for the full-scale water purification plant is 2016. The purified water is expected to be injected into the aquifer beginning in 2017.

What are the costs, and who is paying?
Current preliminary project capital costs are about $29 million for the water purification plant and the groundwater recharge well system. The project costs will be paid by the City of Clearwater. The District has responded favorably to continued grant funding support of this project.

Learn more about Clearwater's Groundwater Replenishment Project
Today's treatment technologies are highly advanced and can purify reclaimed water to better-than-drinking-water standards. To learn more, log on to myclearwater.com/groundwater. Informational presentations are available for neighborhood and civic associations by calling (727) 562-4960.

Tampa Bay Times

The ultimate in recycling: drinking water from wastewater

Mike Donila, Times Staff Writer

Saturday, May 24, 2008 6:49pm

In the coming months, Clearwater's city manager and the mayor will stand together in the City Council chamber and toast each other with glasses of water.

This won't be typical tap water. It will be wastewater. Purified wastewater, but wastewater just the same.

You read that correctly. They'll drink water that probably came from a Clearwater toilet.

They didn't lose a bet. It will be an effort to persuade Clearwater residents that their city should join other communities that are transforming wastewater into potable water.

iStockphoto

The biggest problem will be convincing critics, who have dubbed the process "toilet to tap," that the water will remain safe and drinkable.

Why?

Proponents say recycling wastewater takes pressure off the aquifer, cuts the amount of wastewater running into local waters and eventually trims water bills.

It won't be easy to implement. The permitting process alone takes about five years. And the total cost is unknown.

But the biggest problem will be convincing critics, who have dubbed the process "toilet to tap," that their water will remain safe and drinkable.

"We're going to have to drink a glass to demonstrate the credibility to our discussions," City Manager Bill Horne said. "We're not trying to get sensational headlines. This is a legitimate topic, so to show how serious we are and that it's not harmful, I'll have to drink it."

Clearwater's plan is to treat the wastewater, then inject it into the ground to recharge the aquifer, the state's main source for drinking water, and return it to residents.

City leaders have asked its engineers to study other localities that have adopted the process, particularly Orange County, Calif.

But, they realize, not everyone is going to buy into it.

"The jury is out as long as the science is out," said Council member Paul Gibson, adding that he would let Mayor Frank Hibbard take the first sip. "I think a lot of people will have a considerable problem with this, despite what the science may say."

• • •

Recycling wastewater isn't a new concept, but only recently has it been tried at the level Clearwater is considering.

For decades, cities have used reclaimed water for crops and lawns. And Tampa Bay Water, which delivers 182-million gallons of water a day to the region, started desalinating ocean water in 2003, blending it with the water supply that serves Hillsborough, Pinellas and Pasco counties.

In California, where energy and water supplies are low, Orange County has become a trailblazer in a concept it calls "indirect potable reuse" or "ground water replenishment." Officials there cringe at the phrase "toilet to tap."

In January, the county opened the world's largest water-purification project, a $500-million plant that pumps 35-million gallons a day and serves 500,000 residents, about 20 percent of the area's customers. The county plans to upgrade next year and pump 70-million gallons a day.

"It actually produces near-distilled water," said Shivaji Deshmukh, program manager for Orange County's groundwater replenishment system.

The county offset the price tag with $90-million in grants, but it costs about $29-million a year to run. But, officials say, customers can eventually expect cheaper water bills.

Here's how it works: Once the county's sanitation district treats the wastewater, it is processed through a microfilter to remove any solids or bacteria, according to Deshmukh. Then it goes through a reverse-osmosis treatment to remove any viruses, drugs or contaminants. It is then targeted with ultraviolet light and hydrogen peroxide to remove anything missed.

Next, the district pumps it into a basin. The water takes about six months to reach residents.

In Clearwater, Robert Fahey, the city's utilities engineering manager, says the city has the equipment to upgrade wastewater to potable water, but needs at least four injection wells so the treated water can reach the aquifer. Each well could cost between $500,000 and $1-million.

"I have every confidence that we can do this and make it safe," he said.

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Other Florida localities are considering similar measures.

Miami-Dade County spent $350-million on a facility after the state said it couldn't tap more than 347-million gallons a day from the aquifer. County leaders say they need an additional 74-million gallons a day.

Their plant will allow them to pump 23-million gallons, said Frank Calderon, spokesman for the Miami-Dade Water and Sewer Department. In return, the state will let them match that from the aquifer.

The system won't be operational until 2014, and the purified wastewater won't actually reach a kitchen faucet until four years later because of the time it takes to run through the area's limestone aquifer.

Floridians use 6.5-billion gallons of water a day, and proponents of recycling wastewater say the move will relieve the aquifer, which environmentalists say is growing low, particularly in South Florida.

Proponents also say it's cheaper than desalinating water, which uses a lot of energy. And because it's reusable, consumers could see cheaper water bills.

In Clearwater, residents consume 12-million gallons of potable water a day. The city buys two-thirds of it from Pinellas County for $2.86 per 1,000 gallons. Transforming wastewater would reduce the city's reliance on the county.

Additionally, the project would provide an opportunity for future growth without putting a strain on resources "and at a cost not borne by the consumer," said Charles Pattison, executive director of 1,000 Friends of Florida, a Tallahassee-based nonprofit growth management watchdog that studies environmental issues.

But the plan has its critics.

The "gross-out factor" aside, some say the process is subject to human error, and they are concerned the filtration process may not eliminate dangerous contaminants.

They suggest water conservation is the best way to save money and help the environment.

"I don't have enough faith in engineers to drink dog dip and embalming fluids," said Thomas W. Reese, a St. Petersburg attorney who specializes in environmental law and water issues.

Reese says "not much has changed" since the National Research Council, a nonprofit institute that provides health policy advice, issued a 1998 report that said recycling wastewater should be a last option.

But proponents, such as Newport, Calif., internal medicine physician Jack Skinner, who is on the state's drinking water evaluation committee, say significant strides have been made. Skinner said the advancement of reverse osmosis and ultraviolet light treatment removes any dangers.

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Regardless of the safety issues, governments have to find ways to sell the concept to the public.

And even after that, implementation isn't quick.

The Florida Department of Environmental Protection, realizing more than five years ago that governments may turn to recycling wastewater as the state faces water shortages, established a number of treatment requirements before the water can be injected into the aquifer.

"It's going to have to meet high levels of disinfection — it's got to be very clean water," said Sharon Sawicki, a professional engineer administrator for the domestic wastewater section for the DEP.

She said the process, which requires a pilot program and frequent inspections, could take five years before permits are issued.

But before that, Sawicki recommends governments meet with the public so people know what's going on.

California and Miami-Dade officials say they launched extensive education programs before initiating their projects. But, Deshmukh concedes, "some people are still uneasy about it."

He's right. Clearwater Beach resident and jeweler Suzanne Boschen said she "might drag a glacier home before drinking it."

"For lawns and golf courses, sure, it's fine, but not for something we put into our bodies that's so critical," she said. "It's going to take a lot of data for this one (to be accepted)."

Clearwater leaders acknowledge the concerns, so they'll take the first drink. The plan is to treat a couple of glasses of wastewater on site, without going through the aquifer, so residents can see they're serious.

"It's provocative and challenging for the public to embrace, but in reality it exists and is being used in other communities," Horne said. "Therefore, couldn't it be used in our community?"

Times researcher Caryn Baird contributed to this report.

The ultimate in recycling: drinking water from wastewater 05/24/08

Clearwater Florida
Groundwater Replenishment Planning/Outreach Workshop

AGENDA
July 16, 2010

Location
Public Utilities - 1650 N. Arcturas Ave., Bldg A

Facilitator
John Ruetten - Resource Trends, Inc.

July 16, 2010

8:30 – 8:45 **Opening Remarks – Objectives**
- Fair Consideration of GWR Using Reclaimed Water
- Keeping Things Simple, Effective, and Cost Effective

8:45 – 9:15 **Review of Branding Principles – Why Branding?**
- Value, Trust, Market Share, and Price
- The Power of Branding
- Branding of Utilities, Tap Water, and Reclaimed Water
- Proper Definition and "Positioning" of Reclaimed Water

9:15 – 9:45 **Groundwater Replenishment Best Practices**
- Investing in Water Reliability
- Creating Water Quality Confidence
- Managing Disagreement and Conflict
  - Vocal Opponents, Growth, Embracing Conflict
- Ensuring Good Policy Decisions
  - Meeting the Needs of Elected Officials, Policy Makers

9:45 – 10:15 **Outreach that Focuses on Policy Decisions and Policy Makers**
- Focused Relationship Building – Not Just Brochures
- Listening and Sharing Feedback with Policy Makers

10:15 – 10:30 **Break**

10:30 – 10:45 **Case Study Review**
- San Diego, Tampa, Dublin San Ramon
- Scottsdale, Orange County, Fairfax County Virginia
- Los Angeles Department of Water and Power

10:45 – 11:45 **Discussion of Clearwater Issues**
- Need for GWR – Investment in Water Resources
- Reputation of Sponsoring Utility – The Source of Quality
- Previous Negative Branding or City Conflicts
- ??????

11:45 – 12:00 **Wrap-Up and Next Steps**

Protecting Our Water: Proper Disposal of Medication

The City of Clearwater's water supply currently meets or exceeds all Federal, State, and local drinking water standards. The city is committed to protecting public health and water quality. Know that the proper disposal of medications can help alleviate the issue of trace amounts of pharmaceuticals that have been detected in drinking water systems around the country. Dispose of old, expired, or unused medications carefully. Your local pharmacy or medical provider may have "take back" programs. The City of Clearwater, in partnership with Clearwater Police and the Pinellas County Sheriff's Office, often hold take-back programs for safe drug disposal. If not, the Florida Department of Environmental Protection recommends disposing of medications just as you dispose of solid waste. Make sure that people or animals do not accidentally ingest such medications. For more detailed information, visit www.dep.state.fl.us/waste/categories/medications/default.htm.

Community Participation Is Welcome

You are invited to participate in our regularly scheduled meetings. The City of Clearwater Council normally meets at 6:00 p.m. on the first and third Thursdays of each month at City Hall, 112 S. Osceola Avenue, Clearwater, Florida. The meeting agendas are published on the city's web site at www.myclearwater.com. For more information, call (727) 562-4090.

The Pinellas County Board of County Commissioners meets typically twice a month, on the first and third Tuesdays of the month. The earlier meeting begins at 9:30 a.m. Meetings in the latter part of the month are held in two parts. Agenda items are discussed with the Board at 3:00 p.m., after which there is a break and the Board reconvenes at 6:00 p.m. The public is invited to attend. For more information, call (727) 464-3000.

Tampa Bay Water's Board of Directors meetings occur on the third Monday of every other (even) month at 9:00 a.m. at Tampa Bay Water, 2575 Enterprise Road, Clearwater, Florida 33763. For more information, visit their web site at www.tampabaywater.org or call (727) 796-2355.

Substances That Could Be in Water

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include: Microbial Contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife. Inorganic Contaminants, such as salts and metals, which can be naturally occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming. Pesticides and Herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses. Organic Chemical Contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production and can also come from gas stations, urban stormwater runoff, and septic systems. Radioactive Contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, the U.S. EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at (800) 426-4791.

Source Water Assessment

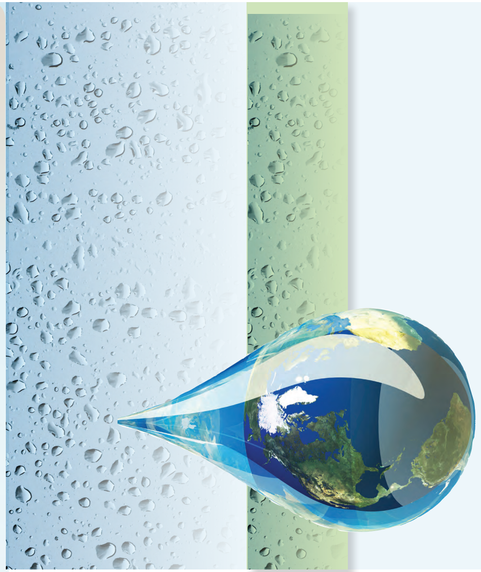
In 2011, the Department of Environmental Protection performed a Source Water Assessment on the City of Clearwater, Tampa Bay Water (TBW), and Pinellas County utility systems. The assessment was conducted to provide information about any potential sources of contamination in the vicinity of our wells. The well water source is considered to be at low to moderate risk due to potential sources of contamination such as gas stations and waste cleanup sites present in the assessment area. The assessment of the Tampa Bay Water surface water intakes indicates that they are considered to be at high risk because of the many potential sources of contamination present in the assessment area. The complete assessment results are available on the FDEP Source Water Assessment and Protection Program Web site at www.dep.state.fl.us/swapp or they can be obtained from Tampa Bay Water, 2575 Enterprise Road, Clearwater, FL, 33763, or by phone at (727) 796-2355.

Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants may be particularly at risk for infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791 or http://water.epa.gov/drink/hotline.

Lead in Home Plumbing

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The city is responsible for providing high-quality drinking water, but we cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at www.epa.gov/safewater/lead.



Annual WATER QUALITY REPORT

Reporting Year 2011

Presented By City of Clearwater

PWS ID#: FL6520336

City of Clearwater
P.O. Box 4748
Clearwater, FL 33758-4748

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Dear City of Clearwater Water Consumer:

This report presents important information about the City of Clearwater's drinking water quality. It also discusses our water supplies, commitment, and methods to producing drinking water you can trust, delivered to your tap every day. Additionally, you will find information on how to participate in water system improvements and decision-making processes.

Our trained, licensed water professionals are committed to producing high-quality drinking water that meets or exceeds all regulatory standards. Our Engineering and management staff strive to maintain a modern, proactively-maintained and reliable water system by employing a forward-thinking approach in anticipating future community needs and regulations.

The City of Clearwater routinely monitors for contaminants in your drinking water according to Federal and State laws, rules and regulations. This report is based on the results of monitoring from Jan.1 to Dec. 31, 2011.

If you have any questions, contact Greg Turman, Water Production Coordinator, at (727) 562-4960 if you have questions about this report.

Where Does My Water Come From?

City of Clearwater residents use approximately 11.5 million gallons of potable water every day. Approximately 50% is pumped from City owned and operated groundwater wells; the remaining daily demand is supplied by water purchased from Pinellas County Utilities. The groundwater source for Clearwater comes from a groundwater supply called the Floridan Aquifer. This aquifer is one of the major sources of groundwater in the United States and underlies all of Florida, southern Georgia, and small parts of adjacent Alabama and South Carolina.

Pinellas County Utilities receives drinking water from Tampa Bay Water, a regional water supplier, which in turn becomes part of the water supplied to the residents of Clearwater. The water supplied by Tampa Bay Water is a blend of groundwater, treated surface water, and desalinated seawater. Eleven regional wellfields, pumping from the Floridan Aquifer, are the primary source for the regional groundwater supply. The Alafia River, the Hillsborough River, C.W. Bill Young Regional Reservoir, and the Tampa Bypass Canal are the primary supplies for the regional treated surface water supply. Hillsborough Bay is the primary supply of seawater for the regional desalinated supply. For more information on the Tampa Bay Water system, visit their website at www.tampabaywater.org.

The Future of Our Water

The City of Clearwater is working to improve the future of our water. Plans are currently underway to implement the ongoing construction of the reclaimed water distribution system; the expansion of our existing reverse osmosis water treatment plant; the design and construction of a second reverse osmosis water treatment plant; and looking at the feasibility of ground water replenishment technology. If you, your neighborhood, or civic association would like more information on any of these projects, call (727) 562-4960 or visit www.myclearwater.com.

Bring Reclaimed Water into Your Neighborhood

The City of Clearwater is expanding its reclaimed water system and is providing this valuable resource to residents all over the city. Projects in the Skycrest, Clearwater Harbor, Glen Oaks, and Palmetto neighborhoods are currently under construction, and neighborhoods such as Coachman Ridge, Lake Chautauqua, and Morningside already enjoy the many benefits of using reclaimed water.

If your neighborhood does not currently have reclaimed water service and you would like it, it is easy to initiate a project. Neighbors along the proposed pipeline would need to sign a Citizen-initiated Petition Form to express their interest in getting the service. More than 50% of participating property owners would be required for approval leading to construction. To learn more, call (727) 562-4960 or visit the reclaimed water website, www.myclearwater.com/reclaimed.

How Is My Water Treated?

The City of Clearwater has three Drinking Water Treatment Plants. RO Plant No. 1 is a 3 million gallon per day (GPD) Reverse Osmosis (RO) treatment plant. Raw water produced by wells withdrawing supply from the Upper Floridan Aquifer is filtered to remove iron and other suspended solids and then processed with RO to remove selected dissolved molecules, including hardness-causing salts. The water is disinfected using monochloramines, stabilized to protect the water distribution system, and the finished water is pumped to the consumer.

At Water Plants Nos. 2 and 3, raw water from the Upper Floridan Aquifer is blended with water supplied by Pinellas County Utilities, disinfected using monochloramines, and stabilized before being pumped to the consumer.

Plans are underway to expand the treatment capacity at RO Plant No. 1 to 4.5 million gallons per day, and to construct a new reverse osmosis water treatment plant at the current Water Plant No. 2 site. These improvements to the system will allow the city to produce more water from city-owned sources, increasing control over the water quality provided to City of Clearwater consumers, and controlling costs by reducing dependence on other sources.

Clearwater Investments in the Quality of Your Drinking Water

To produce high-quality, reliable drinking water, the City of Clearwater invests resources in the following categories:

Treatment Technology: The city uses Best Available Treatment (BAT) technologies to ensure that the drinking water delivered to our consumers not only meets or exceeds all drinking water standards, but also tastes and smells good. These treatment technologies include aeration, filtration, and reverse osmosis processes.

Training: All of our water staff and operators regularly attend training to stay up to date on water quality news, processes, and techniques. Training includes State-mandated sessions relating to licensing as well as on-the-job proficiency training.

Testing: All water sample testing is performed by certified laboratories. National Environmental Laboratory Accreditation Certification (NELAC) is a nationally recognized voluntary certification that employs rigorous testing to ensure reliable, high-quality results. The City of Clearwater uses two NELAC laboratories: one is city-owned, and the other is privately funded.

Maintenance: All maintenance, both preventative and reactive, is tracked using an asset management program. Maintenance tasks are tracked from initiation to completion. All costs, including parts, labor hours, and equipment used to perform the maintenance are recorded and reconciled against financial records and budgets to ensure that the true cost of providing high-quality service to our customers can be optimized. In addition, the Public Utilities warehouse inventory system also uses the program to manage the parts that the City keeps on hand to ensure a timely response to all maintenance and repair issues.

Capital Improvements: Two of the many Capital Improvement Projects currently underway are the RO Plant No. 1 Expansion/ Optimization project and the RO Plant No. 2 Construction Project. The RO Plant No. 1 project includes adding an additional 1.5 MGD of treatment capacity at the plant. The RO Plant No. 2 project includes construction of 12 new brackish water wells, raw water transmission mains, and a 6.5 MGD brackish water Reverse Osmosis Treatment Plant. This new facility will be constructed on the current Water Plant No. 2 site.

PRIMARY REGULATED CONTAMINANTS

Microbiological Contaminants

CONTAMINANT AND UNIT OF MEASUREMENT	MCL VIOLATION (YES/NO)	City of Clearwater DATE OF SAMPLING (MO./YR.)	City of Clearwater HIGHEST MONTHLY PERCENTAGE/ NUMBER	Pinellas County Utilities DATE OF SAMPLING (MO./YR.)	Pinellas County Utilities HIGHEST MONTHLY PERCENTAGE/ NUMBER	Tampa Bay Water DATE OF SAMPLING (MO./YR.)	Tampa Bay Water HIGHEST MONTHLY PERCENTAGE/ NUMBER	MCLG	MCL	LIKELY SOURCE OF CONTAMINATION
Total Coliform Bacteria (% positive samples)	No	1/11–12/11	1.72	1/11–12/11	3.4	NA	NA	0	Presence of coliform bacteria in 5% of monthly samples	Naturally present in the environment

CONTAMINANT AND UNIT OF MEASUREMENT	MCL VIOLATION (YES/NO)	City of Clearwater DATE OF SAMPLING (MO./YR.)	City of Clearwater THE HIGHEST SINGLE MEASUREMENT	City of Clearwater THE LOWEST MONTHLY PERCENTAGE OF SAMPLES MEETING REGULATORY LIMITS	Pinellas County Utilities DATE OF SAMPLING (MO./YR.)	Pinellas County Utilities THE HIGHEST SINGLE MEASUREMENT	Pinellas County Utilities THE LOWEST MONTHLY PERCENTAGE OF SAMPLES MEETING REGULATORY LIMITS	Tampa Bay Water DATE OF SAMPLING (MO./YR.)	Tampa Bay Water THE HIGHEST SINGLE MEASUREMENT	Tampa Bay Water THE LOWEST MONTHLY PERCENTAGE OF SAMPLES MEETING REGULATORY LIMITS	MCLG	MCL	LIKELY SOURCE OF CONTAMINATION
Turbidity[1] (NTU)	No	NA	NA	NA	NA	NA	NA	1/11–4/11	0.41	100%	NA	TT	Soil runoff

Radioactive Contaminants

CONTAMINANT AND UNIT OF MEASUREMENT	MCL VIOLATION (YES/NO)	City of Clearwater DATE OF SAMPLING (MO./YR.)	City of Clearwater LEVEL DETECTED	City of Clearwater RANGE OF RESULTS	Pinellas County Utilities DATE OF SAMPLING (MO./YR.)	Pinellas County Utilities LEVEL DETECTED	Pinellas County Utilities RANGE OF RESULTS	Tampa Bay Water DATE OF SAMPLING (MO./YR.)	Tampa Bay Water LEVEL DETECTED	Tampa Bay Water RANGE OF RESULTS	MCLG	MCL	LIKELY SOURCE OF CONTAMINATION
Alpha Emitters (pCi/L)	No	2/11	4.3	ND–4.3	3/11	0.806	ND–0.806	NA	NA	NA	0	15	Erosion of natural deposits
Beta/Photon Emitters (pCi/L)	No	NA	NA	NA	NA	NA	NA	7/09	5.1	NA	0	50	Decay of natural and man-made deposits
Radium 226 + 228 [Combined Radium] (pCi/L)	No	2/11	1.4	ND–1.4	NA	NA	NA	4/11	2.3	NA	0	5	Erosion of natural deposits
Uranium (ppb)	No	2/11	0.13	ND–0.13	NA	NA	NA	4/11	1.9	NA	0	30	Erosion of natural deposits
Inorganic Contaminants													
Antimony (ppb)	No	2/11	1.8	0.16–1.8	NA	NA	NA	NA	NA	NA	6	6	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder
Arsenic (ppb)	No	2/11	4.1	2.3–4.1	3/11	0.1	ND–0.1	NA	NA	NA	NA	10	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Barium (ppm)	No	2/11	0.02	0.0099–0.02	3/11	0.0196	0.0145–0.0196	NA	NA	NA	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Beryllium (ppb)	No	2/11	0.18	ND–0.18	NA	NA	NA	NA	NA	NA	4	4	Discharge from metal refineries and coal-burning factories; discharge from electrical, aerospace, and defense industries
Cadmium (ppb)	No	NA	NA	NA	NA	NA	NA	4/11	0.19	NA	5	5	Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries and paints
Chromium (ppb)	No	2/11	4.8	2.7–4.8	NA	NA	NA	4/11	4.9	NA	100	100	Discharge from steel and pulp mills; erosion of natural deposits
Fluoride (ppm)	No	NA	NA	NA	3/11	0.73	0.69–0.73	NA	NA	NA	4	4.0	Erosion of natural deposits; discharge from fertilizer and aluminum factories; water additive that promotes strong teeth when at optimum levels between 0.7 and 1.3 ppm
Lead [point of entry] (ppb)	No	NA	NA	NA	NA	NA	NA	1/11, 4/11, 7/11, 10/11	7.6	NA	NA	15	Residue from man-made pollution such as auto emissions and paint; lead pipe, casing, and solder
Nickel (ppb)	No	NA	NA	NA	3/11	1.9	0.7–1.9	NA	NA	NA	NA	100	Pollution from mining and refining operations; natural occurrence in soil
Nitrate [as Nitrogen] (ppm)	No	2/11	0.16	0.03–0.16	3/11	0.14	0.03–0.14	NA	NA	NA	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Nitrite [as Nitrogen] (ppm)	No	NA	NA	NA	NA	NA	NA	1/11, 4/11, 7/11, 10/11	0.06	ND–0.06	1	1	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Selenium (ppb)	No	2/11	6.3	5.4–6.3	NA	NA	NA	4/11	9.4	NA	50	50	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines
Sodium (ppm)	No	NA	NA	NA	3/11	42	8.73–42	NA	NA	NA	NA	160	Salt water intrusion; leaching from soil
Synthetic Organic Contaminants including Pesticides and Herbicides													
Dalapon (ppb)	No	1/11–11/11	0.8	ND–0.8	3/11, 5/11, 9/11, 11/11	1.5	0.69–1.5	NA	NA	NA	200	200	Runoff from herbicide used on rights of way
Hexachlorocyclopentadiene (ppb)	No	NA	NA	NA	3/11, 5/11	0.017	ND–0.017	NA	NA	NA	50	50	Discharge from chemical factories

