



Discover a Cleaner Tomorrow – A Program of Science and Conservation Education

For More Information Contact:
David Conrod
202-464-0107 david@conrod.com; or
Jan Tracy
727-582-7022 or jtracy@co.pinellas.fl.us

GOALS OF THE SOUTH CROSS BAYOU EDUCATION PROGRAM AND FACILITY TOUR

Water Education and Conservation

- Develop the full potential of community environmental education utilizing the unique teaching/learning features of a regionally significant and sophisticated conservation-oriented water reclamation facility
- Advance public understanding of the vital role of clean water for quality of life and the importance of stewardship of limited water resources

Science in Action for a Cleaner Environment

- Promote a deeper understanding and appreciation of how science is at work everyday for a cleaner environment

Promote Wise Use of Water Today – for Tomorrow

- Promote a deeper understanding of the best uses for reclaimed water
- Promote new stewardship to conserve and manage water resources today – and for future generations

Model for Public Education

- The South Cross Bayou *Discover a Cleaner Tomorrow* education program and tour is a model of public service and environmental science education

Cross Bayou Water Reclamation Facility
An Initiative of Pinellas County, Florida





Discover a Cleaner Tomorrow – A Program of Science and Conservation Education

For More Information Contact:
David Conrod
202-464-0107 david@conrod.com; or
Jan Tracy
727-582-7022 or jtracy@co.pinellas.fl.us

DEVELOPMENT OF THE SOUTH CROSS BAYOU EDUCATION PROGRAM AND FACILITY TOUR

In Florida, management of water is especially important. How we use, conserve and manage our water supply will greatly affect our quality of life now, and, even more so in the future.

Urban Water Management and Education

In Pinellas, Florida's most densely populated county, residents and government work together to conserve water to make efficient use of all water resources. Water reclamation helps to "get more mileage" out of available water resources. Making people aware of the need to reclaim wastewater and recycle its by-products will help Pinellas County to sustain the high quality of life enjoyed by residents and over 6 million annual visitors.

Leadership for Public Education

Partnering with Pinellas County Schools, the County looked to the classroom – and the next generation of stewards for Pinellas' natural resources.

The goal:

- ◆ To increase awareness and appreciation of the importance of clean water
- ◆ To teach the science of water reclamation and the role of citizens in managing limited water resources

An Educational Partnership Program

In partnership with Pinellas County Schools, teachers and students, special curriculum-based content was developed supporting a fun and memorable "theme" for learning the science of water reclamation. After 10 months and more than 15 planning sessions, the South Cross Bayou *Discover a Cleaner Tomorrow* education program was born. It combines a thought-provoking and compelling learning program for the general public with an interactive, valuable and qualitative teaching resource for Pinellas County high schools.

Cross Bayou Water Reclamation Facility
An Initiative of Pinellas County, Florida





Discover a Cleaner Tomorrow – A Program of Science and Conservation Education

For More Information Contact:
David Conrod
202-464-0107 david@conrod.com; or
Jan Tracy
727-582-7022 or jtracy@co.pinellas.fl.us

OVERVIEW OF THE EDUCATION PROGRAM, ON-SITE TOUR AND TEACHING MATERIALS

Start and Finish in the Classroom

The student educational experience begins in the classroom with a highly structured curriculum-based instructional program. A comprehensive Teacher Resource Guide correlates standard school science labs with processes at the South Cross Bayou Water Reclamation Facility – and identifies specific labs and principles covered during the on-site tour of the facility. An animated video focuses on the role of bacteria in water treatment in a fun and humorous way. Video hosts, *Mike Robe* and *John D. John* set the tone for serious learning in a light-hearted environment.

On-site Video and Tour

Once students arrive at the facility, a second video introduces the facility tour. Animated characters, *Mike Robe* and *Jon D. John* are back to host this sequel to the classroom video. Tours are led by a uniquely qualified guide – a special science educator from Pinellas County Schools. This full-time specialist teaches students how all four science disciplines work together in the real world.

Student Accountability and Hands-on Learning

Student workbooks ensure individual accountability for specific on-site learning – reinforced with hands-on labs and water testing kits. Students see “science in action” at the South Cross Bayou facility and talk with facility operators about careers in environmental science.

Students Log and Compare Test Results

At the end of the on-site tour, students log and compare their lab results with facility technicians – a quick accounting of their testing in the field and a way for students to know that the reclaimed water is clean and safe for use in irrigation.

Cross Bayou Water Reclamation Facility
An Initiative of Pinellas County, Florida





Discover a Cleaner Tomorrow – A Program of Science and Conservation Education

For More Information Contact:
David Conrod
202-464-0107 david@conrod.com; or
Jan Tracy
727-582-7022 or jtracy@co.pinellas.fl.us

TEACHER RESOURCE GUIDE AND STUDENT WORKBOOK

Outline of Teacher Resource Guide

The 47-page Teacher Resource Guide includes:

- Background information for teachers
- Science Standards (National Science and Sunshine State) and FCAT preparation
- Overview of South Cross Bayou Water Reclamation Facility and its unique recycling features
- Tour and related lab activities
- Tour stops and lab activities include:
 - Background information on the science concept to assist the teacher in teaching this curriculum area
 - Related classroom activities and/or experiments
 - Materials list for classroom experiments
 - Brief list of reference resources related to the science concept and to wastewater
- Student pre-test and post-test
- Glossary

Outline of Student Workbook

The 10-page Student Workbook includes:

- One page per tour stop holds the student accountable for the lessons taught at each tour stop. Additionally, the workbook will require students to:
 - Record measurements for experiments
 - Calculate according to a formula
 - Use critical analysis skills to deduce conclusions based on information on tour signage
 - Explain what they are seeing

Cross Bayou Water Reclamation Facility
An Initiative