Stage 1 Disinfectants and Disinfection By-Products

CONTAMINANT AND UNIT OF MEASUREMENT	MCL VIOLATION (YES/NO)	City of Clearwater DATE OF SAMPLING (MO./YR.)	City of Clearwater LEVEL DETECTED	City of Clearwater RANGE OF RESULTS	Pinellas County Utilities DATE OF SAMPLING (MO./YR.)	Pinellas County Utilities LEVEL DETECTED	Pinellas County Utilities RANGE OF RESULTS	Tampa Bay Water DATE OF SAMPLING (MO./YR.)	Tampa Bay Water LEVEL DETECTED	Tampa Bay Water RANGE OF RESULTS	MCLG OR [MRDLG]	MCL OR [MRDL]	LIKELY SOURCE OF CONTAMINATION
Bromate (ppb)	No	NA	NA	NA	NA	NA	NA	1/11–12/11	4.56	1.57–7.91	0	10	By-product of drinking water disinfection
Chloramines (ppm)	No	1/11 -12/11	3.4	3.3–3.7	NA	NA	NA	NA	NA	NA	[4]	[4.0]	Water additive used to control microbes
Chlorine (ppm)	No	NA	NA	NA	1/11–12/11	3.7	1.5–5.8	NA	NA	NA	[4]	[4.0]	Water additive used to control microbes
Haloacetic Acids (five) [HAA5] (ppb)	No	1/11-12/11	26.41	3.94–58.8	1/11–12/11	21.4	21.4–41.8	NA	NA	NA	NA	60	By-product of drinking water disinfection
TTHM [Total trihalomethanes] (ppb)	No	1/11-12/11	51.29	18.8–122.4	1/11–12/11	36.5	20–66.1	NA	NA	NA	NA	80	By-product of drinking water disinfection

CONTAMINANT AND UNIT OF MEASUREMENT	ACUTE VIOLATIONS (YES/NO)	City of Clearwater DATE OF SAMPLING (MO./YR.)	City of Clearwater NON-ACUTE VIOLATIONS (YES/NO)	City of Clearwater LEVEL DETECTED	Pinellas County Utilities DATE OF SAMPLING (MO./YR.)	Pinellas County Utilities NON-ACUTE VIOLATIONS (YES/NO)	Pinellas County Utilities LEVEL DETECTED	Tampa Bay Water DATE OF SAMPLING (MO./YR.)	Tampa Bay Water NON-ACUTE VIOLATIONS (YES/NO)	Tampa Bay Water LEVEL DETECTED	MRDLG	MRDL (AT THE ENTRANCE TO THE DISTRIBUTION SYSTEM)	LIKELY SOURCE OF CONTAMINATION
Chlorine Dioxide (ppb)	No	NA	NA	NA	NA	NA	NA	1/11–4/11	No	725	800	800	Water additive used to control microbes

CONTAMINANT AND UNIT OF MEASUREMENT	MCL VIOLATION (YES/NO)	City of Clearwater DATE OF SAMPLING (MO./YR.)	City of Clearwater HIGHEST MONTHLY AVERAGE (THREE SAMPLE SET COLLECTED IN THE DISTRIBUTION SYSTEM)	City of Clearwater HIGHEST AVERAGE (THREE SAMPLE SET) FOLLOWING A DAILY MCL VIOLATION AT THE ENTRANCE TO THE DISTRIBUTION SYSTEM	Pinellas County Utilities DATE OF SAMPLING (MO./YR.)	Pinellas County Utilities HIGHEST MONTHLY AVERAGE (THREE SAMPLE SET COLLECTED IN THE DISTRIBUTION SYSTEM)	Pinellas County Utilities HIGHEST AVERAGE (THREE SAMPLE SET) FOLLOWING A DAILY MCL VIOLATION AT THE ENTRANCE TO THE DISTRIBUTION SYSTEM	Tampa Bay Water DATE OF SAMPLING (MO./YR.)	Tampa Bay Water HIGHEST MONTHLY AVERAGE (THREE SAMPLE SET COLLECTED IN THE DISTRIBUTION SYSTEM)	Tampa Bay Water HIGHEST AVERAGE (THREE SAMPLE SET) FOLLOWING A DAILY MCL VIOLATION AT THE ENTRANCE TO THE DISTRIBUTION SYSTEM	MCLG	MCL	LIKELY SOURCE OF CONTAMINATION
Chlorite (ppm)	No	NA	NA	NA	NA	NA	NA	1/11–4/11	0.00527	NA	0.8	1.0	By-product of drinking water disinfection

CONTAMINANT AND UNIT OF MEASUREMENT	TT VIOLATION (YES/NO)	City of Clearwater DATE OF SAMPLING (MO/YR)	City of Clearwater ANNUAL AVERAGE MONTHLY REMOVAL RATIO OR LOWEST ANNUAL AVERAGE MONTHLY REMOVAL RATIO	City of Clearwater RANGE OF MONTHLY REMOVAL RATIOS	Pinellas County Utilities DATE OF SAMPLING (MO/YR)	Pinellas County Utilities ANNUAL AVERAGE MONTHLY REMOVAL RATIO OR LOWEST ANNUAL AVERAGE MONTHLY REMOVAL RATIO	Pinellas County Utilities RANGE OF MONTHLY REMOVAL RATIOS	Tampa Bay Water DATE OF SAMPLING (MO/YR)	Tampa Bay Water ANNUAL AVERAGE MONTHLY REMOVAL RATIO OR LOWEST ANNUAL AVERAGE MONTHLY REMOVAL RATIO	Tampa Bay Water RANGE OF MONTHLY REMOVAL RATIOS	MCLG	MCL	LIKELY SOURCE OF CONTAMINATION
Total Organic Carbon[2] (ppm)	No	NA	NA	NA	NA	NA	NA	1/11–4/11	3.67	3.1–4	NA	TT	Naturally present in the environment

Lead and Copper (Tap water samples were collected from sites throughout the community)

CONTAMINANT AND UNIT OF MEASUREMENT	AL EXCEEDANCE (YES/NO)	City of Clearwater DATE OF SAMPLING (MO./YR.)	City of Clearwater 90TH PERCENTILE RESULT	City of Clearwater NO. OF SAMPLING SITES EXCEEDING THE AL	Pinellas County Utilities DATE OF SAMPLING (MO./YR.)	Pinellas County Utilities 90TH PERCENTILE RESULT	Pinellas County Utilities NO. OF SAMPLING SITES EXCEEDING THE AL	Tampa Bay Water DATE OF SAMPLING (MO./YR.)	Tampa Bay Water 90TH PERCENTILE RESULT	Tampa Bay Water NO. OF SAMPLING SITES EXCEEDING THE AL	MCLG	AL (ACTION LEVEL)	LIKELY SOURCE OF CONTAMINATION
Copper [tap water] (ppm)	No	8/11 -9/11	0.593	0	6/11–7/11	0.498	0	NA	NA	NA	1.3	1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead [tap water] (ppb)	No	8/11–9/11	3	0	6/11–7/11	1.4	0	NA	NA	NA	0	15	Corrosion of household plumbing systems, erosion of natural deposits

[1] The result in the lowest monthly percentage column is the lowest monthly percentage of samples reported in the Monthly Operating Report meeting the required turbidity limits.
[2] The monthly TOC removal ratio is the ratio between the actual TOC removal and the TOC rule removal requirements.

Sampling Results

During the past year, we have taken hundreds of water samples in order to determine the presence of any radioactive, biological, inorganic, volatile organic, or synthetic organic contaminants. The information in the tables shows only those contaminants that were detected in the water. Although all of the substances listed here are under the Maximum Contaminant Level (MCL), we feel it is important that you know exactly what was detected and how much of the substance was present in the water. We are pleased to report that our drinking water meets all federal and state requirements.

The State requires us to monitor for certain substances less often than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

Definitions

AL (Action Level): The level of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to MCLGs as feasible using the best available treatment (BAT) technology. The State of Florida enforces these standards.

Maximum Contaminant Level Goal (MCLG): The level of contaminant in drinking water below which the is no known or expected risk to health. MCLGs allow for a margin of safety. These are nonenforceable benchmarks.

Maximum Residual Disinfectant Level (MDRL): The highest level of disinfectant allowed in the drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

MRDLG (Maximum Residual Disinfectant Level Goal): The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

Total Organic Carbon (TOC): A measure of the concentration of organic carbon in water. TOC is related to the formation of Disinfection By-Products (DBPs).

Disinfection By-Products (DBPs): Chemical by-products of the disinfection process. DBPs are regulated and include trihalomethane (THM) and haloacetic acid (HAA). Results for THM and HAA are included in this report.

Parts per billion (ppb): A unit of measure of the level (concentration) of a substance in water. One part per billion is equivalent to one gallon per billion gallons, or about one minute in 2000 years.

Parts per million (ppm): A unit of measure of the level (concentration) of a substance in water. One part per million is equivalent to one gallon per million gallons, or about one minute in two years.

pCi/L (picocuries per liter): A measure of radioactivity.

IDSE (Initial Distribution System Evaluation): An important part of the Stage 2 Disinfection Byproducts Rule (DBPR). The IDSE is a one-time study conducted by water systems to identify distribution system locations with high concentrations of trihalomethanes (THMs) and haloacetic acids (HAA5s). Water systems will use results from the IDSE, in conjunction with their Stage 1 DBPR compliance monitoring data, to select the compliance monitoring locations for the Stage 2 DBPR.

Running Annual Average (RAA): An average of the monitoring results for the previous 12 calendar months.

Treatment Technique (TT): A required process intended to reduce the level of a substance in drinking water.

Not Detected (ND): Indicates that the substance was not detected by laboratory analysis.

NA: Not applicable.

Treatment Technique Violation Notification

Violation Type: Tier II Ground Water Rule Treatment Technique Violation

Date and Length of Violation: On March 22nd, 2011, for approximately 16 hours, the Free Chlorine residual in the Blend Tank, one of four points in the disinfection process at RO Plant No. 1, was below the required minimum level. The violation occurred during treatment and was corrected before any water from the finished water storage tank was sent out into the distribution system. Although one part of the process was out of compliance, all other components of the disinfection process were operated correctly. In addition, the other two Water Treatment Plants owned and operated by the city were in full compliance during the 16-hour period.

Steps Taken to Correct Violation: The Free Chlorine residual was restored to compliance levels within two hours of identifying the violation. A review of plant operations was immediately conducted to ensure all other disinfection residuals were in compliance. The Florida Department of Environmental Protection was notified as required by Florida Administrative Code. Public Notification was completed as required by Florida Administrative Code. The Water Plant monitoring alarm system was tested, and an additional alarm point was added for chlorine residuals. A training review was provided to operating staff, and a Standard Operating Procedure (SOP) was developed to ensure that all operators take proper monitoring steps and corrective action when needed.

Health Effects: This Treatment Technique Violation was not an emergency. However, it is required that customers be advised that inadequately treated or inadequately protected water may contain disease-causing organisms causing symptoms such as diarrhea, nausea, cramps, and associated headaches.

FL00138

Clearwater Sunshine LINES

February 2012

STAY INFORMED

7th Annual Clearwater Pet Festival

Saturday, March 24, 10 a.m. – 3 p.m., Cleveland Street District, downtown Clearwater

This annual event, sponsored by the Clearwater Downtown Development Board, attracts many of the community's pets and their owners to the Cleveland Street District in downtown Clearwater. Festival activities on Cleveland Street between East and Ft. Harrison avenues include a pet parade, contests, animal rescue groups, pet supply vendors, entertainment and food. It's fun and free. Contact anne.fogarty-france@myclearwater.com for more information.

Clearwater Designated a "Coast Guard City"

The City of Clearwater is now one of only 14 cities throughout the nation to be designated a "Coast Guard City." The designation, endorsed by Congress and the Coast Guard, is made to recognize the outstanding support the community provides to Coast Guard personnel and their families.

In January, Admiral Robert J. Papp, Jr., Commandant of the Coast Guard, accepted a proclamation and key to the city from Mayor Frank Hibbard to celebrate the prestigious honor. Other dignitaries that attended the event included Senator Bill Nelson, Congressman C.W. Bill Young, Congressman Gus Bilirakis, and Senator Jack Latvala.

The U.S. Coast Guard Air Station Clearwater is the largest and busiest air station in the Coast Guard. Their area of operation includes the Gulf of Mexico, Caribbean basin, and the Bahamas.

Because of Clearwater's rich history with the Coast Guard, the Coast Guard City designation was earned. The application process for the program was coordinated by the Clearwater Regional Chamber of Commerce through their Military & Veteran's Committee.

Need to Replace your Gas Water Heater?

Here's a tip to help put a little extra in your pockets this year: Replacing your old gas water heater with a more energy efficient tank or tankless gas water heater, can save you an average of 59% annually on your home's energy bill.

Now for a limited time, Clearwater Gas System customers can receive up to $550 off the costs of a residential tank or tankless gas water heater when purchasing a gas water heater from Clearwater Gas System. For more information call us at 727) 562-4980, extension 7454.

The Future of Our Water

The City of Clearwater is working to ensure the quality of our water in the future. Plans are currently underway to implement the ongoing construction of the reclaimed water distribution system; expand our existing reverse osmosis water treatment plant; design and construct a second reverse osmosis plant; and look at the feasibility of ground water replenishment technology. If you, your neighborhood, or civic association would like more information on any of these projects, call (727) 562-4960. Public meetings for each project will provide the opportunity for input. If you are interested, watch for notification of these meetings on the city's website, *myclearwater.com*.

Bring Reclaimed Water into Your Neighborhood

The City of Clearwater is expanding its reclaimed water system and will be providing this valuable resource to residents all over the city. Projects in the Skycrest, Clearwater Harbor, Glen Oaks, and Palmetto neighborhoods are currently under construction, and neighborhoods such as Coachman Ridge, Lake Chautauqua, and Morningside already enjoy the many benefits of using reclaimed water.

If your neighborhood does not currently have reclaimed water service and you would like it, it's easy to initiate a project. Neighbors along the proposed pipeline would need to sign a Citizen-Initiated Petition Form to express their interest in getting the service. More than 50 percent of participating property owners would be required for approval leading to construction. To learn more, call the Public Utilities Department at (727) 562-4960, ext. 7226 or visit the reclaimed water website, *myclearwater.com/reclaimed*.

USF Softball Tournaments:

USF Under Armour Invitational

Friday, March 2 – Sunday March 4

USF Under Armour Showcase

Friday, March 9 – Sunday, March 11

USF Tournament

Friday, March 16 – Sunday, March 18

Eddie C. Moore Complex, 2780 Drew St.
(727) 562-4700

usfseries.com

USF
UNIVERSITY OF SOUTH FLORIDA

Clearwater welcomes college athletes, coaches, sponsors, and spectators to some of the largest NCAA Division I softball tournaments. Competing in these tournaments is an accomplishment for all teams. Presented by Visit St. Petersburg/Clearwater Sports Commission and the City of Clearwater.

What To Do With That Old Television

Did you know that the typical television or computer monitor contains anywhere from two to eight pounds of lead? These toxic wastes are dangerous to our environment. Many good residents are unaware of the dangers of tossing old and broken electronics into the garbage or landfill.

Clearwater residents with proof of residency (a copy of your utility bill) may bring up to six unwanted electronics to the recycling drop-off center at 1701 N. Hercules Ave. for free disposal on the last Wednesday of each month in 2012.

Accepted electronics:

Camcorders, cameras, cassette players, CD players, cell phones, DVD players, fax machines, microwave ovens, photocopiers, radios, scanners, stereos, TVs, VCRs, computers and computer accessories.

2012 E-Waste Drop-off Days are:

Feb. 29	Aug. 29
March 28	Sept. 26
April 25	Oct. 31
May 30	Nov. 28
June 27	Dec. 26
July 25	

Sign-up for City News

Stay connected to the City of Clearwater by signing up for our e-newsletters. C-Mail is one of the ways residents can stay updated about what's happening in Clearwater. Information is sent out at regular intervals to those who register their e-mail addresses online. Users can register to receive information about Neighborhood News, City Council meetings, Employment Opportunities, Parks & Recreation programs, Police News, Clearwater Public Library System, and city press releases. A new category called "Green & Energy News" is now available and provides citywide news about green initiatives, utilities news, and sustainability information.

To sign up for the city's e-newsletters or to edit the categories you currently receive, just click on "E-Newsletters" on the left-hand side of myclearwater.com, enter your email address, and select the categories of news which you would like to receive.

CITY OF Clearwater

www.myclearwater.com

Para información en español, llame al (727) 562-4550.

Sunshine Lines is produced by the City of Clearwater
Public Communications Department

Your Leadership Team

Mayor	Frank Hibbard
Councilmembers	George N. Cretekos
	John Doran
	Paul F. Gibson
	Bill Jonson
City Manager	Bill Horne
City Attorney	Pam Akin

-----Original Message-----
From: no_reply@myclearwater.com [mailto:no_reply@myclearwater.com]
Sent: Tuesday, June 12, 2012 4:11 PM
To: Parsons, Heather
Subject: City of Clearwater - Drinking Water Quality Report Now Available

This is an automated message - PLEASE DO NOT REPLY

This email message is in response to you signing up with City of Clearwater - Green & Energy News

FOR IMMEDIATE RELEASE
June 12, 2012

Contact:
Heather Parsons
(727) 562-4708

Drinking Water Quality Report Now Available

CLEARWATER, Fla. - The City of Clearwater Public Utilities Department released its annual Water Quality Report. The report contains pertinent water quality information of interest to Clearwater residents. As part of the U.S. Environmental Protection Agency's "Safe Drinking Water Act Amendments," all water systems throughout the country must publish this annual report.

"I am pleased that our water quality meets or exceeds national drinking standards. This is a testament to the great job our employees do in performing their daily work to secure the integrity and safety of our water system," said Tracy Mercer, Public Utilities Director.

A copy of the Water Quality Report was mailed to all customers. Additional copies of the report will be available at City Hall, in Customer Service at the Municipal Services Building, and at public libraries. You can read it online at www.myclearwater.com by selecting "Public Utilities" from the tab, "Browse City Departments."

The report also is available in Spanish. To learn more about the city's water quality or to request a copy by mail, call
(727) 562-4960 or visit www.myclearwater.com.

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City of Clearwater Web site - http://www.myclearwater.com

If you want to remove yourself from the mailing list click on the link below and enter your email address in the space provided:

http://www.myclearwater.com/CMAIL/CMAILRemove.aspx

This is an automated message - PLEASE DO NOT REPLY

Clearwater Sunshine LINES

June 2013

STAY INFORMED

IT STARTS IN PARKS
Coaching. Connecting. Community.

July is National Park and Recreation Month

Clearwater Parks & Recreation will celebrate Park and Recreation Month in July by having special deals and giveaways throughout the month. Check with your local recreation center for a calendar of July activities and help celebrate. Coaching, Connecting, Community … *It Starts In Parks!*

Get Involved in City Government

If you'd like to learn more about how your city government works, you may want to apply for the Clearwater Citizen's Academy. This ten-week program begins in September. Classes are held once a week, on Tuesday evenings, from 6 to 8:30 p.m. Clearwater residents who are selected for this free program meet at different locations each week to learn how different city departments function. Participants interact with City Councilmembers and staff. Previous Citizen's Academy graduates now serve on city boards, volunteer at events, and one is a current City Councilmember. Applications for the program will be available beginning July 1 on the city's website, *myclearwater.com,* or by calling (727) 562-4681 to receive an application in the mail.

Storm Season Safety Message

While serious weather conditions cannot be prevented early preparation can help keep you safe during Florida's hurricane and severe weather season (June 1 – Nov. 30). If you operate natural or propane gas appliances Clearwater Gas recommends that you secure them properly prior to evacuating:

- You may turn off gas to individual appliances (water heater, range, dryer pool/spa heater) at the turn-off valve near each unit; **do not turn off gas at the main meter.**
- Do not store propane tanks inside your home or garage; move propane tanks to a secured outdoor location.
- Locate the turn-off valve for each of your gas appliances and familiarize yourself with its operation before a storm occurs.
- Call the **Clearwater Gas Emergency Hotline** at **(727) 462-6633,** if you smell gas after severe weather has cleared.

Overall, natural and propane gas energy is 99.9 percent reliable to power generators, water heaters, ranges and grills even when the power goes out. Visit the Clearwater Gas website at *clearwatergas.com* for a detailed overview of severe weather safety tips.

Water Maintenance Program is Underway

Each year, Pinellas County's drinking water distribution system undergoes a maintenance program in which the disinfectant is temporarily switched from chloramines to chlorine. Clearwater customers are affected by this switch, since the city buys some of its water from Pinellas County. The maintenance program began May 29 and continues through June 17, 2013. Some residents may notice a slight difference in the taste or odor of their drinking water. Although the disinfectant is slightly more noticeable, the water is still safe to drink.

Residents and businesses with kidney dialysis machines and tropical aquatic life tanks should not be affected, but should contact their respective industries with questions about this temporary change. This routine maintenance is required to ensure the drinking water provided to Clearwater water customers continues to be of the highest quality. The annual process continues to run smoothly every year. Thank you for your patience.

Beware: Verify Green Marketing Claims

The number of eco-label products, claiming that they are "eco-friendly" or "all-natural", has increased due to a growing demand for "green" products. While this is a positive trend, you may have concerns about "greenwashing" and uncertainty about which environmental standards and labels can be trusted. You can use the Federal Trade Commission's Green Guides as a resource to verify that marketing claims regarding the environmental attributes or products are truthful and substantiated. Here are some tips to help you sort through eco-label marketing:

- Look for specifics (example: "contains 75 percent post-consumer recycled materials") rather than vague statements about environmental impact.
- Determine whether the green marketing claims apply to the packaging, the product, or both.
- Beware of fake third-party certification. Visit Consumer Reports' website to find reliable environmental labels.

Reusing and Recycling

In addition to buying green products, you can make a big impact by using the products you buy in ways that respect the environment by:

- Using fewer products and following instructions for product use; conserving energy, water, and materials; recycling items made of materials such as paper, plastic or metal; disposing of waste and other products properly.

For more information, call the City of Clearwater Solid Waste Department at (727) 562-4920.

Groundwater Replenishment

A study is underway that could help the City of Clearwater ensure the availability of more drinking water in the future. Beneath the city, the fresh water from the Upper Floridan aquifer used for drinking water sits on top of a layer of brackish, or somewhat salty, water. The fresh water resource can be protected by balancing the recharge of the aquifer level and water withdrawals, protecting the fresh water from becoming salty.

This study will measure the potential to improve groundwater levels within the city so more drinking water will be available. The study will determine how much the groundwater level can be improved by directly adding up to three million gallons a day of purified reclaimed water into a brackish water zone below the freshwater zone of the Upper Floridan aquifer. A 2011 feasibility study concluded this groundwater replenishment project to be safe and economical.

The ongoing pilot and demonstration phase of the study is two-fold: 1) underground hydrologic testing and analysis, and 2) a one-year operation of a small-scale purification plant to evaluate the process and water treatment options. The study is cooperatively funded by the Southwest Florida Water Management District. Informational presentations are available for neighborhood and civic associations by calling (727) 562-4960.

Volunteers Needed

Volunteers are needed for the Amateur Softball Association's 18 and Under Gold National Championship that will take place July 21-28, 2013, at the Eddie C. Moore Complex. This is a great opportunity for students to earn service hours during the summer. To sign up, visit *myclearwater.com/parksvolunteer.* You will be sent an email to choose a specific volunteer position before the event. For more information, call (727) 562-4803.

Clearwater Celebrates America

Thursday, July 4

Coachman Park, 301 Drew St.

Free general admission

Celebrate America's independence with a patriotic concert featuring the best fireworks display in the area, vendors, food and drink concessions, and a kid's play area. For more information, call (727) 562-4700. Gates open at 4 p.m.; fireworks at 9:30 p.m.

What is your child doing this summer?

Contact the Clearwater Parks & Recreation facility near you to find out about summer camp activities for elementary and middle school children. More information is available at *myclearwater.com/camps.*

Don't forget that the Clearwater Public Library System is offering plenty of activities to keep children busy. Visit your nearest Clearwater library branch to find out more; call (727) 562-4970; or visit *myclearwater.com/cpl.*

CITY OF Clearwater

www.myclearwater.com

Para información en español, llame al (727) 562-4550.

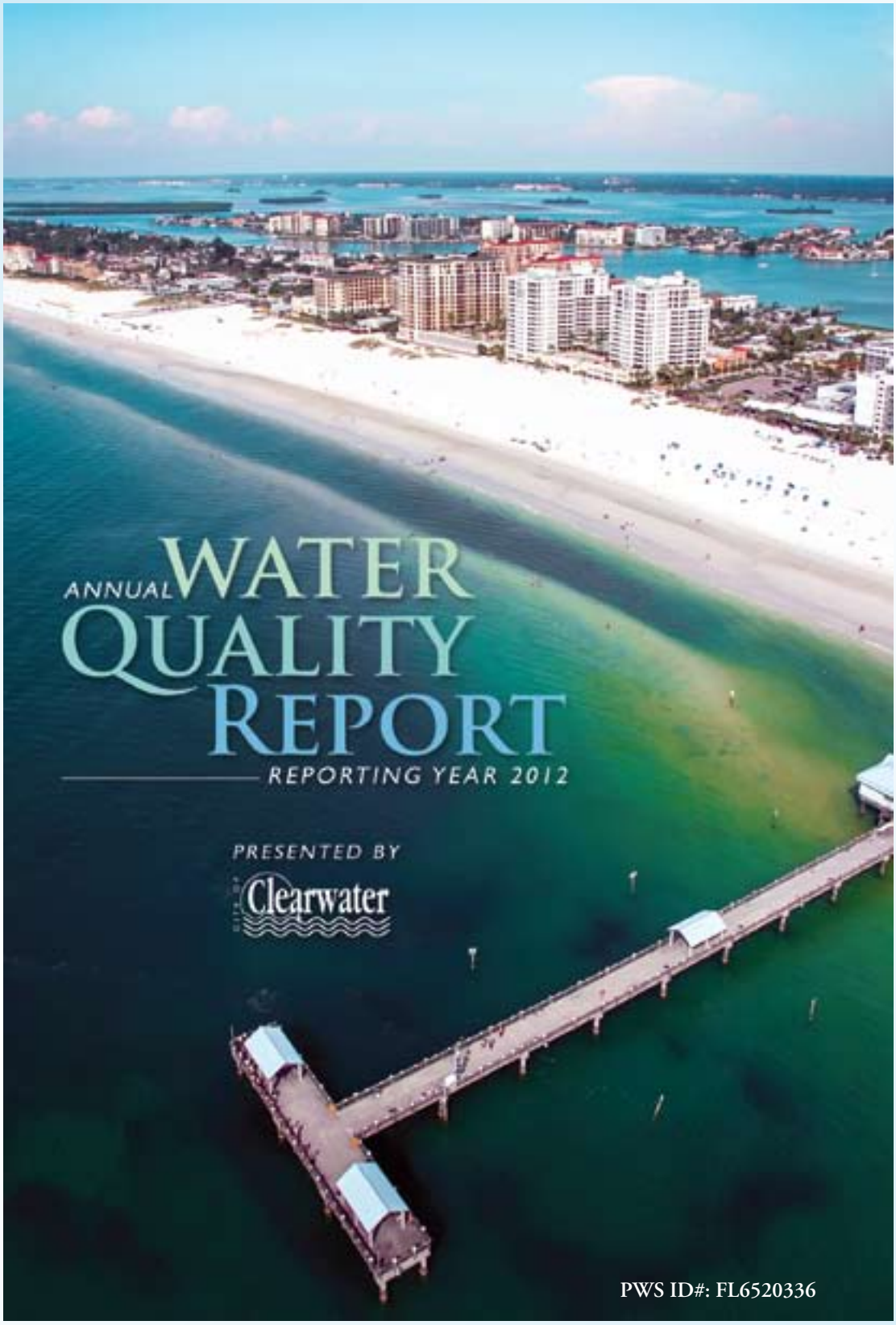
Sunshine Lines is produced by the City of Clearwater Public Communications Department

myCLEARWATER

Winter – Spring 2012 Jan. – Apr.

The Future of Our Water

The City of Clearwater is working to improve the future of our water. Plans are currently underway to implement the ongoing construction of the reclaimed water distribution system; the expansion of our existing reverse osmosis water treatment plant; the design and construction of a second reverse osmosis plant; and, looking at the feasibility of ground water replenishment technology. If you, your neighborhood, or civic association would like more information on any of these projects, call 562-4960. Each project will have public meetings for public input over the coming year. If you are interested, watch for notification of these meetings on the city website.


ANNUAL WATER QUALITY REPORT
REPORTING YEAR 2012
PRESENTED BY
Clearwater
PWS ID#: FL6520336

Dear City of Clearwater Water Consumer:

This report presents important information about the City of Clearwater's drinking water quality. It also discusses our water supplies and methods used for producing drinking water you can trust, delivered to your tap every day. Included is information on how you can participate in water system improvements and decision-making processes.

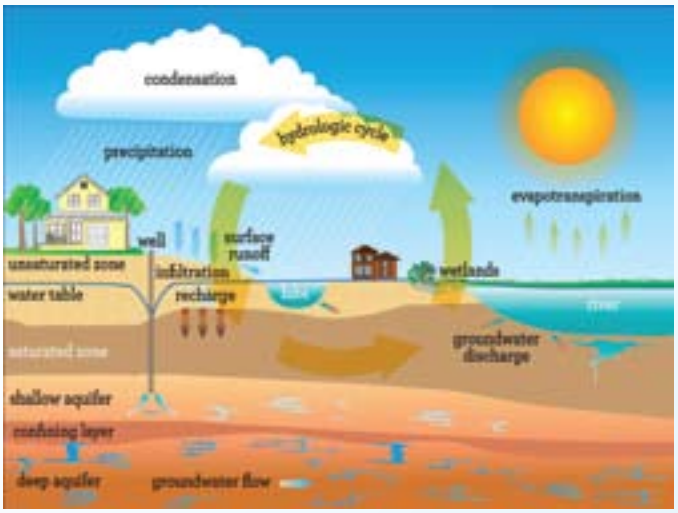
Our trained, licensed water professionals are committed to producing high-quality drinking water that meets or exceeds all regulatory standards. Our Engineering and Management staff strive to maintain a modern and reliable water system by employing a forward-thinking, proactive approach in anticipating future community needs and regulations.

The City of Clearwater routinely monitors for contaminants in your drinking water according to Federal and State laws, rules, and regulations. This report is based on the results of monitoring from Jan. 1 through Dec. 31, 2012.

Where Does My Water Come From?

City of Clearwater residents use approximately 11.5 million gallons of potable water every day. Approximately 60 percent is pumped from City-owned and -operated groundwater wells; the remaining daily demand is supplied by water purchased from Pinellas County Utilities. The groundwater source for Clearwater comes from a groundwater supply called the Floridan Aquifer. This aquifer, which is one of the major sources of groundwater in the United States, underlies all of Florida, southern Georgia, and small parts of adjacent Alabama and South Carolina.

Pinellas County Utilities receives drinking water from Tampa Bay Water, a regional water supplier, which in turn becomes part of the water supplied to the residents of Clearwater. The water supplied by Tampa Bay Water is a blend of groundwater, treated surface water, and desalinated seawater. Eleven regional wellfields, pumping from the Floridan Aquifer, are the primary source for the regional groundwater supply. The Alafia River, the Hillsborough River, C.W. Bill Young Regional Reservoir, and the Tampa Bypass Canal are the primary supplies for the regional treated surface water supply. Hillsborough Bay is the primary supply of seawater for the regional desalinated supply. For more information on the Tampa Bay Water system, visit their Web site at tampabaywater.org.



Questions?

Please contact Greg Turman, Water Production Coordinator, at (727) 562-4960, if you have questions about this report.

Community Participation Is Welcome

You are invited to participate in our regularly scheduled meetings. The City of Clearwater Council normally meets at 6 p.m. on the first and third Thursdays of each month at City Hall, 112 S. Osceola Ave, Clearwater, FL. The meeting agendas are published on the city's Web site at myclearwater.com. For more information, call (727) 562-4090.

The Pinellas County Board of County Commissioners meets typically twice a month, usually, but not always, on the first and third Tuesdays of the month. The earlier meeting in the month begins at 9:30 a.m. Meetings in the latter part of the month are held in two parts. Agenda items are discussed with the Board at 2 p.m., after which there is a break and the Board reconvenes at 6 p.m. The public is invited to attend these meetings, held in the 5th floor Assembly Room of the Pinellas County Courthouse located at 315 Court St., Clearwater, FL 33765. For more information, call (727) 464-3485.

Tampa Bay Water's Board of Directors meetings occur on the third Monday of every other (even) month at 9 a.m. at Tampa Bay Water, 2575 Enterprise Rd., Clearwater, FL 33763. For more information, visit their Web site at tampabaywater.org or call (727) 796-2355.

Ground Water Replenishment

A study is underway that could help the City of Clearwater ensure the availability of more drinking water in the future. Beneath the city, the fresh water from the Upper Floridan aquifer used for drinking water sits on top of a layer of brackish, or somewhat salty, water. The fresh water resource can be protected by balancing the recharge of the aquifer level and water withdrawals, protecting the fresh water from becoming salty.

This study will measure the potential to improve groundwater levels within the city so more drinking water will be available. The study will determine how much the groundwater level can be improved by directly adding up to three million gallons a day of purified reclaimed water into a brackish water zone below the freshwater zone of the Upper Floridan aquifer. A 2011 feasibility study concluded this groundwater replenishment project to be safe and economical.

The ongoing pilot and demonstration phase of the study is two-fold: 1) underground hydrologic testing and analysis, and 2) a one-year operation of a small-scale purification plant to evaluate the process and water treatment options. The study is cooperatively funded by the Southwest Florida Water Management District. Informational presentations are available for neighborhood and civic associations by calling (727) 562-4960.

Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791 or http://water.epa.gov/drink/hotline.

Source Water Assessment

In 2012, the Department of Environmental Protection performed a Source Water Assessment on the City of Clearwater, Tampa Bay Water (TBW), and Pinellas County utility systems. The assessment was conducted to provide information about any potential sources of contamination in the vicinity of our wells. The well water source is considered to be at low to moderate risk due to potential sources of contamination such as gas stations and waste cleanup sites present in the assessment area. The assessment of the Tampa Bay Water surface water intakes are considered to be at high risk because of the many potential sources of contamination present in the assessment area. The complete assessment results are available on the FDEP Source Water Assessment and Protection Program Web site at dep.state.fl.us/swapp or they can be obtained from Tampa Bay Water, 2575 Enterprise Road, Clearwater, FL, 33763, (727) 796-2355.

Bring Reclaimed Water into Your Neighborhood!

If your neighborhood does not currently have reclaimed water service and you would like it, it is easy to initiate a project. Neighbors along the proposed pipeline would need to sign a Citizen-initiated Petition Form to express interest in getting reclaimed service. More than 50 percent of property owners along the route are required for approval leading to construction. To learn more, call (727) 562-4960 or visit myclearwater.com/reclaimed.

The Future of Our Water

The City of Clearwater is working to improve the future of our water. Construction is under way to expand the treatment capacity at RO Plant No. 1 from 3 million gallons per day to 4.5 million gallons per day. Construction of a new reverse osmosis water treatment plant at the current Water Plant No. 2 site begins in May 2013. These improvements will allow Clearwater Public Utilities to produce more water from city-owned sources, increasing control over the quality of water provided to our consumers, and controlling costs by reducing dependence on other sources. To learn more about these projects, call (727) 562-4960 or visit myclearwater.com.

Lead in Home Plumbing

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. We are responsible for providing high-quality drinking water, but we cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using the water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at www.epa.gov/safewater/lead.

How Is My Water Treated?

Clearwater has three drinking water treatment plants. RO Plant No. 1 is a 3-million-gallon per day (GPD) reverse osmosis (RO) treatment plant. Raw water produced by wells withdrawing supply from the Upper Floridan Aquifer is filtered to remove iron and other suspended solids and then processed with RO to remove selected dissolved molecules, including hardness-causing salts. The water is disinfected using monochloramines, then stabilized to protect the water distribution system, and the finished water is pumped to the consumer.

At Water Plants Nos. 2 and 3, raw water from the Upper Floridan Aquifer is blended with water supplied by Pinellas County Utilities, disinfected using monochloramines, and stabilized before being pumped to the consumer.

Clearwater uses Best Available Treatment (BAT) technologies to ensure that the drinking water delivered to our consumers meets or exceeds all drinking water standards. The treatment technologies include aeration, filtration, and reverse osmosis processes.

Watering Restrictions

Citywide watering restrictions change on a regular basis, usually once or twice a year. Make sure your household is following the city's current watering restrictions while watering lawns and landscaping. Learn details online at myclearwater.com/watering or by calling the Water Conservation Hotline at (727) 562-4WTR (4987).

Substances That Could Be in Water

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

Microbial Contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife. **Inorganic Contaminants**, such as salts and metals, which can be naturally occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming. **Pesticides and Herbicides**, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses. **Organic Chemical Contaminants**, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems. **Radioactive Contaminants**, which can be naturally occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, the U.S. EPA prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at (800) 426-4791.

Sampling Results

During the past year, we have taken hundreds of water samples in order to determine the presence of any radioactive, biological, inorganic, volatile organic, or synthetic organic contaminants. The information in the tables shows only those contaminants that were detected in the water. Although all of the substances listed here are under the Maximum contaminant Level (MCL), we feel it is important that you know exactly what was detected and how much of the substance was present in the water. We are pleased to report that our drinking water meets all Federal and State requirements.

The State requires us to monitor for certain substances less often than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

PRIMARY REGULATED CONTAMINANTS

Microbiological Contaminants

		City of Clearwater		Pinellas County Utilities		Tampa Bay Water				
CONTAMINANT AND UNIT OF MEASUREMENT	MCL VIOLATION (YES/NO)	DATE OF SAMPLING (MO./YR.)	HIGHEST MONTHLY PERCENTAGE	DATE OF SAMPLING (MO./YR.)	HIGHEST MONTHLY PERCENTAGE	DATE OF SAMPLING (MO./YR.)	HIGHEST MONTHLY PERCENTAGE/ NUMBER	MCLG	MCL	LIKELY SOURCE OF CONTAMINATION
Total Coliform Bacteria (% positive samples)	No	1/12–12/12	2.5	1/12–12/12	3.5	NA	NA	0	Presence of coliform bacteria in 5% of monthly samples	Naturally present in the environment

		City of Clearwater		Pinellas County Utilities		Tampa Bay Water				
CONTAMINANT AND UNIT OF MEASUREMENT	MCL VIOLATION (YES/NO)	DATE OF SAMPLING (MO./YR.)	TOTAL NUMBER OF POSITIVE SAMPLES FOR THE YEAR	DATE OF SAMPLING (MO./YR.)	TOTAL NUMBER OF POSITIVE SAMPLES FOR THE YEAR	DATE OF SAMPLING (MO./YR.)	TOTAL NUMBER OF POSITIVE SAMPLES FOR THE YEAR	MCLG	MCL	LIKELY SOURCE OF CONTAMINATION
Fecal coliform and E.coli [in the distribution system] (# positive samples)	No	NA	NA	1/12–12/12	1[1]	NA	NA	0	0	Human and animal fecal waste

		City of Clearwater			Pinellas County Utilities			Tampa Bay Water					
CONTAMINANT AND UNIT OF MEASUREMENT	MCL VIOLATION (YES/NO)	DATE OF SAMPLING (MO./YR.)	THE HIGHEST SINGLE MEASUREMENT	THE LOWEST MONTHLY PERCENTAGE OF SAMPLES MEETING REGULATORY LIMITS	DATE OF SAMPLING (MO./YR.)	THE HIGHEST SINGLE MEASUREMENT	THE LOWEST MONTHLY PERCENTAGE OF SAMPLES MEETING REGULATORY LIMITS	DATE OF SAMPLING (MO./YR.)	THE HIGHEST SINGLE MEASUREMENT	THE LOWEST MONTHLY PERCENTAGE OF SAMPLES MEETING REGULATORY LIMITS	MCLG	MCL	LIKELY SOURCE OF CONTAMINATION
Turbidity[2] (NTU)	No	NA	NA	NA	NA	NA	NA	8/12–12/12	0.98	100	NA	TT	Soil runoff

		City of Clearwater			Pinellas County Utilities			Tampa Bay Water					
CONTAMINANT AND UNIT OF MEASUREMENT	MCL VIOLATION (YES/NO)	DATE OF SAMPLING (MO./YR.)	LEVEL DETECTED	RANGE OF RESULTS	DATE OF SAMPLING (MO./YR.)	LEVEL DETECTED	RANGE OF RESULTS	DATE OF SAMPLING (MO./YR.)	LEVEL DETECTED	RANGE OF RESULTS	MCLG	MCL	LIKELY SOURCE OF CONTAMINATION
Alpha Emitters (pCi/L)	No	2/10/2012	3.6	ND–3.6	3/11	0.806	ND–0.806 -	4/12	3.9	NA	0	15	Erosion of natural deposits
Beta/Photon Emitters (pCi/L)	No	NA	NA	NA	NA	NA	NA	7/09	5.1	NA	0	50	Decay of natural and man-made deposits
Radium 226 + 228 [Combined Radium] (pCi/L)	No	2/10/2013	1.7	0.8–1.7	NA	NA	NA	4/12	2.4	NA	0	5	Erosion of natural deposits
Uranium (ppb)	No	02/10/2012	0.34	ND–0.34	NA	NA	NA	4/12	2	NA	0	30	Erosion of natural deposits
Inorganic Contaminants													
Antimony (ppb)	No	NA	NA	NA	NA	NA	NA	8/12, 9/12, 11/12	22	ND–22	6	6	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder
Arsenic (ppb)	No	2/10/2012	4.5	2–4.5	1/12	0.3	0.1–0.3	NA	NA	NA	NA	10	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Barium (ppm)	No	2/10/2012	0.021	0.0077–0.021	1/12	0.0179	0.0123–0.0179	NA	NA	NA	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Chromium (ppb)	No	2/10/2012	4.9	1.6–4.9	1/12	5.4	3.6–5.4	NA	NA	NA	100	100	Discharge from steel and pulp mills; erosion of natural deposits
Cyanide (ppb)	No	NA	NA	NA	1/12, 3/12	1.1	ND–1.1	NA	NA	NA	200	200	Discharge from steel/metal factories; discharge from plastic and fertilizer factories
Fluoride (ppm)	No	2/10/2012	0.18	0.14–0.18	1/12	0.27	0.12–0.27	NA	NA	NA	4	4.0	Erosion of natural deposits; discharge from fertilizer and aluminum factories; water additive that promotes strong teeth when at optimum levels between 0.7 and 1.3 ppm
Lead [point of entry] (ppb)	No	NA	NA	NA	NA	NA	NA	1/12, 4/12, 7/12	0.09	ND–0.09	NA	15	Residue from man-made pollution such as auto emissions and paint; lead pipe, casing, and solder
Mercury [inorganic] (ppb)	No	NA	NA	NA	NA	NA	NA	8/12	0.088	NA	2	2	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills; runoff from cropland
Nickel (ppb)	No	2/10/2012	3.1	0.92–3.1	1/12	1.9	0.6–1.9	NA	NA	NA	NA	100	Pollution from mining and refining operations; natural occurrence in soil
Nitrate [as Nitrogen] (ppm)	No	2/10/2012	0.13	0.03–0.13	1/12	0.05	ND–0.05	NA	NA	NA	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Nitrite [as Nitrogen] (ppm)	No	2/10/2012	0.02	ND–0.02	NA	NA	NA	1/12, 4/12, 7/12	0.06	ND–0.06	1	1	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Selenium (ppb)	No	2/10/2012	4.5	3.1–4.5	NA	NA	NA	4/12	0.96	NA	50	50	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines
Sodium (ppm)	No	2/10/2013	57	52–57	1/12	24.5	8.04–24.5	NA	NA	NA	NA	160	Salt water intrusion; leaching from soil
Thallium (ppb)	No	NA	NA	NA	NA	NA	NA	4/12	0.028	NA	0.5	2	Leaching from ore-processing sites; discharge from electronics, glass, and drug factories
Synthetic Organic Contaminants including Pesticides and Herbicides													
Dalapon (ppb)	No	1/18/2012, 2/10/2012, 4/3/2012, 7/13/2012, 7/17/2012, 10/8/2012	1.1	ND–1.1	1/12, 4/12, 7/12, 10/12	1.4	0.98–1.4	NA	NA	NA	200	200	Runoff from herbicide used on rights of way

SECONDARY CONTAMINANTS

CONTAMINANT AND UNIT OF MEASUREMENT	MCL VIOLATION (YES/NO)	City of Clearwater: DATE OF SAMPLING (MO./YR.)	City of Clearwater: HIGHEST RESULT	City of Clearwater: RANGE OF RESULTS	Pinellas County Utilities: DATE OF SAMPLING (MO./YR.)	Pinellas County Utilities: HIGHEST RESULT	Pinellas County Utilities: RANGE OF RESULTS	Tampa Bay Water: DATE OF SAMPLING (MO./YR.)	Tampa Bay Water: HIGHEST RESULT	Tampa Bay Water: RANGE OF RESULTS	MCLG	MCL	LIKELY SOURCE OF CONTAMINATION
Odor (Units)	No	NA	NA	NA	NA	NA	NA	4/12, 7/12, 10/12	16	ND–16	NA	3	Naturally occurring organics

Stage 1 Disinfectants and Disinfection By-Products

CONTAMINANT AND UNIT OF MEASUREMENT	MCL VIOLATION (YES/NO)	City of Clearwater: DATE OF SAMPLING (MO./YR.)	City of Clearwater: LEVEL DETECTED	City of Clearwater: RANGE OF RESULTS	Pinellas County Utilities: DATE OF SAMPLING (MO./YR.)	Pinellas County Utilities: LEVEL DETECTED	Pinellas County Utilities: RANGE OF RESULTS	Tampa Bay Water: DATE OF SAMPLING (MO./YR.)	Tampa Bay Water: LEVEL DETECTED	Tampa Bay Water: RANGE OF RESULTS	MCLG OR [MRDLG]	MCL OR [MRDL]	LIKELY SOURCE OF CONTAMINATION
Bromate (ppb)	No	NA	NA	NA	NA	NA	NA	1/12–12/12	3.22	ND–9.52	0	10	By-product of drinking water disinfection
Chloramines (ppm)	No	1/2012–8/2012, 10/2012–12/2012	4.8	0.4–4.8	1/12–12/12	3.7	1.5–5.8	NA	NA	NA	[4]	[4.0]	Water additive used to control microbes
Chlorine (ppm)	No	9/2012	4.5	0.7–4.5	1/12–12/12	3.7	1.5–5.8	NA	NA	NA	[4]	[4.0]	Water additive used to control microbes
Haloacetic Acids (five) [HAA5] (ppb)	No	1/11–1/12	29.87	NA	NA	NA	NA	NA	NA	NA	NA	60	By-product of drinking water disinfection
TTHM [Total trihalomethanes] (ppb)	No	4/11–1/12	58.95	NA	1/12	NA	18.4–51.5	NA	NA	NA	NA	80	By-product of drinking water disinfection

CONTAMINANT AND UNIT OF MEASUREMENT	ACUTE VIOLATIONS (YES/NO)	City of Clearwater: DATE OF SAMPLING (MO./YR.)	City of Clearwater: NON-ACUTE VIOLATIONS (YES/NO)	City of Clearwater: LEVEL DETECTED	Pinellas County Utilities: DATE OF SAMPLING (MO./YR.)	Pinellas County Utilities: NON-ACUTE VIOLATIONS (YES/NO)	Pinellas County Utilities: LEVEL DETECTED	Tampa Bay Water: DATE OF SAMPLING (MO./YR.)	Tampa Bay Water: NON-ACUTE VIOLATIONS (YES/NO)	Tampa Bay Water: LEVEL DETECTED	MRDLG	MRDL (AT THE ENTRANCE TO THE DISTRIBUTION SYSTEM)	LIKELY SOURCE OF CONTAMINATION
Chlorine Dioxide[3] (ppb)	No	NA	NA	NA	NA	NA	NA	8/12–12/12	NA	743	800	800	Water additive used to control microbes

CONTAMINANT AND UNIT OF MEASUREMENT	MCL VIOLATION (YES/NO)	City of Clearwater: DATE OF SAMPLING (MO./YR.)	City of Clearwater: HIGHEST MONTHLY AVERAGE (THREE SAMPLE SET COLLECTED IN THE DISTRIBUTION SYSTEM)	City of Clearwater: HIGHEST AVERAGE (THREE SAMPLE SET) FOLLOWING A DAILY MCL VIOLATION AT THE ENTRANCE TO THE DISTRIBUTION SYSTEM	Pinellas County Utilities: DATE OF SAMPLING (MO./YR.)	Pinellas County Utilities: HIGHEST MONTHLY AVERAGE (THREE SAMPLE SET COLLECTED IN THE DISTRIBUTION SYSTEM)	Pinellas County Utilities: HIGHEST AVERAGE (THREE SAMPLE SET) FOLLOWING A DAILY MCL VIOLATION AT THE ENTRANCE TO THE DISTRIBUTION SYSTEM	Tampa Bay Water: DATE OF SAMPLING (MO./YR.)	Tampa Bay Water: HIGHEST MONTHLY AVERAGE (THREE SAMPLE SET COLLECTED IN THE DISTRIBUTION SYSTEM)	Tampa Bay Water: HIGHEST AVERAGE (THREE SAMPLE SET) FOLLOWING A DAILY MCL VIOLATION AT THE ENTRANCE TO THE DISTRIBUTION SYSTEM	MCLG	MCL	LIKELY SOURCE OF CONTAMINATION
Chlorite (ppm)	No	NA	NA	NA	NA	NA	NA	8/12–12/12	0.0051	NA	0.8	1.0	By-product of drinking water disinfection

CONTAMINANT AND UNIT OF MEASUREMENT	TT VIOLATION (YES/NO)	City of Clearwater: DATE OF SAMPLING (MO/YR)	City of Clearwater: ANNUAL AVERAGE MONTHLY REMOVAL RATIO OR LOWEST ANNUAL AVERAGE MONTHLY REMOVAL RATIO	City of Clearwater: RANGE OF MONTHLY REMOVAL RATIOS	Pinellas County Utilities: DATE OF SAMPLING (MO/YR)	Pinellas County Utilities: ANNUAL AVERAGE MONTHLY REMOVAL RATIO OR LOWEST ANNUAL AVERAGE MONTHLY REMOVAL RATIO	Pinellas County Utilities: RANGE OF MONTHLY REMOVAL RATIOS	Tampa Bay Water: DATE OF SAMPLING (MO/YR)	Tampa Bay Water: ANNUAL AVERAGE MONTHLY REMOVAL RATIO OR LOWEST ANNUAL AVERAGE MONTHLY REMOVAL RATIO	Tampa Bay Water: RANGE OF MONTHLY REMOVAL RATIOS	MCLG	MCL	LIKELY SOURCE OF CONTAMINATION
Total Organic Carbon[4] (ppm)	No	NA	NA	NA	NA	NA	NA	8/12–12/12	3.94	3.88–4	NA	TT	Naturally present in the environment

Stage 2 Disinfectants and Disinfection By-Products

CONTAMINANT AND UNIT OF MEASUREMENT	MCL VIOLATION (YES/NO)	City of Clearwater: DATE OF SAMPLING (MO./YR.)	City of Clearwater: LEVEL DETECTED	City of Clearwater: RANGE OF RESULTS	Pinellas County Utilities: DATE OF SAMPLING (MO./YR.)	Pinellas County Utilities: LEVEL DETECTED	Pinellas County Utilities: RANGE OF RESULTS	Tampa Bay Water: DATE OF SAMPLING (MO./YR.)	Tampa Bay Water: LEVEL DETECTED	Tampa Bay Water: RANGE OF RESULTS	MCLG	MCL	LIKELY SOURCE OF CONTAMINATION
Haloacetic Acids (five) [HAA5]–Stage 2 (ppb)	No	2012	46	16–46	2012	56.6	6.2–56.6	NA	NA	NA	NA	60	By-product of drinking water disinfection
TTHM [Total trihalomethanes]–Stage 2 (ppb)	No	2012	100	52–100	2012	69.8	21.1–69.8	NA	NA	NA	NA	80	By-product of drinking water disinfection

Lead and Copper (Tap water samples were collected from sites throughout the community)

		City of Clearwater			Pinellas County Utilities			Tampa Bay Water					
CONTAMINANT AND UNIT OF MEASUREMENT	AL EXCEEDANCE (YES/NO)	DATE OF SAMPLING (MO./YR.)	90TH PERCENTILE RESULT	NO. OF SAMPLING SITES EXCEEDING THE AL	DATE OF SAMPLING (MO./YR.)	90TH PERCENTILE RESULT	NO. OF SAMPLING SITES EXCEEDING THE AL	DATE OF SAMPLING (MO./YR.)	90TH PERCENTILE RESULT	NO. OF SAMPLING SITES EXCEEDING THE AL	MCLG	AL (ACTION LEVEL)	LIKELY SOURCE OF CONTAMINATION
Copper [tap water] (ppm)	No	NA	NA	NA	6/11–7/11	0.000498	0	NA	NA	NA	1.3	1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead [tap water] (ppb)	No	NA	NA	NA	6/11–7/11	1.4	0	NA	NA	NA	0	15	Corrosion of household plumbing systems; erosion of natural deposits

[1] One non-acute sample for *E. coli* bacteria did not violate the MCL for the Total Coliform Rule because repeat samples were absent of any coliform contamination. Non-acute *E. coli* results were included within the monthly total coliform percentage. The MCL for fecal coliform is exceeded only when a fecal or *E. coli* positive sample is followed by a repeat sample that is positive for fecal, *E. coli*, or total coliform.

[2] Turbidity is a measure of the cloudiness of the water. It is monitored because it is a good indicator of the effectiveness of the filtration system. High turbidity can hinder the effectiveness of disinfectants. The result in the lowest monthly percentage column of the contaminant table is the lowest monthly percentage of samples meeting the turbidity limits reported in the Monthly Operating Report.

[3] For chlorine dioxide, the level detected is the highest single measurement collected at the entrance to the distribution system. Acute MRDL violation: If any daily sample taken at the entrance to the distribution system exceeds the MRDL, and on the following day one or more of the three samples taken in the distribution system exceed the MRDL, then the system is in violation. In addition, failure to take samples in the distribution system the day following an exceedance of the chlorine dioxide MRDL at the entrance to the distribution is also considered an acute MRDL violation. Non-acute MRDL violation: If any two consecutive daily samples taken at the entrance to the distribution system exceed the MRDL and all distribution system samples are less than the MRDL, the system is in violation of the MRDL.

[4] The monthly TOC removal ratio is the ratio between the actual TOC removal and the TOC rule removal requirements.

Definitions

AL (Action Level): The concentration of a contaminant that, if exceeded, triggers treatment or other requirements that a water system must follow.

IDSE (Initial Distribution System Evaluation): An important part of the Stage 2 Disinfection Byproducts Rule (DBPR). The IDSE is a one-time study conducted by water systems to identify distribution system locations with high concentrations of trihalomethanes (THMs) and haloacetic acids (HAAs). Water systems will use results from the IDSE, in conjunction with their Stage 1 DBPR compliance monitoring data, to select compliance monitoring locations for the Stage 2 DBPR.

LRAA (Locational Running Annual Average): The average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters.

MCL (Maximum Contaminant Level): The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

MCLG (Maximum Contaminant Level Goal): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

MRDL (Maximum Residual Disinfectant Level): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

MRDLG (Maximum Residual Disinfectant Level Goal): The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

NA: Not applicable

ND (Not detected): Indicates that the substance was not found by laboratory analysis.

NTU (Nephelometric Turbidity Units): Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

pCi/L (picocuries per liter): A measure of radioactivity.

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppm (parts per million): One part substance per million parts water (or milligrams per liter).

TON (Threshold Odor Number): A measure of odor in water.

TT (Treatment Technique): A required process intended to reduce the level of a contaminant in drinking water.

Clearwater's Groundwater Replenishment Program

Potable Reuse for Florida: A Full Day Workshop for Elected Officials

Orlando, FL

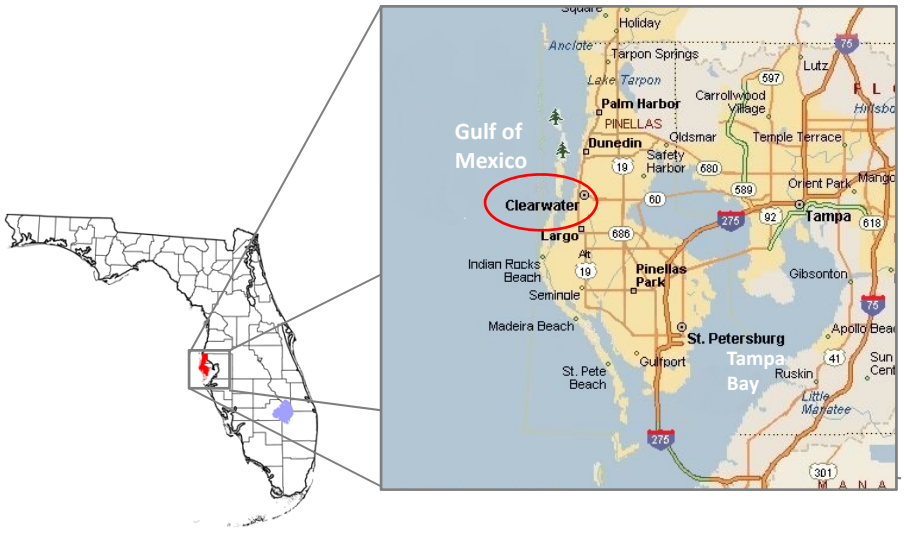
March 22, 2013

Nan Bennett, P.E.
Public Utilities Assistant Director
City of Clearwater

Project Team

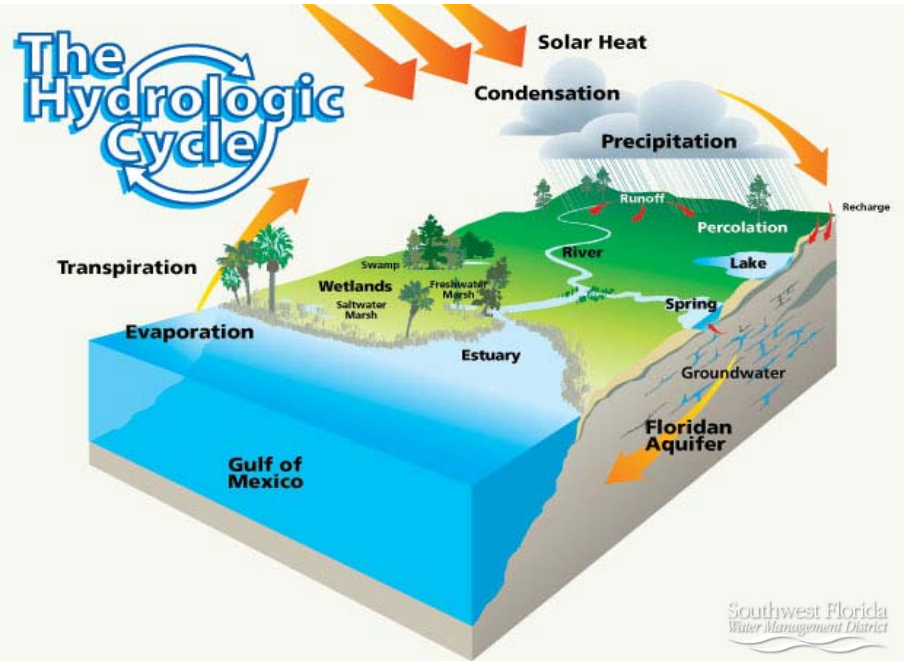
- Public Utility Owner
- Cooperative Funding Partner
- Engineering Consultant
- Hydrogeology Consultant

Project Location

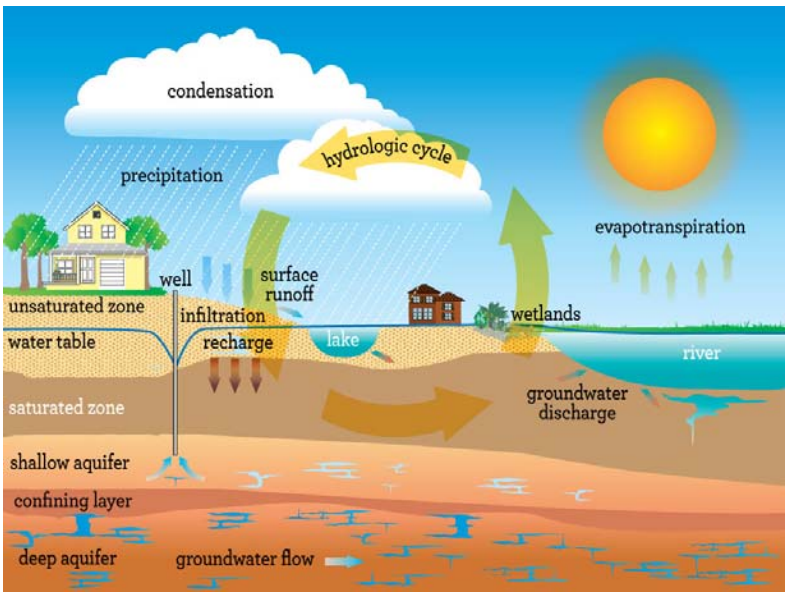


Clearwater Public Utilities Mission Statement

Public Utilities is dedicated to providing high-quality water, wastewater & reclaimed services while ***protecting the public health*** *and natural environment of our community through cost effective management, operating and maintenance of our infrastructure sustaining these essential services.*



Community Water Cycle



Integrated Water Management Strategy

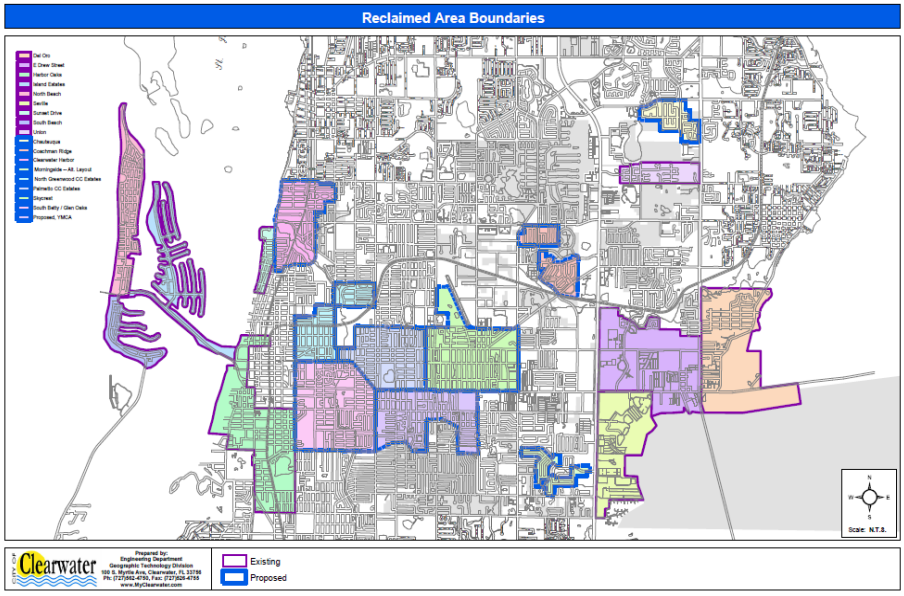
A holistic approach that brings together all facets of the water cycle —

- water supply and treatment,
- sewage collection and treatment,
- purification,
- reuse and disposal.

Clearwater Integrated Water Management Tactics

1. Conserve limited water supplies
2. Preserve drinking water sources
3. Protect coastal environment
4. Produce more water locally
5. Manage the rising cost of water

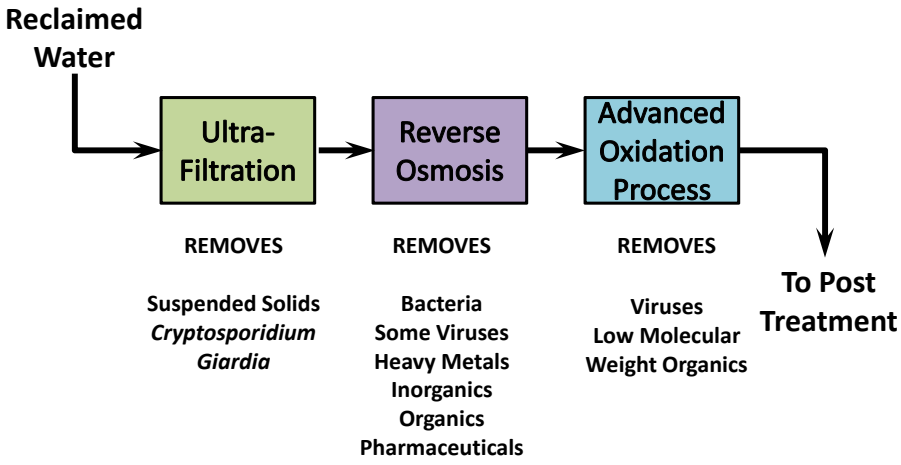
City Initiated Reclaimed Projects



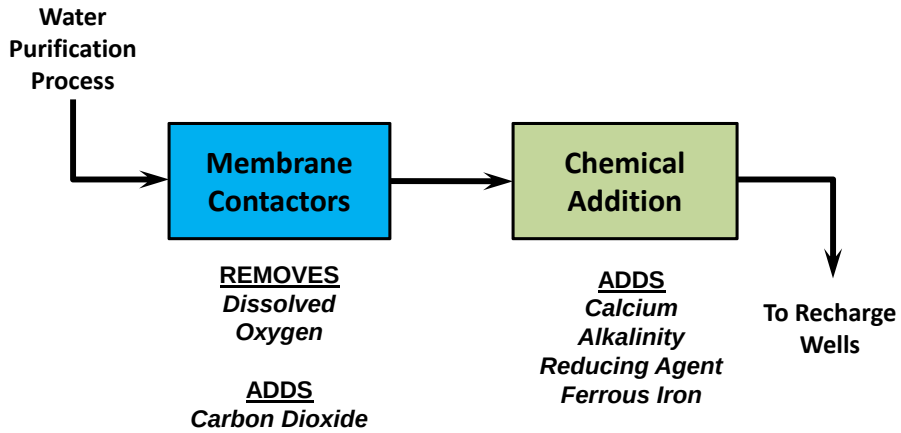
Clearwater Groundwater Replenishment Project Statement

The Project proposes to construct a water purification plant on the site of the City of Clearwater's existing Northeast Water Reclamation Facility for the purpose of supplying 3 MGD (million gallons per day) of highly treated water to recharge lower Zone A of the Floridan Aquifer.

Purification Process Block Diagram



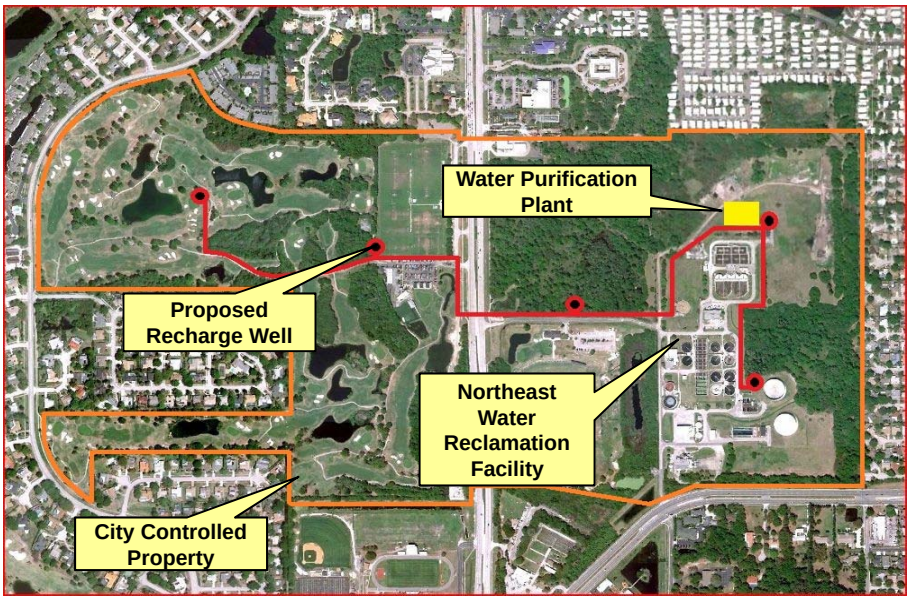
Post Purification Treatment



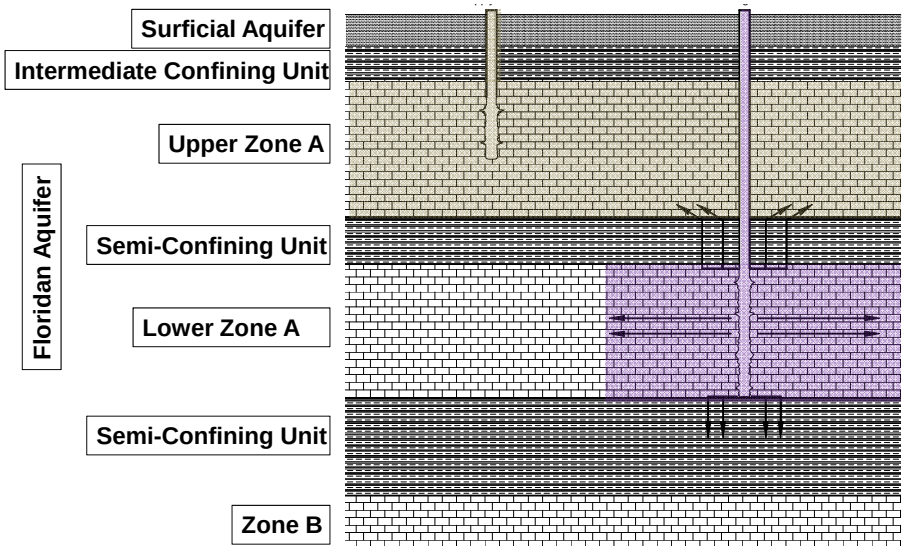
Water Quality Comparison

Parameter	Purified Water	Native Groundwater
Total Dissolved Solids, mg/L	27	620
Calcium, mg/L	1.1	80
Magnesium, mg/L	0.2	17
Sodium, mg/L	6.5	170
Iron, mg Fe^{++}/L	<.01	.05
Arsenic, µg/L	<1.0	<1.0
Alkalinity, mg $CaCO_3$/L	10.5	160
Chloride, mg/L	6.1	330
Sulfate, mg/L	0.8	16
pH	5.5	7.5
Dissolved Oxygen, mg/L	>6.0	0.3
ORP, mv	+	-307

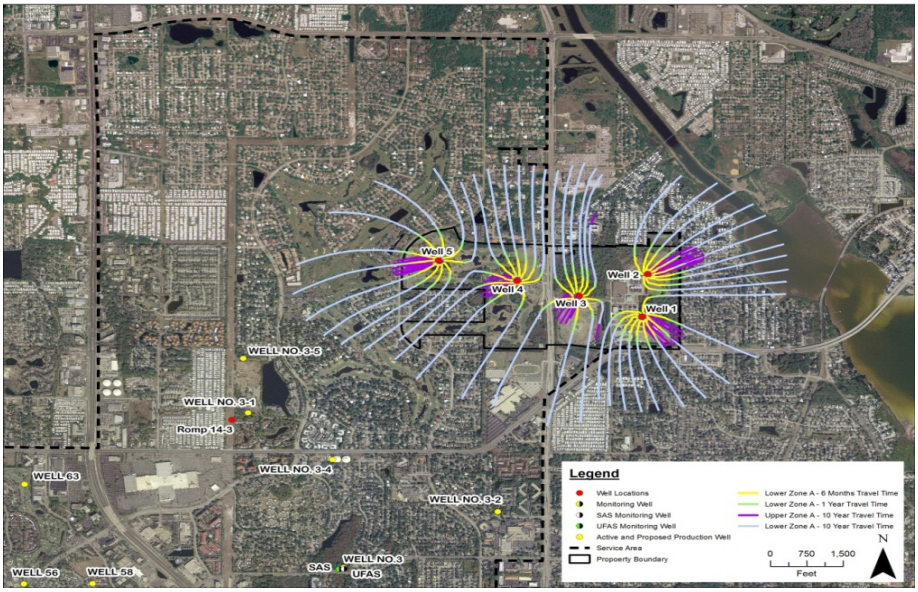
Conceptual Recharge System Design

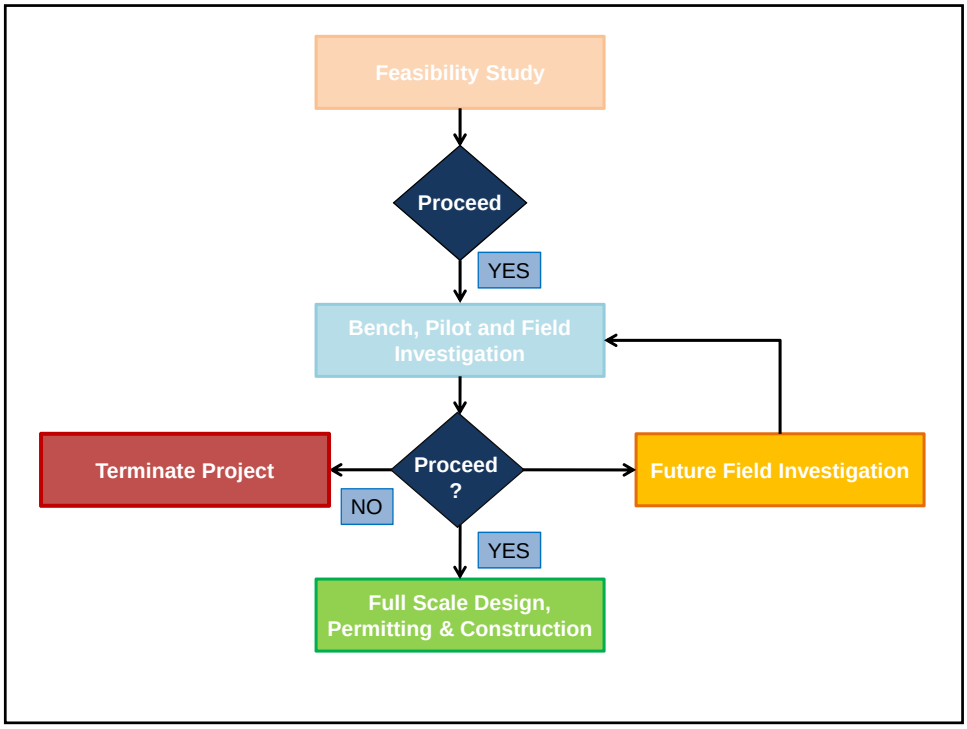


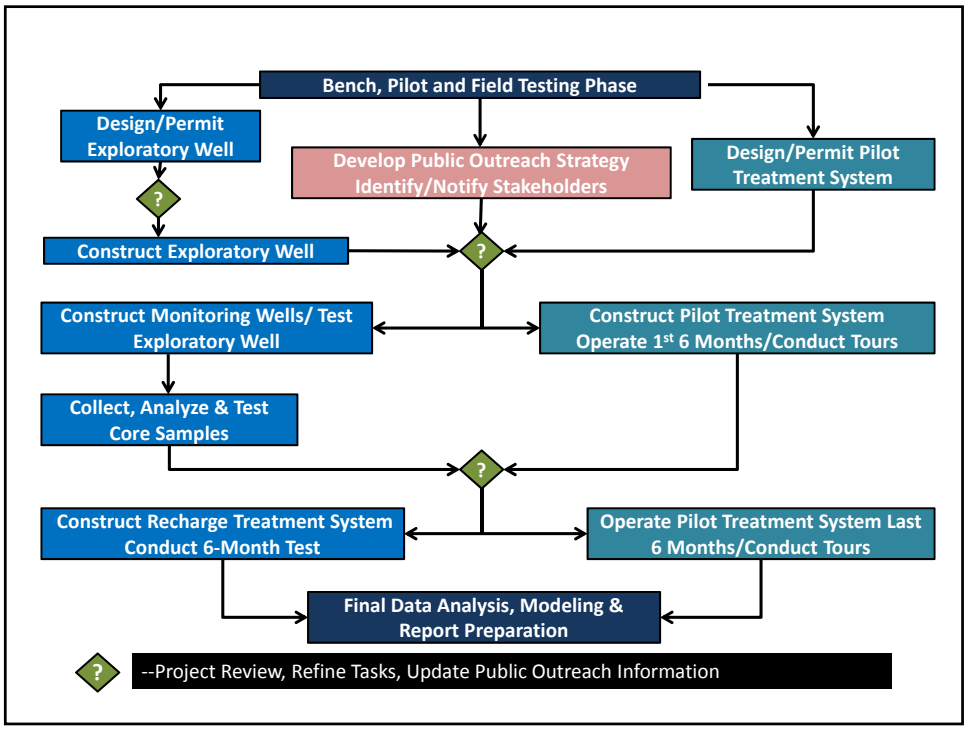
Recharge Well Operation



Model Particle Tracks




Feasibility Study
Proceed
YES
Bench, Pilot and Field Investigation
Terminate Project
Proceed ?
Future Field Investigation
NO
YES
Full Scale Design, Permitting & Construction


Bench, Pilot and Field Testing Phase
Design/Permit Exploratory Well
Develop Public Outreach Strategy Identify/Notify Stakeholders
Design/Permit Pilot Treatment System
?
Construct Exploratory Well
?
Construct Monitoring Wells/ Test Exploratory Well
Construct Pilot Treatment System Operate 1st 6 Months/Conduct Tours
Collect, Analyze & Test Core Samples
?
Construct Recharge Treatment System Conduct 6-Month Test
Operate Pilot Treatment System Last 6 Months/Conduct Tours
Final Data Analysis, Modeling & Report Preparation
?
--Project Review, Refine Tasks, Update Public Outreach Information

Case for Groundwater Replenishment with Purified Water

- Safe, crystal clear, odorless
- Extends existing supplies
- Cost effective
- Extend timeframe for developing more costly supplies

Southwest Florida Water Management District

Questions?

Nan Bennett, P.E.
Public Utilities Assistant Director
City of Clearwater
Nan.Bennett@MyClearwater.com

Clearwater Groundwater Replenishment Feasibility Study (N179)

Talking Points

General Talking Points:

- The Southwest Florida Water Management District provides support and funding for local government projects to beneficially use reclaimed water to help meet the region's water supply needs.
- Aquifer recharge is used to improve water levels within the aquifer and provide additional water supplies.
- Today's technologies have the capability to purify reclaimed water to safely replenish the aquifer.
- Aquifer recharge using reclaimed water is being safely used throughout the country and the world.
- The District will only recommend implementing reclaimed water aquifer recharge projects if they are safe for people and the environment.

Clearwater Groundwater Replenishment Feasibility Study Information:

- The goal of this project is to study the potential to improve water levels within the City of Clearwater and to evaluate the potential for additional withdrawals from their existing wellfields.
- The study will determine the water level improvements from directly recharging up to 1 million gallons per day of purified reclaimed water into a brackish water zone of the Upper Floridan aquifer.
- If the project proves feasible, it is anticipated that the city will expand the aquifer recharge system up to 3 million gallons per day.
- Testing Phase of Investigation
    i. One test injection well and associated monitoring wells have been installed at the project site.
    ii. Construction of Water Purification Pilot Plant is underway. Completion and start up in May 2013.
    iii. Plant will be in operation for one year. Metals leaching study to be concluded at the end of the test.
    iv. Six month potable water aquifer injection test on the injection well starting this summer.

Recharge Challenges:

Unintended water quality issues

- Address arsenic issues arising from direct injection

Flooding

- Ensure raised groundwater levels won't cause flooding

Water quality perception

- Overcome public misconceptions about water quality safety
    - Today's technologies have the capability to purify reclaimed water to safely replenish the aquifer.
    - The District will only recommend implementing projects if they are safe.

Funding

- Potential limits on available funding for future projects

District's 2012 Public Perception Survey Results (For Your Information):

- The survey revealed that the term "purified water" should be used in order to increase the acceptance of reused water for drinking and other uses. Purified water was the most understood term of the reclaimed water terms that were tested and it had the most positive image, even higher than the term "drinking water."

- The following scenario tested the best:

    - Only three percent of the world's water is drinkable and that water has been reused over and over again for millions of years. Water is used by people and animals and then it returns to our rivers, lakes and aquifers, where it is withdrawn, treated and used again.

-----Original Message-----
From: no_reply@ [mailto:myclearwater.com no_reply@myclearwater.com]
Sent: Wednesday, June 19, 2013 10:49 AM
To: Parsons, Heather
Subject: City of Clearwater - Drinking Water Quality Report Now Available

This is an automated message - PLEASE DO NOT REPLY

This email message is in response to you signing up with City of Clearwater - Green & Energy News

FOR IMMEDIATE RELEASE
June 19, 2013

Drinking Water Quality Report Now Available

CLEARWATER, Fla. - The City of Clearwater Public Utilities Department released its annual Water Quality Report. The report contains pertinent water quality information of interest to Clearwater residents. As part of the U.S. Environmental Protection Agency's "Safe Drinking Water Act Amendments," all water systems throughout the country must publish this annual report.

"I am pleased that our water quality meets or exceeds national drinking standards. This is a testament to the great job our employees do in performing their daily work to secure the integrity and safety of our water system," said Tracy Mercer, Public Utilities Director.

A copy of the Water Quality Report is being mailed to all customers. Additional copies of the report are available at City Hall, in Customer Service at the Municipal Services Building, and at public libraries. You can read it online at http://myclearwater.com/gov/depts/pwa/public_utils/pdf/water_report.pdf. The report also is available in Spanish.

To learn more about the city's water quality or to request a copy by mail, call (727) 562-4960 or visit myclearwater.com.

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City of Clearwater Web site - http://www.myclearwater.com

If you want to remove yourself from the mailing list click on the link below and enter your email address in the space provided:

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POST OFFICE BOX 4748, CLEARWATER, FLORIDA 33758-4748
MUNICIPAL SERVICES BUILDING, 100 SOUTH MYRTLE AVENUE, CLEARWATER, FLORIDA 33756
TELEPHONE (727) 562-4682 FAX (727) 562-4696

PUBLIC COMMUNICATIONS

FOR IMMEDIATE RELEASE
June 19, 2013

Contact:
Heather Parsons
(727) 562-4708

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Southwest Florida Water Management District
WATERMATTERS.ORG · 1-800-423-1476

Reclaimed Water Aquifer Recharge Feasibility Study Fact Sheet

Who conducted this study?

This study was funded by the Southwest Florida Water Management District. The study is the result of partnership meetings between the District and representatives of the cities of Lakeland, Plant City and Tampa; Hillsborough and Polk counties; Mosaic Fertilizer; TECO; Tampa Bay Water and the Florida Department of Environmental Protection to maximize the beneficial use of reclaimed water in the region.

What is reclaimed water aquifer recharge?

There are two types of aquifer recharge: direct and indirect. Reclaimed water can be used in both technologies as long as the water quality meets all regulatory requirements.

Direct recharge involves the injection of water directly into the aquifer through wells. This study assessed the injection of highly treated reclaimed water into the Upper Floridan aquifer.

Indirect recharge involves applying water to the land surface that would allow water to move down into an aquifer. An example of this technology is rapid infiltration basins (RIBs). This study assessed the application of highly treated reclaimed water into RIBs. Indirect recharge using RIBs is a commonly accepted practice with more than 90 million gallons per day of treated wastewater already being indirectly recharged into the aquifer through more than 160 systems around the state.

Where did this study focus?

This study looked at the feasibility of using reclaimed water for both direct and indirect aquifer recharge in southern Hillsborough and Polk counties to improve water levels and provide opportunities for additional groundwater withdrawals.

Why did the District conduct this feasibility study?

This study is part of an ongoing effort to maximize the beneficial use of reclaimed water in the region. Aquifer recharge is used in other areas of the country.

Reclaimed water aquifer recharge could provide many benefits, which include:

- Maximizing the beneficial use of reclaimed water in the region.
- Improving water levels in the Southern Water Use Caution Area's (SWUCA) Most Impacted Area (MIA).
- Meeting pollutant loading limits known as Total Maximum Daily Loads (TMDLs) in Tampa Bay.
- Creating opportunities for new groundwater withdrawals.
- Slowing saltwater intrusion along the coast.
- Potentially improving the water quality of brackish groundwater areas along the coast.

What did this feasibility study look at?

The study included three phases, which looked at current Florida Department of Environmental Protection and District permitting requirements, potential injection locations and amounts, potential withdrawal locations and amounts, and the associated costs. The study also looked at similar projects located around the world, reclaimed water quality in the region, current aquifer water quality, existing permitted water users, and existing groundwater contamination sites.

What did the study find?

Overall, the study found that it is possible to develop direct and indirect aquifer recharge projects to improve Upper Floridan aquifer water levels and provide opportunities for additional groundwater withdrawals.

Indirect Recharge:

The study found that ridge areas within the District, such as the Lake Wales Ridge, would be good locations for indirect recharge using RIBs because there is a high degree of connection between the surficial aquifer and the Upper Floridan aquifer. In addition, these areas consist of thick surficial sands that provide the capacity to receive and store large quantities of water. The Lakeland area may also be a good location for indirect recharge using RIBs but does not provide as much connection between the surficial aquifer and the Upper Floridan aquifer.

Models showed that 5 million gallons a day of indirect recharge could potentially produce up to 4 million gallons a day in nearby withdrawals of potable water. This technology would provide a more local benefit, rather than a regional benefit.

The cost to implement indirect recharge would be similar to other alternative water supplies currently being used such as reservoirs, aquifer storage and recovery and desalination. Conceptual indirect recharge and withdrawal combinations are estimated to cost about $4.00 per 1,000 gallons, which does

not include the cost of acquiring reclaimed water. Actual costs will also vary based on location and site-specific conditions.

Direct Recharge:

The study modeled 50 scenarios of potential recharge sites and amounts as well as potential withdrawal sites and amounts. The models generally focused on injecting 20 million gallons per day of highly treated reclaimed water and withdrawing between 10 to 18 million gallons per day of native ground water further inland.

Overall, the study found that southern Hillsborough County's coastal areas provide the most cost effective location for recharge wells. Less treatment is needed before injection because the existing aquifer water quality is poor and there are fewer permitting requirements. Coastal injection will also provide a secondary benefit of creating a salinity barrier. Inland recharge would cost more due to additional permitting and water treatment requirements. This technology would provide a regional benefit to the area.

Overall costs for both coastal and inland direct recharge would be similar to other alternative water supplies currently being used such as reservoirs, aquifer storage and recovery and desalination. Conceptual coastal recharge and withdrawal combinations are estimated to cost between $3.50 to $4.50 per 1,000 gallons. Inland recharge and withdrawal combinations are estimated to cost between $6 to $8 per 1,000 gallons. These costs do not include the cost of acquiring reclaimed water. Actual costs will vary based on location and site-specific conditions.

What's Next?

Local governments and utilities can submit a cooperative funding request for direct and indirect aquifer recharge projects. However, direct recharge projects will require additional studies and pilot projects. All projects are subject to Florida Department of Environmental Protection permitting requirements.

Notes from the 2013 WateReuse Symposium
Panel Discussion: Public Acceptance of Direct Potable Reuse

Linda Macpherson, CH2M Hill
Innoculation (in advance of resistance) includes both education & a small amount of the expected attack. Example "Downstream" video showing a picture of a toilet.

1. Emphasis relationship versus the parts
2. Understand the water cycle
3. Pay attention to the unintended message

Public can understand that it is the quality of the finished water – not the history.

Marsi Steirer, San Diego Public Utilities Department (San Diego AWPF)
$700K/year for public outreach since 2007
Emphasize the urban water cycle
Suggest pre-empting local media to write a science article about the project.
Safety – multi barriers
Testing and monitoring
Oversight (10 member IAP – all PH.Ds - $750/each plus travel costs)

1. Need versus cost
2. Safety of water
3. Regulatory involvement

Eleanor Torres, Orange County Water District (Orange County GWRS)
1200 presentations, News articles, 700 tours (FY 12-13 –168 tours with 3700 guests)
Filters make people feel safe
OC detected NDMA and called a press conference to acknowledge, compare to hotdogs & beer and say what they were going to do about it.

1. Consistent messaging and branding
2. Get written commitments
3. Tours, tasting and bottling water as an educational tool

When people see the project and taste it - they trust it.

Notes from the 2013 WateReuse Symposium
Panel Discussion: Public Acceptance of Direct Potable Reuse (cont.)

Patsy Tennyson, Katz & Associates

Potential Problems

1. Toilet to tap
2. Political cycles
3. Environmental justice
4. Competing water supplies
5. PPCP (the more accepted term that CECs)

Goals

1. Clearly state need and purpose of your project
2. Take note and address all potential problems (above)
3. Show the value of your project to your community
4. Urban water cycle

Use the word SAFE – not low risk.

innovation & job news

Clearwater To Build 2nd Reverse Osmosis Water Plant

TUESDAY, MAY 21, 2013

RELATED TAGS

ARCHITECTURE, ENVIRONMENT, GOVERNMENT, SUSTAINABILITY

CLEARWATER

The City of Clearwater's sustainability initiatives continue as they break ground on the second reverse osmosis (RO) water treatment plant.

The plant, located on U.S. Highway 19 N., will use state-of-the-art technology to treat up to 6.25 million gallons of brackish (or slightly salty) water, turning it into clean drinking water for city residents.

Reverse osmosis, also known as hyperfiltration, is a water purification process that is used by major bottled water companies. It reduces the salts, minerals, ions and other impurities, leaving high quality drinking water. The brackish water would not be drinkable without the RO process and doesn't have alternative uses.

The $34 million project is being funded cooperatively by the Southwest Florida Water Management District and has created new jobs for contractors, electrical engineers, plumbers and construction workers.

The plant is part of the city's integrative water management strategy, which includes five tactical areas: in-home water conversation including the use of reclaimed water; preservation of drinking water resources; protecting the coastal environment by decreasing discharge to local bodies of water; producing more locally; and cost management.

"Everything we do in public utilities is to try to be sustainable as possible, and to responsibly use the water resources we have," says Nan Bennett, assistant director or public utilities for the City of Clearwater.

In an innovative move, the city is taking the concentrate, a salty by-product produced by its existing RO plant and treating it again in the second plant, allowing less water to be withdrawn from the ground supply. Another project currently in the pilot phase involves ground water replenishment, or taking leftover reclaimed water, treating it through the RO process and injecting it back into the aquifer. This creates a complete water cycle, naturally balancing the water supply.

Construction will begin in June, with estimated completion in December 2014.

Writer: Megan Hendricks
Source: Nan Bennett, Tracy Mercer, City of Clearwater

MANAGER'S **VIEWPOINT**

The City Manager's E-Letter to City of Clearwater Employees

May **2013**

Last month was particularly busy, and I'm pleased to see all the great things happening in Clearwater. Thank you to you all for working so hard and making the city look good. Here are some important news items I'd like to share with you:

FUN 'N SUN & SUGAR SAND FESTIVAL RECAP

Last month was a spectacular time to enjoy Clearwater. The Fun 'n Sun Festival celebrated its 60th year Anniversary and took place from April 19 to 28. It featured several of Clearwater's greatest destinations: Clearwater Beach, Bright House Field, the Cleveland Street District, and city parks. Of course the concerts at Coachman Park are one of the festival's best highlights, with more than 16,000 people in attendance.

The Frenchy's Sugar Sand Festival brought Clearwater's sugary white sands to life in fantastic sand sculptures, which drew thousands to the beach daily (the festival's overall estimated attendance was 52,890 people!). The event took place during the Fun 'n Sun Festival and featured Frenchy's Master Sand Sculpting Competition, sand sculpting clinics, speed sand demonstrations, a children's play area, six nights of free movies, and a Sugar Sand Walk Exhibition walk-through display. It was an amazing ten days for sure, and I hope that you and your family were able to enjoy it.

HYDRATION & SUMMER HEAT

Sweltering summer heat is here, and field and outdoor employees feel it the most. Keep cool and stay hydrated at work by drinking lots of water. According to the American Red Cross, heat-related emergencies are progressive conditions caused by overexposure to heat. There are three types of heat-related emergencies:

- Heat cramps are painful muscle spasms that usually occur in the legs and abdomen.
- Signs of heat exhaustion include heavy sweating, weakness, exhaustion, headache, nausea, dizziness, and skin that is cool, moist, pale, ashen, or flushed.
- Heat stroke, a life-threatening condition, happens when the body's systems are overwhelmed by heat and stop functioning. Signals include loss of consciousness, vomiting, and skin that is red, hot, dry, or moist.

In addition to dressing in lightweight clothes, employees should stay hydrated, carry water or juice with them, and avoid caffeine, as it dehydrates the body. If you or a worker is suffering from a heat-related emergency, move the person to a cool place and help them to cool down. If they refuse water, vomit, or lose consciousness, call 9-1-1.

WATER FOUNTAINS

Last May, twenty of the city's busiest facilities were outfitted with new water fountains as part of the city's employee wellness program, and the rest soon will have new hands-free bottle fillers installed as well. Locations to receive fountains this year include all fire and police stations, City Hall (all levels), Municipal Services Building (Levels 2 and 3), Water Pollution Control facilities, and the Armory building. The goal of this program is to increase employee and public access to drinking water and to reduce the number of plastic bottles that get thrown away each day.

UTILITY & WATER PROJECTS

The Public Utilities department has some significant projects in the making. One of the department's goals is to produce nearly all of the water city residents and businesses consume. Currently, utility customers use about 11 million gallons of water per day (MGD). The city produces about 5.9 MGD at its water plants – about half of the city's water usage – and purchases the rest from Pinellas County Utilities. Three important projects will help the city to meet this goal of water independence:

Expansion of RO1 Facility

The first project currently is underway; it's the expansion of the city's existing reverse osmosis, or RO, water plant on Palmetto Street. Reverse osmosis is a water treatment process that purifies water by removing dissolved particles, minerals, and ions. Once complete, this expansion will enable the city to produce an additional 1.5 MGD, for a grand total of 4.5 MGD. The notice to proceed with construction was given Jan. 14, 2013, and the plant is expected to be finished and online in January 2014.

Addition of a New RO2 Water Plant

The City of Clearwater broke ground this week on its second RO water treatment plant. Mayor George N. Cretekos, Councilmembers, and city and Southwest Florida Water Management District officials attended the kickoff of the Reverse Osmosis Water Treatment Plant No. 2 project, which will be located at 21133 U.S. Highway 19 N. in Clearwater. The new plant will treat up to 6.25 MGD of brackish (or slightly salty) water using state-of-the-art technology to produce additional potable water for Clearwater customers. Two storage tanks will be built as well. Construction is anticipated to begin in June 2013 and be completed in December 2014.

Groundwater Replenishment

The city is conducting a study to determine the viability of proceeding with a full-scale 3 MGD water purification facility to recharge the Upper Floridian Aquifer. The city is currently in the pilot and demonstration phase and is working in collaboration with the Southwest Florida Water Management District. The goal is to increase the safe yield of groundwater withdrawals for future drinking water supply. A project update was presented to City Council May 1 and is available on streaming video at *myclearwater.com*.

HOMELESSNESS UPDATE

The final report for the 2013 homeless count will be available in the middle of this month. Geri Campos-Lopez, Director of Economic Development and Housing, will represent the City of Clearwater in the Funders Council subcommittee of the Homeless Leadership Board; and Ekaterini Gerakios, Community Development Manager, will be part of the task force to create a regional marketing plan to educate the Pinellas County's general public on homelessness. This is an effort led by State Rep. Kathleen Peters and is co-sponsored by the Homeless Leadership Board and The Art Institute of Tampa.

STRATEGIC VISIONING

City staff and Council recently embarked on a new process to update the city's vision and mission, develop strategic priorities, identify initiatives to implement priorities, and secure community involvement. Two brainstorming sessions were held last week; one on April 29 was with business groups, Chambers of Commerce, and the Downtown Partnership organization, and one on April 30 was with the Clearwater Neighborhood Coalition and other neighborhood leaders. Interactive roundtable discussions were presented for each topic, and detailed exercises focused on what should be included in Clearwater's future. Councilmembers participated in the process and heard first-hand from stakeholders what they want Clearwater to become. The next step is bringing the new vision and mission to constituents. I'll keep you updated as this process continues.

Thank you for your efforts and the work you do every day!

Sincerely,

Bill

EMPLOYEES ARE TAKING THE STEPS CHALLENGE

We're in the midst of the "Just Walk 10,000 Steps a Day" walking challenge, which ends Sunday, May 26. I've been wearing my pedometer to count my steps, and I hope you are, too. Participation so far has been great – 481 employees have walked more than 69,000 miles (almost 149 million steps). Log your daily steps online at www.cornerstonefitness.com/clearwater/10ksteps.html. Prizes will be awarded at the end of the challenge and include a Cigna duffel bag (112,000 steps), a new pair of running/walking shoes from Fit2Run (some of which are shown, for 336,000 steps), one of five randomly drawn $200 gift cards to Sports Authority (560,000 steps), and - for the winning department - an evening in the city's Clearwater Threshers suite.

FOR IMMEDIATE RELEASE: June 10, 2013

CONTACT: DEP Press Office, 850.245.2112, DEPNews@dep.state.fl.us

FLORIDA GEOLOGICAL SURVEY COLLABORATES TO STUDY GROUNDWATER IN PINELLAS COUNTY

~Study will investigate effects of recharging the Floridan Aquifer with purified reclaimed water for the city of Clearwater~

TALLAHASSEE – The Florida Department of Environmental Protection's Florida Geological Survey is participating in a study that will investigate the effects of recharging up to 3 million gallons per day of purified reclaimed water into the Suwannee Limestone of the Upper Floridan aquifer at the Northwest Wastewater Treatment Facility.

"The Florida Geological Survey is excited to contribute to this important project by helping provide an understanding of complex water-rock interactions that can help the people of Clearwater," said Cindy Fischler, a professional geologist with the Florida Geological Survey. "With at least 90 percent of the state's population relying on the Floridan aquifer for drinking water resources, the information gathered is vital to the study."

In partnership with the University of Florida and IndeWater, LLC, the groundwater replenishment study is being led by Tetra Tech and Leggette, Brashears & Graham, Inc. for the city of Clearwater and the Southwest Florida Water Management District. The project is currently underway and is expected to be completed in one year.

The Florida Geological Survey's portion of the study, which includes a $13,200 grant from the University of Florida, will begin in July with multiple methods of geochemical analysis of rock samples taken from the aquifer. The samples will be taken from pre-leached rock — rock that has not been exposed to pretreated waters — and post-leached rock.

When water is injected during aquifer recharge it interacts with the rock, which can lead to trace metals leaching from the rock into the groundwater. The analysis conducted by the Florida Geological Survey will reveal the minerals and trace metals present in the rock and the changes between the pre and post-leached rock. This information will be used to experiment with different water treatment processes in the lab and in the field to determine a pre-treatment method for the injected water, which will minimize trace metal mobilization into the aquifer at the Clearwater site.

The Floridan aquifer system, which underlies all of Florida, is the main source of drinking water for much of the state. Groundwater, pumped primarily from the Floridan aquifer system, provides at least 90 percent of the drinking water that Floridians use for their drinking water. The Florida Geological Survey focuses on studying groundwater with emphasis on its chemistry, movement and relation to geologic environment in order to help keep the public's drinking water clean and safe.

"A study is underway that could help the city of Clearwater ensure the availability of more drinking water in the future," said Tracy Mercer, Public Utilities Director of the city of Clearwater. "This study will measure the potential to improve groundwater levels within the city so more drinking water will

be available by directly adding up to 3 million gallons a day of purified reclaimed water into a brackish water zone below the freshwater zone of the Upper Floridan aquifer."

For more information on Florida Geological Survey projects, please visit http://www.dep.state.fl.us/geology/default.htm .


my CLEARWATER
Fall 2013 Sept.–Dec.
MyClearwater.com

From the City Arborists: Tree Removal Information

Within Clearwater, most trees are considered protected trees. A protected tree is one that is four inches or greater in diameter at breast height (DBH). DBH is measured at four-and-one-half feet above the ground. Palms with 10 feet of clear trunk, measured from the ground up to the first frond, are also protected trees.

Protected trees require permits before they can be removed or relocated. A permit is not granted for the removal of a "specimen tree" or "historic tree." These are trees the city determines to be of high value to the community because of type, size, age, exceptional quality or other professional criteria. There are some types of trees that are prohibited in the city and do not require a permit for removal. However, it is best to get city staff to confirm this before removing a tree.

The replacement of protected trees and palms is usually required. This may be done by planting other acceptable trees of the equivalent value/size or by paying a fee in lieu of replacement to the city's tree bank. City staff will work with the applicant to determine the appropriate conditions of approval. Please be aware of the following:

- A completed application and a $15 fee must be submitted to be considered for a permit, prior to tree removal. Up to five trees can be removed under one tree removal permit.
- Too extensive or improper tree trimming is often considered a removal. This can result in the death of the tree and/or create a hazardous tree that poses a threat to people and property.
- Removal of a protected tree without a permit can result in fines up to $5,000. The property owner is responsible for this fine. If a tree service or contractor is involved, they will also face fines.
- Contractors must remove all tree debris and are prohibited from leaving debris curbside for City of Clearwater collection.
- If you hire a contractor to work on your property, make sure that he or she is licensed and insured.

Contact the city's Land Resource Specialist at 562-4567 with tree questions.

Reminder: Reclaimed Water

The city reminds utility customers that reclaimed water use is encouraged and is available every day. As we go to press, there are no restrictions to the number of days that Clearwater residents can use reclaimed water. You may see other cities or counties asking their residents to limit their reclaimed water use due to supply and demand issues. These limits do not apply to reclaimed water in Clearwater. All locations that use reclaimed resources to water lawns may continue to do so on any day, before 10 a.m. and after 4 p.m. Information about watering restrictions is available online at *myclearwater.com/watering* or by calling the Water Conservation Hotline at 562-4WTR.

Log on and Give us your Input!

If you would like to let the city know what you think but don't have time to attend an evening meeting, there is a new tool for you. Go to *myclearwaterinput.com*, register, and share your thoughts about the visioning process, the new design for the Countryside Library, or the Parks & Recreation plans for the next ten years. All three of these topics are currently open for discussion and you can give your input from the comfort of your own home. Log on to *myclearwaterinput.com* and let us know what you think.

Groundwater Replenishment

A study is underway that could help the city ensure the availability of more drinking water in the future. Beneath the city, the fresh water from the Upper Floridan aquifer used for drinking water sits on top of a layer of brackish, or somewhat salty, water. By carefully balancing the aquifer level and water withdrawals, fresh water can be protected from becoming salty. This study will measure the potential to improve groundwater levels within the city so more drinking water will be available. The study will determine how much the groundwater level can be improved by directly adding up to one million gallons a day of purified reclaimed water into a brackish water zone below the freshwater zone of the Upper Floridan aquifer.

A 2011 feasibility study concluded this groundwater replenishment project to be safe and economical. This pilot and demonstration phase includes two parts: 1) underground hydrologic testing and analysis, and 2) a one-year operation of a small-scale purification plant to evaluate the process and water treatment options. The study is cooperatively funded by the Southwest Florida Water Management District. Informational presentations are available for neighborhood and civic associations by calling 562-4960.

Safe Storage

Be sure to properly safeguard chemicals in your home and storage spaces, especially during hurricane season. During tropical storm events, waters can flow into garages, sheds, kitchens, and bathrooms where families usually store chemicals such as fertilizers, paints, automotive fluids, pesticides, and cleaners. Elevating dangerous chemicals helps ensure they don't get introduced into the environment, endangering public health, wildlife, and our ecosystem.

Rid your home of chemicals you don't use anymore. Residents can take them to the Household Electronics and Chemical Collection Center, operated by Pinellas County Utilities. Simply drop off your hazardous chemicals for free at 2990 110th Ave. N., St. Petersburg. If you bring chemicals to the center, don't mix them together. It's a good idea to transport them in cardboard boxes in your trunk. The HEC3 Center cannot accept automotive/marine batteries, biological/infectious waste, empty paint cans, explosives, fire extinguishers, propane tanks, radioactive waste or smoke detectors. Call 464-7500 for more information.

Hands Off, Please

The city and project contractors ask residents not to move barricades or drive on areas that are blocked off to traffic. Doing so poses a public hazard, interferes with the success and timeline of a project by slowing it down, and is against Clearwater ordinances. Residents should report violations to Clearwater Police Department at 562-4242.

Reclaim Your Space

Reclaim Your Space 2013 is an event where artists, designers and citizens transform metered parking spaces into temporary public parks. On Thursday, Nov. 7 Downtown Clearwater will see several of its metered parking spaces along Cleveland Street transformed for a day into mini-parks. This one-day event is a "Love Note" from the city to its residents, and is part of the "For the Love of Clearwater" series of events in part sponsored by the Clearwater Downtown Partnership. Reclaim Your Space 2013 is based on National PARK(ing) Day, as well as other similar events held in Orlando, Ithaca, and Sacramento.

For those interested in installing a mini-park for a day as part of Reclaim Your Space 2013, applications are available online until Sept. 27. All mini-parks must be designed to promote love of Clearwater, recreation, green living, alternative transportation, or some combination there-of. For more information, contact Lauren Matzke, at 562-4547 or *lauren.matzke@myclearwater.com*.

Clearwater Sunshine LINES

February 2012

STAY INFORMED

7th Annual Clearwater Pet Festival

Saturday, March 24, 10 a.m. – 3 p.m., Cleveland Street District, downtown Clearwater

This annual event, sponsored by the Clearwater Downtown Development Board, attracts many of the community's pets and their owners to the Cleveland Street District in downtown Clearwater. Festival activities on Cleveland Street between East and Ft. Harrison avenues include a pet parade, contests, animal rescue groups, pet supply vendors, entertainment and food. It's fun and free. Contact anne.fogarty-france@myclearwater.com for more information.

Clearwater Designated a "Coast Guard City"

The City of Clearwater is now one of only 14 cities throughout the nation to be designated a "Coast Guard City." The designation, endorsed by Congress and the Coast Guard, is made to recognize the outstanding support the community provides to Coast Guard personnel and their families.

In January, Admiral Robert J. Papp, Jr., Commandant of the Coast Guard, accepted a proclamation and key to the city from Mayor Frank Hibbard to celebrate the prestigious honor. Other dignitaries that attended the event included Senator Bill Nelson, Congressman C.W. Bill Young, Congressman Gus Bilirakis, and Senator Jack Latvala.

The U.S. Coast Guard Air Station Clearwater is the largest and busiest air station in the Coast Guard. Their area of operation includes the Gulf of Mexico, Caribbean basin, and the Bahamas.

Because of Clearwater's rich history with the Coast Guard, the Coast Guard City designation was earned. The application process for the program was coordinated by the Clearwater Regional Chamber of Commerce through their Military & Veteran's Committee.

Need to Replace your Gas Water Heater?

Here's a tip to help put a little extra in your pockets this year: Replacing your old gas water heater with a more energy efficient tank or tankless gas water heater, can save you an average of 59% annually on your home's energy bill.

Now for a limited time, Clearwater Gas System customers can receive up to $550 off the costs of a residential tank or tankless gas water heater when purchasing a gas water heater from Clearwater Gas System. For more information call us at 727) 562-4980, extension 7454.

The Future of Our Water

The City of Clearwater is working to ensure the quality of our water in the future. Plans are currently underway to implement the ongoing construction of the reclaimed water distribution system; expand our existing reverse osmosis water treatment plant; design and construct a second reverse osmosis plant; and look at the feasibility of ground water replenishment technology. If you, your neighborhood, or civic association would like more information on any of these projects, call (727) 562-4960. Public meetings for each project will provide the opportunity for input. If you are interested, watch for notification of these meetings on the city's website, *myclearwater.com*.

Bring Reclaimed Water into Your Neighborhood

The City of Clearwater is expanding its reclaimed water system and will be providing this valuable resource to residents all over the city. Projects in the Skycrest, Clearwater Harbor, Glen Oaks, and Palmetto neighborhoods are currently under construction, and neighborhoods such as Coachman Ridge, Lake Chautauqua, and Morningside already enjoy the many benefits of using reclaimed water.

If your neighborhood does not currently have reclaimed water service and you would like it, it's easy to initiate a project. Neighbors along the proposed pipeline would need to sign a Citizen-Initiated Petition Form to express their interest in getting the service. More than 50 percent of participating property owners would be required for approval leading to construction. To learn more, call the Public Utilities Department at (727) 562-4960, ext. 7226 or visit the reclaimed water website, *myclearwater.com/reclaimed*.

USF Softball Tournaments:

USF Under Armour Invitational

Friday, March 2 – Sunday March 4

USF Under Armour Showcase

Friday, March 9 – Sunday, March 11

USF Tournament

Friday, March 16 – Sunday, March 18

Eddie C. Moore Complex, 2780 Drew St.
(727) 562-4700

usfseries.com

USF
UNIVERSITY OF SOUTH FLORIDA

Clearwater welcomes college athletes, coaches, sponsors, and spectators to some of the largest NCAA Division I softball tournaments. Competing in these tournaments is an accomplishment for all teams. Presented by Visit St. Petersburg/Clearwater Sports Commission and the City of Clearwater.

What To Do With That Old Television

Did you know that the typical television or computer monitor contains anywhere from two to eight pounds of lead? These toxic wastes are dangerous to our environment. Many good residents are unaware of the dangers of tossing old and broken electronics into the garbage or landfill.

Clearwater residents with proof of residency (a copy of your utility bill) may bring up to six unwanted electronics to the recycling drop-off center at 1701 N. Hercules Ave. for free disposal on the last Wednesday of each month in 2012.

Accepted electronics:

Camcorders, cameras, cassette players, CD players, cell phones, DVD players, fax machines, microwave ovens, photocopiers, radios, scanners, stereos, TVs, VCRs, computers and computer accessories.

2012 E-Waste Drop-off Days are:

Feb. 29	Aug. 29
March 28	Sept. 26
April 25	Oct. 31
May 30	Nov. 28
June 27	Dec. 26
July 25	

Sign-up for City News

Stay connected to the City of Clearwater by signing up for our e-newsletters. C-Mail is one of the ways residents can stay updated about what's happening in Clearwater. Information is sent out at regular intervals to those who register their e-mail addresses online. Users can register to receive information about Neighborhood News, City Council meetings, Employment Opportunities, Parks & Recreation programs, Police News, Clearwater Public Library System, and city press releases. A new category called "Green & Energy News" is now available and provides citywide news about green initiatives, utilities news, and sustainability information.

To sign up for the city's e-newsletters or to edit the categories you currently receive, just click on "E-Newsletters" on the left-hand side of myclearwater.com, enter your email address, and select the categories of news which you would like to receive.

CITY OF Clearwater

www.myclearwater.com

Para información en español, llame al (727) 562-4550.

Sunshine Lines is produced by the City of Clearwater
Public Communications Department

Your Leadership Team

Mayor	Frank Hibbard
Councilmembers	George N. Cretekos
	John Doran
	Paul F. Gibson
	Bill Jonson
City Manager	Bill Horne
City Attorney	Pam Akin

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City of Clearwater Go
Friday at 7:00pm near Clearv

Loading...

Change Location

This video called "Downstream," produced by the WaterReuse Asso
more about indirect potable reuse: http://athirstyplanet.com/your_

The city is conducting a study to determine the viability of proceeding with a full-scale design and construction of a 3-million gallon per day water purification facility to recharge the Upper Floridan Aquifer. We're in the pilot & demonstration phase. A project update was presented to City Council on May 1 (watch it on streaming).

Downstream | A Thirsty Planet
athirstyplanet.com
The majority of the world's population drinks from rivers and streams that have received discharges from upstream users. In most of the industrialized developed world, there

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Lisa Angela Lanza likes this.

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179 people saw this post

Boost Post

3
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City of Clearwater Government
Home
Ads Manager
Like This Page
Get More Likes
Choose a unique cover photo to express what your Page is about.
Share how you're doing, City of Clearwater Government...
Year:
Hide fr m news feed
Post
City of Clearwater Government
May 14
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Check out this video called "Downstream": http://athirstyplanet.com/your_h20/downstream. It's produced by the WateReuse Association and shows you more about indirect potable reuse.
Tag Photo
Add Location
Edit
Like · Comment · Share · Edit
Jeannie Schramm and Devcon Security like this.
Write a comment...
Sharon Schnoll
2 · April 27 at 4:01pm
Thank you once again for our pretty trees its now our ne...
More Posts
City of Clearwater Government
a few seconds ago
National Hurricane Preparedness Week is May 26 to June 1. Hurricane Season starts June 1 and goes until Nov. 30. Be prepared, and get a plan!
Recommendations
See All
Jodi McLean
I love you, City of Clearwater, but you must hire a new roa...
2 · about 2 months ago
ED Gina M Toye
the ROCKAWAYS are ready...reverbnation.com/therockaways

Clearwater's Integrated Water Management Strategy

CITY OF Clearwater

The City of Clearwater has developed an Integrated Water Management Strategy that will enable Clearwater to manage the rising cost of water, conserve our limited water resources, protect our unique environment, and ensure we have the water we need today and in the future. This strategy calls for becoming less reliant on external water supplies coming from others. It includes:

- **Conservation in our homes and businesses**
- **Developing and expanding local water supplies, and**
- **Providing reclaimed (or recycled) water for irrigation**

A successful Integrated Water Management Strategy incorporates a variety of strategies to preserve limited drinking water supplies. Some of these strategies, such as conserving water, are inexpensive. Other strategies, such as providing reclaimed (or recycled) water are more costly and require grants to offset project costs. Without these funds, these projects would not be feasible.

It's smart to use all of our water resources to benefit our community — and it's our plan.

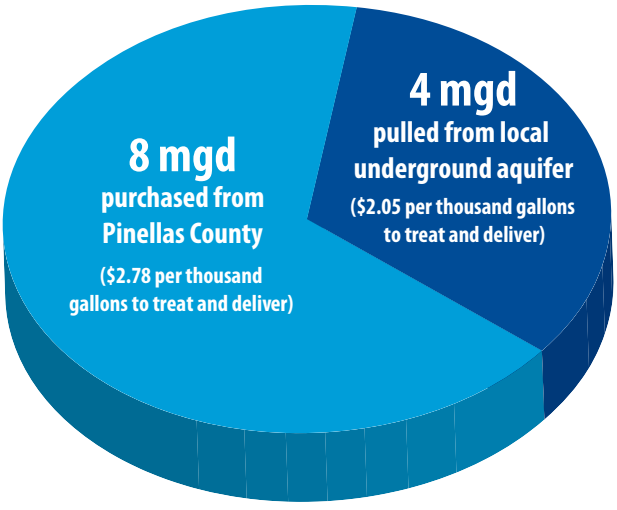
AN INVENTORY OF WATER RESOURCES AND SOURCES

Like many other communities, Clearwater gets its drinking water from underground aquifers beneath the City. What cannot be produced locally is purchased from Pinellas County.

Clearwater businesses and residents use approximately 12 million gallons per day (mgd) of water. Approximately 4 mgd of Clearwater's daily water supply are pulled from local underground aquifers. The remainder of that water — approximately 8 mgd — is purchased from Pinellas County. Pinellas County gets its water from Tampa Bay Water, a regional water supplier that manages wellfields in

Clearwater Water Use

12 million gallons per day



Hillsborough and Pasco counties, and draws water from the Tampa Bypass Canal and the Hillsborough and Alafia rivers. Water produced in Clearwater costs $2.05 per thousand gallons to treat, whereas water purchased from Pinellas County costs $2.78 per thousand gallons. Clearly, it's cheaper for us to treat and deliver water from local sources than it is to purchase water from Pinellas County.

Currently, Clearwater owns and operates three water treatment plants. Two of these plants blend local groundwater with purchased water from Pinellas County. The third plant treats 100-percent local groundwater through reverse osmosis, supplying 3 mgd of drinking water to the City. In total, these plants produce over 4 mgd from local groundwater supplies.

Future plans call for adding more wells and treatment plants to increase local production, which will reduce the amount of water we purchase from Pinellas County. At today's rates, this would save the City of Clearwater nearly $1.5 million per year. Because the cost of water is increasing by about 8 percent annually, the savings to Clearwater will become increasingly greater in the future.

Conservation of our water sources also saves Clearwater money. The less potable water we use for irrigation, the less water we need to purchase from Pinellas County. To help conserve our limited drinking water supply, and become less reliant on external supplies, Clearwater has completed six reclaimed water projects (with an additional project partially completed). These projects provide 1.6 mgd of non-potable water to participating Clearwater residents and businesses, and .8 mgd to local golf courses. Reclaimed water is highly treated wastewater that can be used for non-potable purposes, such as irrigation. Clearwater's reclaimed water is delivered to homes and businesses through an underground distribution system entirely separate from the drinking water system.

By reducing the amount of water we purchase from Pinellas County, we currently save over $400,000 per year. As we expand our reclaimed water program — and as more and more residents use reclaimed water for irrigation — the City and its customers will incur additional savings.

"This strategy calls for becoming less reliant on external water supplies coming from others."

HOW WE USE WATER TODAY

The average person in Clearwater uses 83 gallons of water a day — the average Floridian uses approximately 100 gallons per day. In Clearwater, the combined total of business and residential water use is about 12 mgd. Here's how these numbers compare to other Tampa Bay communities:

Municipality	Approximate Per Capita Daily Water Usage (gpd)	Total Approximate Daily Water Usage (mgd)
Clearwater	83	12
Dunedin	108	4
Largo	129	6
New Port Richey	96	3
Oldsmar	89	2
Pinellas Park	58	5
St. Petersburg	91	29
Tampa	122	74
Pinellas County	97	105
Hillsborough County	116	131

Based on information provided in the Southwest Florida Water Management District's 2004 Estimated Water Use Report.

The primary way our drinking water supply in Clearwater can be conserved is by limiting lawn irrigation with potable and well water. To encourage lawn irrigation with reclaimed water, Clearwater has set up the following watering schedule:

Water Source	Day/Week Allowed
Lawn Meter	1
Well	2
Reclaimed Water	7

As seen in the above table, reclaimed water can be used seven days a week, compared to one and two days a week for potable and well water.

Other ways to conserve Clearwater's drinking water include ordering and installing low-flow showerheads, faucet aerators and toilet tummies from Clearwater Utilities. Residents can also participate in Pinellas County's toilet-rebate program. This program allows Pinellas County residents to receive rebates of up to $100 for each high-flow toilet replaced with an ultra low flow toilet (1.6 gallons per flush or less).

OUR NEEDS TOMORROW

In Florida, over 13 million people live in coastal communities. These densely populated communities need water — and Florida's population will only continue to grow. It's estimated that population growth within the Southwest Florida Water Management District will increase by 29 percent by the year 2025. Although many areas in Clearwater have been built out, our coastal community will still feel the effects of this population increase due to our dependence on water from Pinellas County.

That's because, through our water rates, we all pay for the funding needed to support expansion of Tampa Bay Water's regional water system. This is why it's imperative for Clearwater to maximize its own water supplies and resources.

Additionally, redevelopment of existing sites within Clearwater will still occur. Redevelopment is the redesign or rehabilitation of existing properties, such as converting a golf course into condominiums. By the year 2010, it's estimated that Clearwater businesses and residents will use approximately 14 mgd — and that amount will only continue to rise.

CLEARWATER'S PLANS FOR MEETING FUTURE NEEDS

Clearwater's Capital Improvement Plan identifies water and reclaimed water projects that will limit our water dependency on outside sources, allowing us to better control our water costs. The plan calls for developing local water sources by completing a variety of projects, including;

- Drilling additional wells
- Expanding two existing water treatment plants
- Building additional water treatment plants
- Expanding reclaimed water to maximize its use

Currently, the City of Clearwater is planning a new reverse osmosis (RO) water treatment plant. RO is a technology that removes naturally occurring minerals, bacteria, viruses, organic matter and other constituents from groundwater. More than 200 water treatment plants in Florida use RO.

RO is not new to the City of Clearwater. The City currently owns and operates an RO plant that will be expanded as part of this plan.

Reclaimed water projects are also part of Clearwater's Capital Improvement Plan. Generally speaking, it takes four households worth of wastewater to produce enough reclaimed water to irrigate one house. There are currently 110 reuse systems in the Southwest Florida Water Management District. These systems are reusing 230 mgd, which is approximately 28 percent of the area's current wastewater flows.

Many Clearwater residents are currently using drinking water for irrigation purposes. By using reclaimed water in lieu of drinking water for irrigation, residents will see significant reductions in their water bills, as follows:

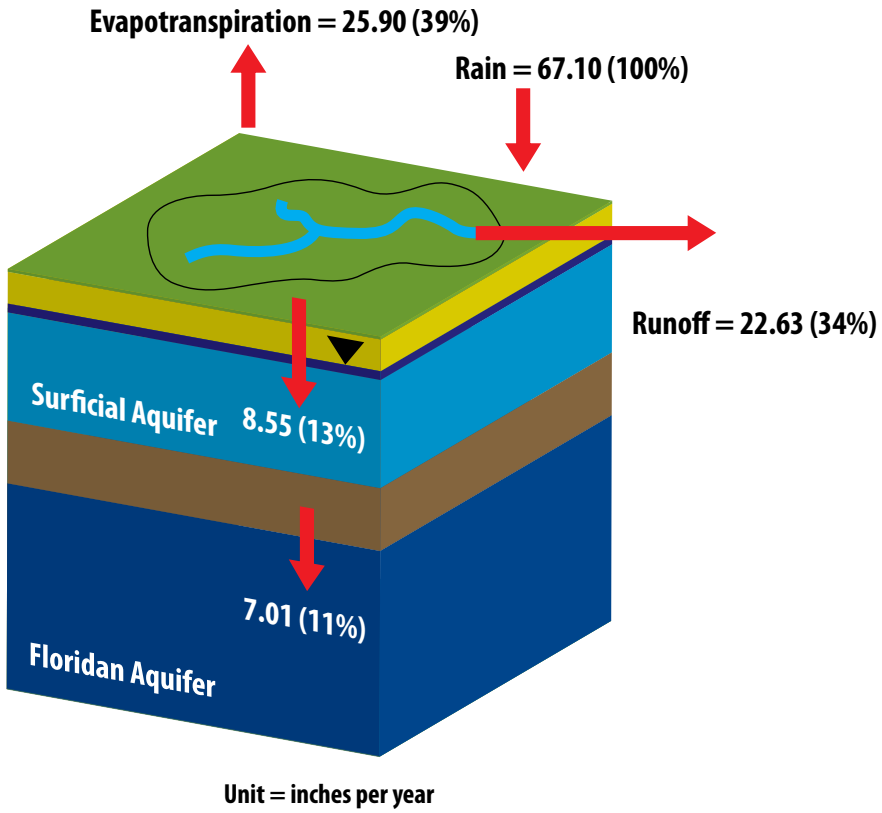
Source	Average Monthly Cost
Irrigation with drinking water meter	$102.13
Irrigation with lawn meter (uses drinking water)	$72.16
Irrigation with reclaimed water	$19.78

Based on 10,000 gallons of usage at current water and reclaimed water rates.

The City of Clearwater is currently expanding its reclaimed water system through City-initiated projects. These projects will enable the City to focus its efforts and ensure success of the reclaimed water program. Clearwater's reclaimed water program will also support resident-driven reclaimed water expansion opportunities. In this scenario, a community will canvas the neighborhood to provide reasonable assurance to the City that the project will meet funding criteria. Reclaimed water service will be provided to areas within the City limits where maximum benefit can be achieved economically, to offset potable water used for irrigation, and to offer an alternative water source to well owners. By having well owners switch to reclaimed water, less withdrawal from the surficial aquifer improves the recharge rate for local potable water production.

"Clearwater's Capital Improvement Plan identifies water and reclaimed water projects that will limit our water dependency, allowing us to better control our water costs."

The block diagram below shows a general water balance for Clearwater. About 13 percent of rainfall over our watershed recharges the surficial aquifer and about 11 percent reaches the Floridan aquifer. Pumping from shallow irrigation wells lowers the water table and reduces the amount of recharge to the Floridan aquifer. The use of private wells for irrigation could reduce the amount of Floridan acquifer recharge by 42 percent.



By having well owners convert to reclaimed water, less withdrawal from the aquifer increases groundwater levels and improves the recharge rate to the Floridan aquifer, enabling local drinking water production.

Also, as Clearwater expands its internal reclaimed water system, bulk users will be sought out to bridge the gap between resident/commercial reclaimed water use and total supply available. Future bulk sale of reclaimed water agreements will include provisions to meet local irrigation demands first, while allowing bulk users to take excess supplies.

THE ENVIRONMENTAL FACTOR

Tampa Bay estuary is another valuable resource to our community. Clearwater currently discharges approximately 13 mgd of treated wastewater into Tampa Bay and the Gulf of Mexico. By incorporating an Integrated Water Management Strategy, Clearwater will reduce the discharge of treated wastewater into our adjacent water bodies. Rather, the treated wastewater will be recycled back into neighborhoods as part of our reclaimed water program.

Saltwater intrusion is a concern for many coastal communities. When too much fresh water is pumped from underground sources, saltwater from the coast may seep into these freshwater supplies. Historically, upconing of saltier water beneath wells that have been pumped too hard has occurred throughout Pinellas County. Currently, Clearwater has a wellfield management plan to reduce the occurrence of upconing in the vicinity of its production wells. Although we plan to monitor groundwater quality and manage withdrawals accordingly, we have prepared a mitigation plan for all private-owned wells within 1,000 ft. of City-owned production wells. Private-owned wells that experience an increase in chloride (or salty water) will be able to request an investigation. This investigation would include:

- Inspection of the pump, storage tank and other related equipment
- Collection of water samples
- Inspection and log the well
- Review of nearby City-well data
- Analysis of all data collected

If it is determined that a well owner's claim is valid and the City has impacted the well water quality, Clearwater would mitigate with the impacted owner. Mitigation for existing domestic wells that exceed a chloride concentration of 250 mg/L will include connection to the City's potable water system. Existing irrigation wells that exceed a chloride concentration of 400 mg/L will receive a lawn meter or connection to the City's reclaimed water system. Clearwater would also require, as part of the mitigation, access to properly plug and abandon the domestic well from further use. This is needed to protect the aquifer from surface contamination.

INTEGRATED WATER MANAGEMENT PUBLIC EDUCATION PROGRAM

Critical to the success of this strategy is engaging the community in Clearwater's plan to secure a quality water supply for now and the future. The following key points will be addressed through a community education program:

- Clearwater's Integrated Water Management Strategy will help control water costs, protect the environment and secure water resources.
- Clearwater's Integrated Water Management Strategy includes making good use of all available resources.

Several potential components of the education program have been identified:

- A News In Education tabloid (inserted in the St. Petersburg Times) educating high-school students and newspaper subscribers about Clearwater's limited water supply and the Integrated Water Management Strategy.
- A Web site specific to the Integrated Water Management Strategy.
- A Speakers' Bureau (script and presentation) about the Integrated Water Management Strategy.
- Various water resource education materials (door hangers, bill stuffers, brochures, etc.).

STEPS TO A SUCCESSFUL INTEGRATED WATER MANAGEMENT STRATEGY

Step 1: Conserve our limited water supplies.

- Prohibit new wells in the Floridan aquifer
- Prohibit new wells within 1,000 ft. of existing/planned potable production wells
- Single day per week watering schedule for private irrigation wells and irrigation from lakes and ponds
- Identify High Priority Reclaimed Water Areas
- Develop an Integrated Water Management Strategy education program
- Continue offering water conservation education materials and programs

Step 2: Preserve our drinking water source.

- Prohibit new private wells in the Floridan aquifer
- Prohibit new private wells within 1,000 ft. of potable/planned production wells

Step 3: Produce more drinking water from our local sources.

- Drill additional wells to allow for cycling of wells
- Expand our existing two treatment plants
- Build a new water treatment plant that incorporates RO technology

Step 4: Protect our coastal environment by expanding and maximizing Clearwater's reclaimed water system, which will reduce wastewater discharges to Tampa Bay and the Gulf of Mexico.

- Eliminate well exemptions for residents with access to reclaimed water
- Projects will move forward via City-driven (based on infrastructure) initiative or community-driven petitions
- Prohibit construction of new wells in planned reclaimed water areas
- Merge bulk/user annexation issue into ordinance change
- Provide the ability to more easily service bulk users

"A successful Integrated Water Management Strategy incorporates a variety of strategies to preserve limited drinking water supplies."

Integrated Water Management Strategy

Clear goals and objectives that incorporates a variety of initiatives to preserve limited drinking water supplies and ensure that we have enough for today and in the future.

IWMS-
The Future of Our Water

1. Conserve our limited water supplies
2. Preserve our drinking water sources
3. Produce more drinking water from local sources
4. Protect our coastal environment
5. Manage the rising cost of water

What Is it ?

- Visualization of sustainability
- "Roadmap"
- Commitment to our citizens' for the "future of our water"

Key Elements

- Maintain our quality of life
- Reflect the values of our community
- Seek extensive engagement from our citizens
- Enhancing our education and communication efforts with the community
- Strive to be leaders in the county, region, state.

Goal #1- Conserve Our Limited Water Supplies

Continue offering water conservation programs and educational materials

- Water -Wise Program educating 5th graders
- Water conservation devices

Goal #2- Preserve Our Drinking Water Sources

- Identify high priority Reclaimed Water (RCW) areas
  - Target areas with highest potable water lawn meters
  - Expand RCW as alternative to potable water for irrigation

How Reclaimed Water Helps Us Meet Our Goals

- Many residents currently use drinking water for irrigation
- Reclaimed water (RCW) as an alternative to potable = lower water bills
- Treated wastewater is used for irrigation rather than discharged into Tampa Bay

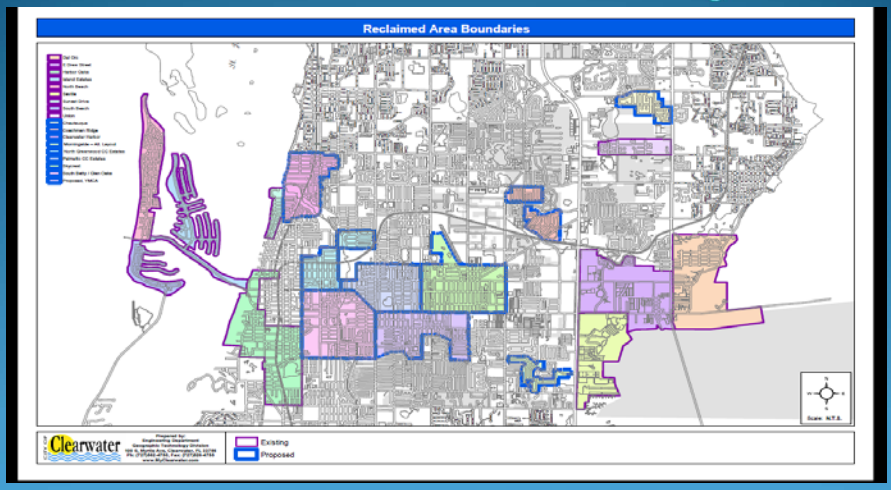
Goal #2 - Reclaimed Water Projects

Island Estates	1999
North Beach	2001
South Beach	2001
North Greenwood	2003
Harbor Oaks	2004
Seville/Sunset	2006
Drew Union	2007
Del Oro	2007

Goal 2 - Additional Reclaimed Water Projects

- Morningside (96%) 2010
- Coachman/Chautauqua (94%) 2010
- Skycrest (84%) 2011
- Glen Oaks/Palmetto (Bids opened October 2010) 2012
- Clearwater Harbor (Under design) 2014

Goal 2 - Additional Reclaimed Water Projects



Goal #3 - Produce More Drinking Water from Local Sources

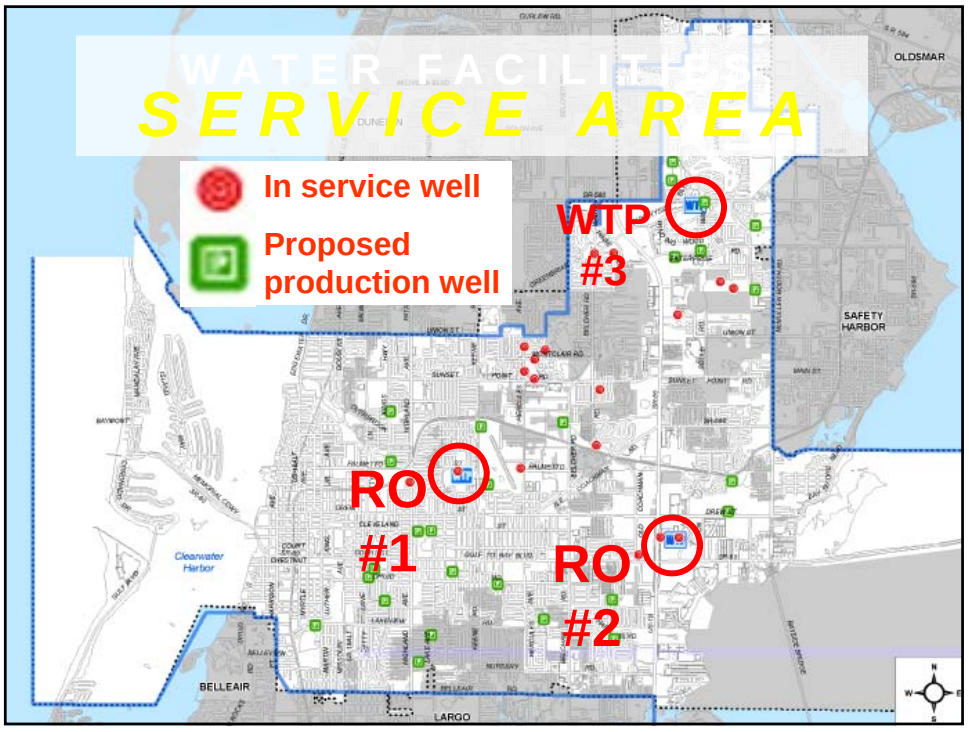
- Expand wellfields
- Expand existing water treatment plants (RO)
- Build another water treatment plant incorporating (RO) brackish water technology

Goal #3 - Water Production Projects

Wellfields	13 New wells	1.0 MGD
Expansion of RO 1		1.5 MGD
New Brackish RO 2*		5.0AMGD

Concentrate Disposal Well for RO 2

*(Includes the wellfield)



Goal #4 - Protect Our Coastal Environment

- Reduce treated wastewater discharge to Tampa Bay
- Expand and maximize reclaimed system for irrigation (system fill in)
- Prohibit new wells in RCW areas

Goal #4 – Projects for Coastal Environment

- Groundwater Replenishment Project – water purification to produce an average daily flow of MGD 2.4 of purified water with 2.4 MGD credit for future water supply

Goal #4 – Projects for Coastal Environment

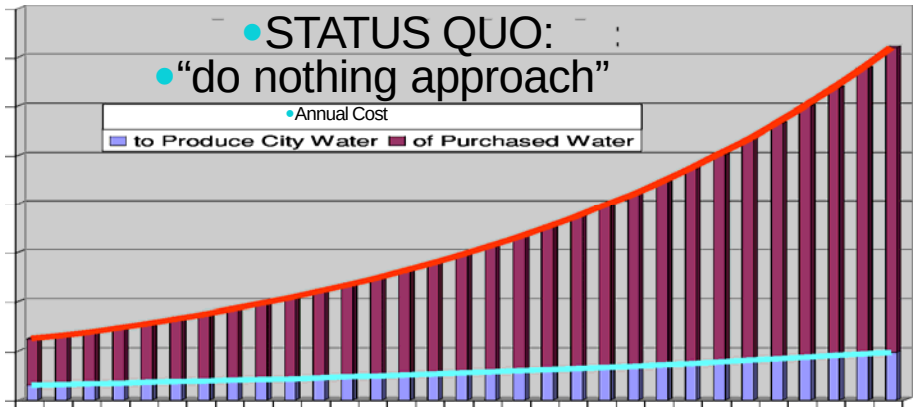
- Interconnect with Dunedin
- Sanitary Sewer extensions – 500 parcels 140,000 GPD from entering Stevenson Creek

Goal #4 – Groundwater Replenishment

Goal #5 - Managing the Rising Cost of Water

- Wellfield Expansion Annual Cost Savings (see chart – Status Quo)

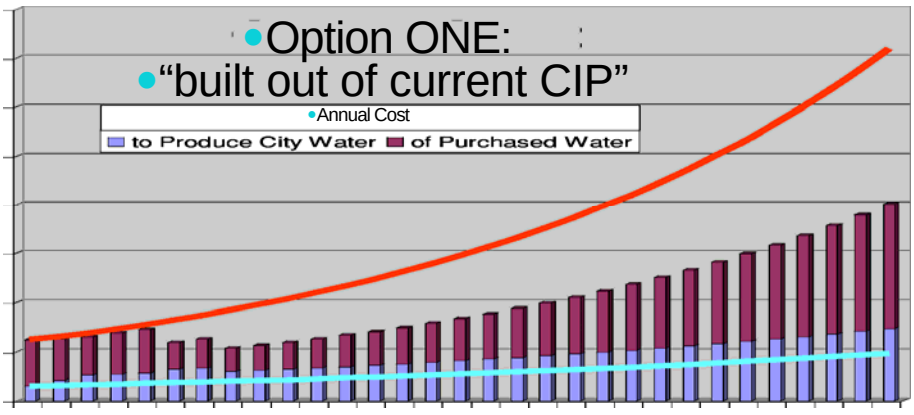
- STATUS QUO:
- "do nothing approach"



Goal #5 - Managing the Rising Cost of Water

- Wellfield Expansion Annual Cost Savings (see chart- Option One)

- Option ONE:
- "built out of current CIP"



Future of Our Water
Total Water Management

- Conserve
- Preserve
- Produce
- Protect
- Manage

Production Project Costs

•Wellfield Expansion	$ 6.0 M
•Expansion RO 1	$11.5M
•Brackish RO 2*	$35.7 M
•Groundwater Replenish*	$29.0 M

•* SWFWMD - 50% Funding

Clearwater's Groundwater Replenishment Project Update

Janice "Nan" Bennett, P.E.
Public Utilities Assistant Director

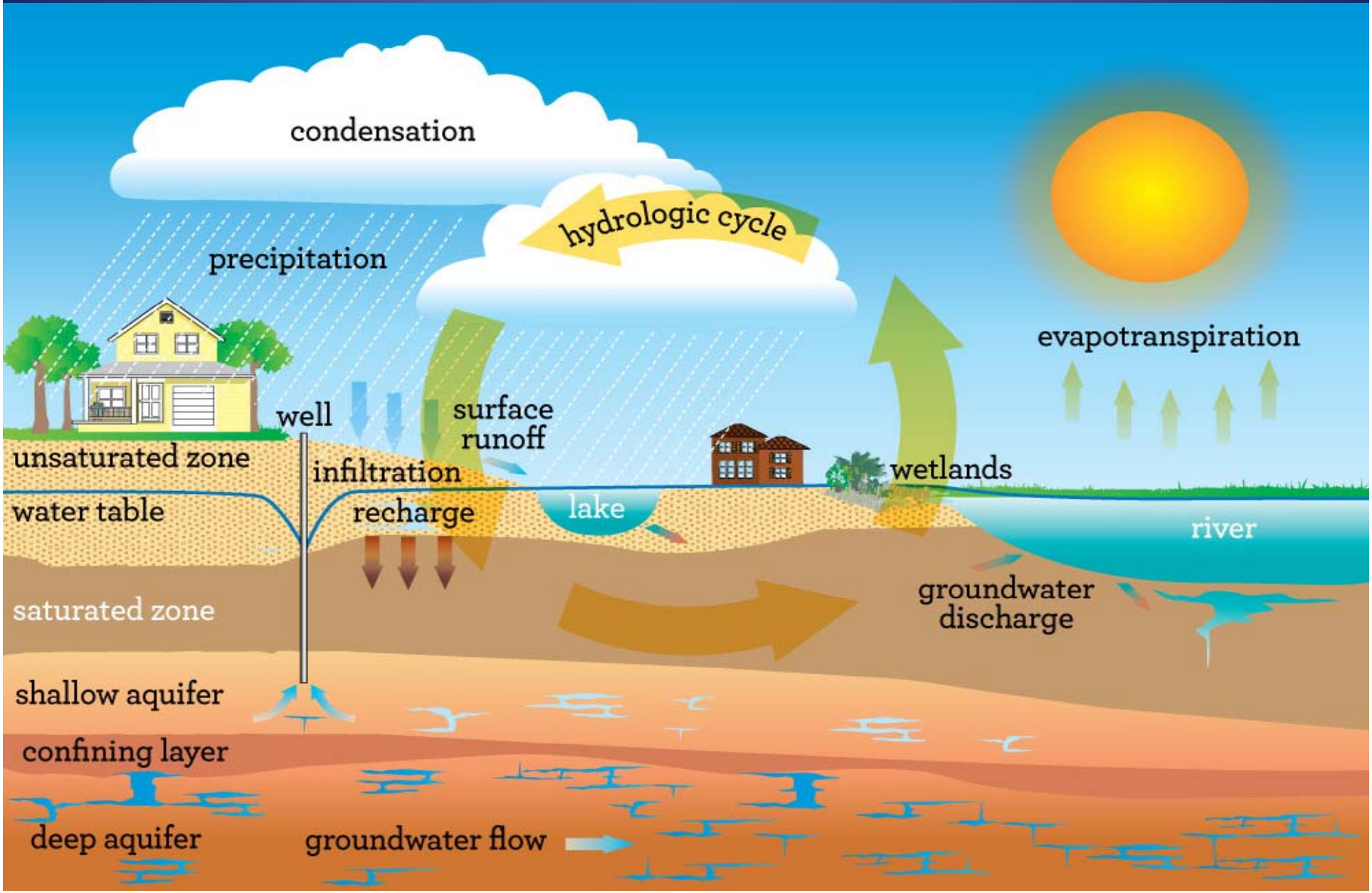
CITY OF Clearwater

Southwest Florida Water Management District

Public Utilities Mission

To provide high-quality water, wastewater & reclaimed services while protecting the public health and natural environment of our community through cost-effective management, operating, and maintenance of our infrastructure sustaining these essential services.

Community Water Cycle



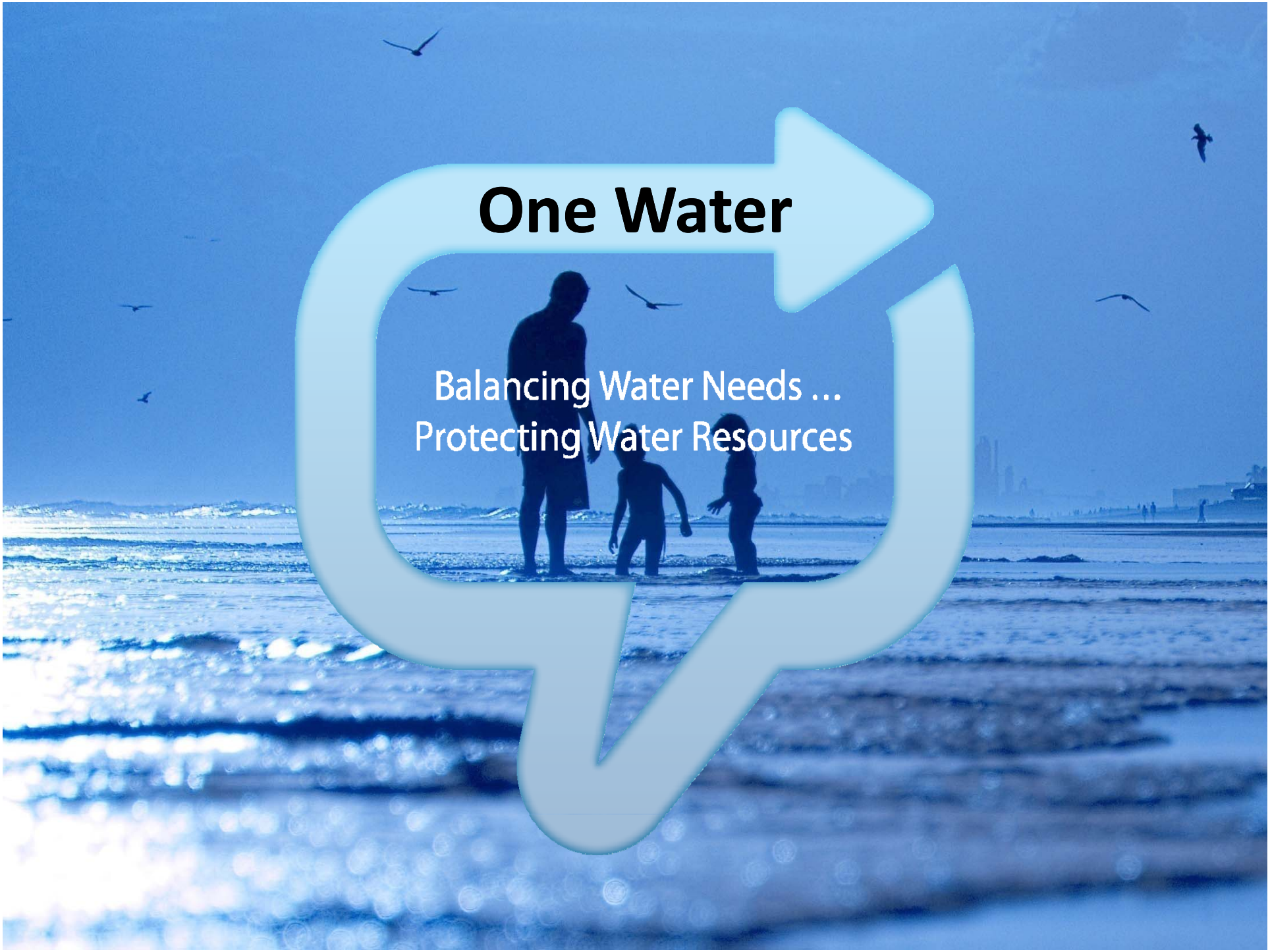
Integrated Water Management Strategy

A holistic approach that brings together all facets of the water cycle —

- water supply and treatment
- sewage collection and treatment
- purification
- Reuse and disposal

Integrated Water Management Tactics

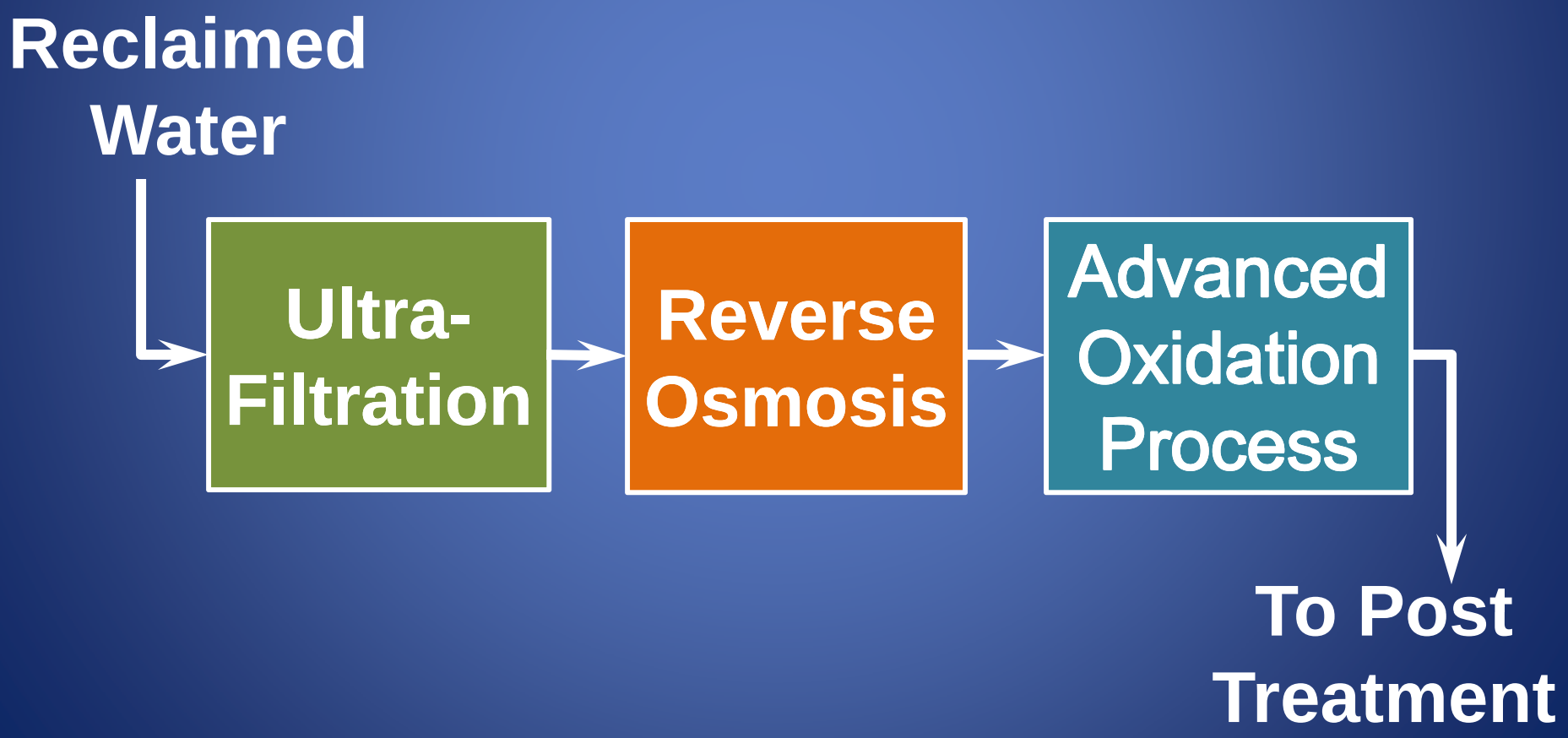
1. Conserve limited water supplies
2. Preserve drinking water sources
3. Protect coastal environment
4. Produce more water locally
5. Manage the rising cost of water


One Water
Balancing Water Needs …
Protecting Water Resources

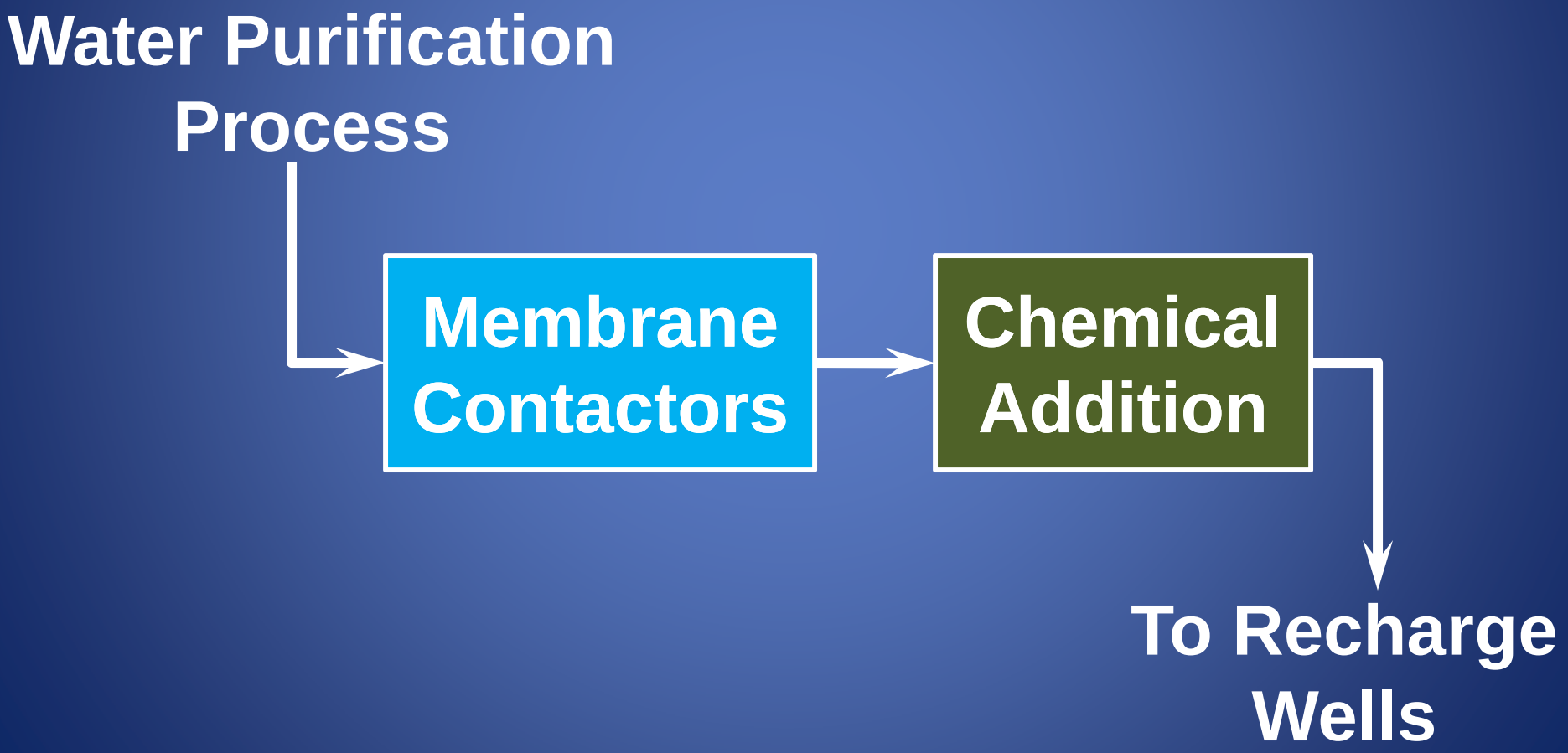
Project Statement

To construct a water purification plant at the existing Northeast Water Reclamation Facility to supply 3 MGD of highly treated water to recharge lower Zone A of the Floridan Aquifer.

Purification Process Block Diagram



Post Purification Treatment

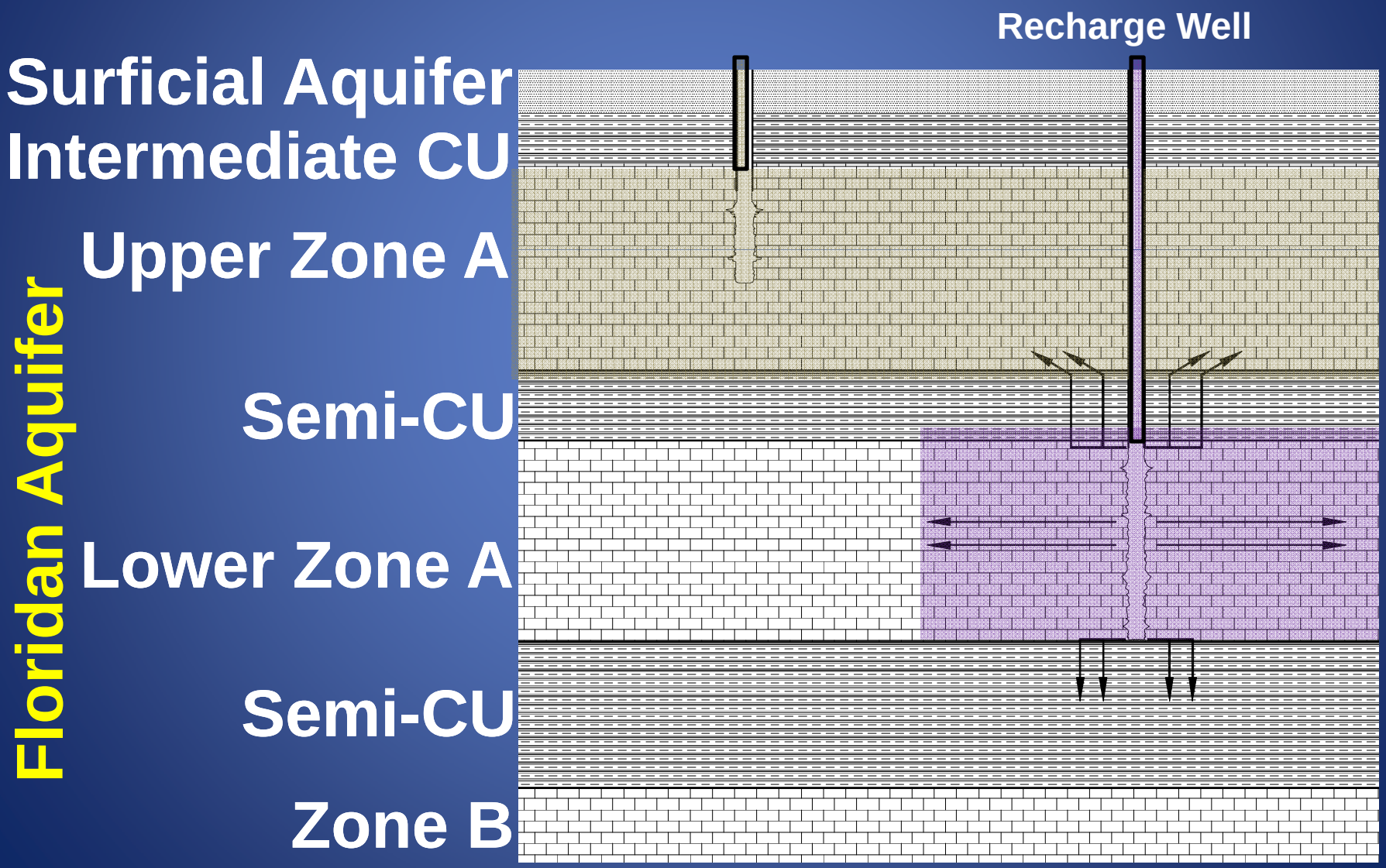


Water Quality Comparison

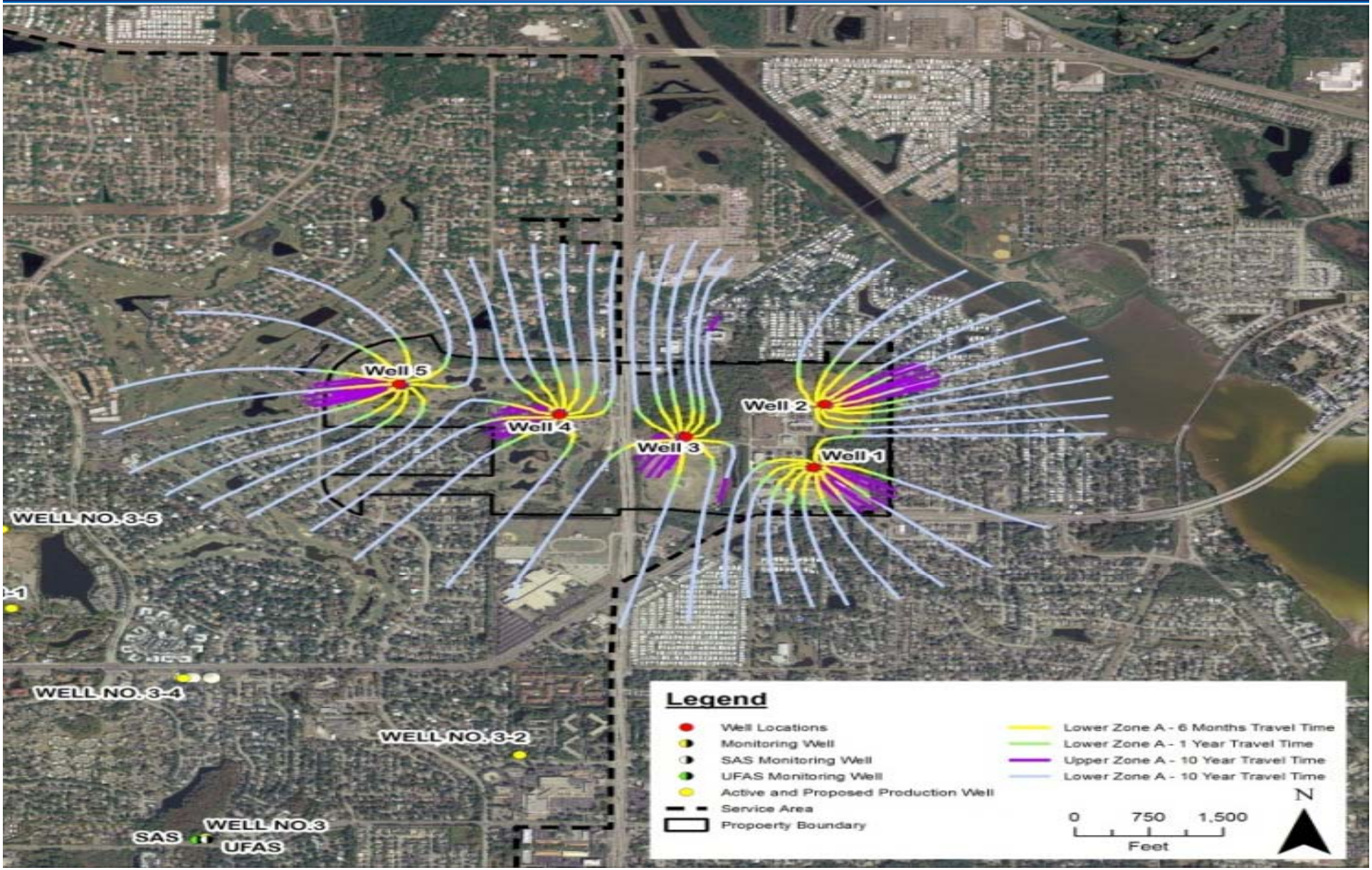
Parameter	Purified Water	Native Grndwtr
Total Dissolved Solids, mg/L	27	620
Calcium, mg/L	1.1	80
Magnesium, mg/L	0.2	17
Sodium, mg/L	6.5	170
Iron, mg Fe^{++}/L	<.01	.05
Arsenic, μg/L	<1.0	<1.0
Alkalinity, mg $CaCO_3$/L	10.5	160
Chloride, mg/L	6.1	330
Sulfate, mg/L	0.8	16
pH	5.5	7.5
Dissolved Oxygen, mg/L	>6.0	0.3
ORP, mv	+	-307

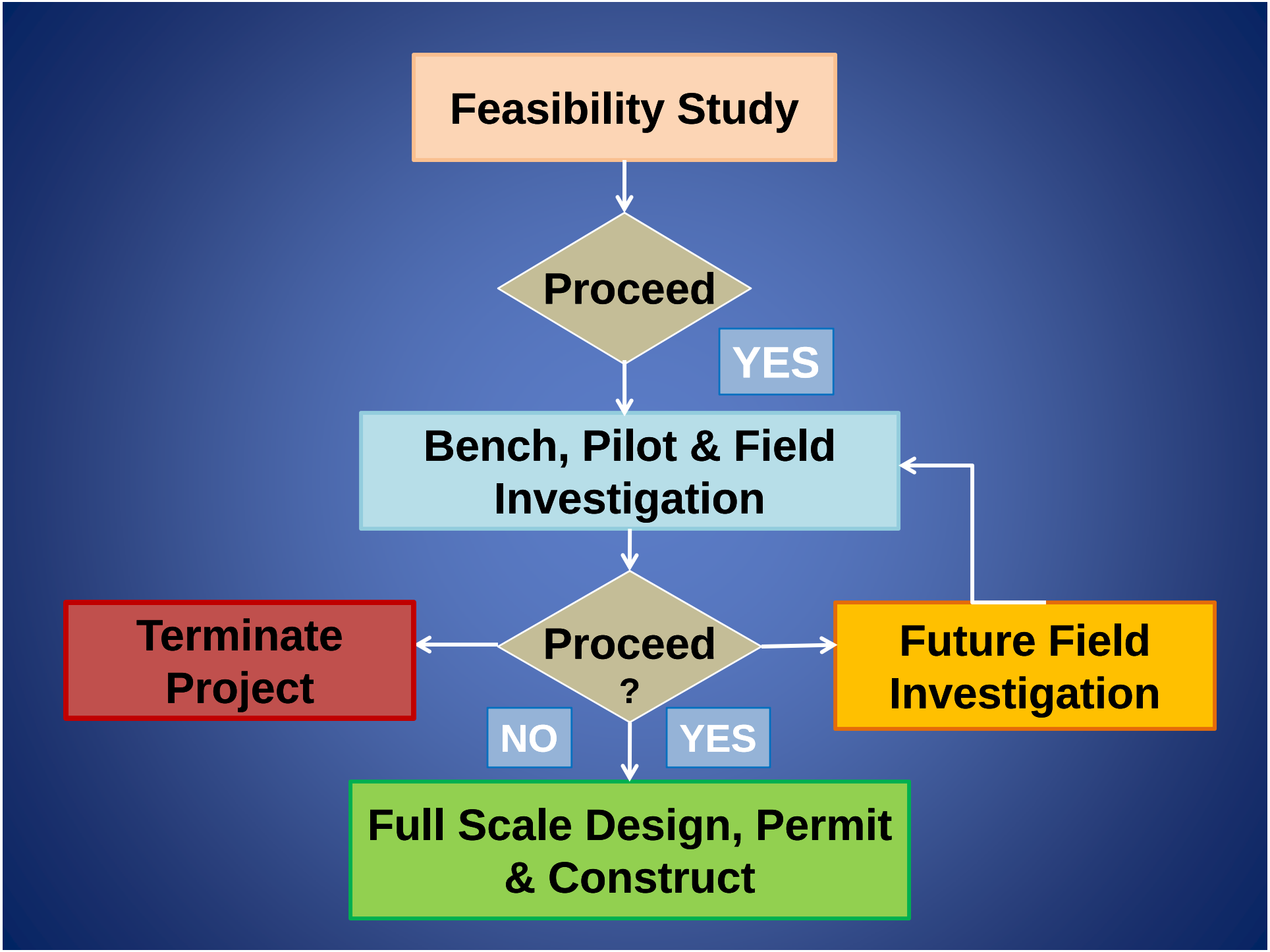
Conceptual Recharge System Design

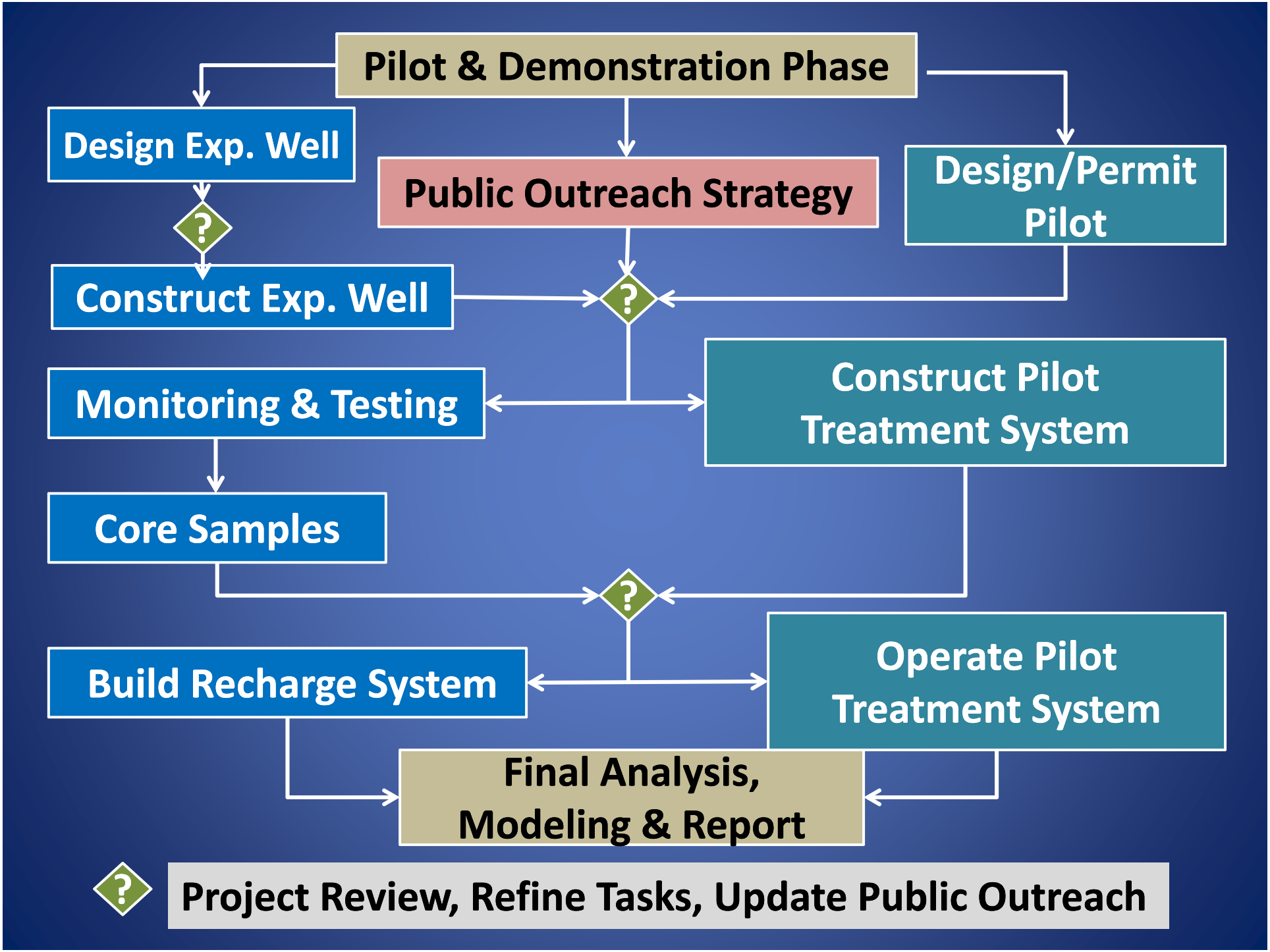
Recharge Well Operation



Model Particle Tracks




Feasibility Study
Proceed
YES
Bench, Pilot & Field Investigation
Terminate Project
Proceed ?
Future Field Investigation
NO
YES
Full Scale Design, Permit & Construct


Pilot & Demonstration Phase
Design Exp. Well
Public Outreach Strategy
Design/Permit Pilot
Construct Exp. Well
Monitoring & Testing
Construct Pilot Treatment System
Core Samples
Build Recharge System
Operate Pilot Treatment System
Final Analysis, Modeling & Report
Project Review, Refine Tasks, Update Public Outreach

Case for Groundwater Replenishment with Purified Water

- safe, crystal clear, odorless
- extends existing supplies
- cost effective
- extend timeframe for developing more costly supplies

Project Team

- Public Utility Owner

- Cooperative Funding Partner

- Engineering Consultant

- Hydrogeology Consultant

Leggette, Brashears & Graham, Inc.

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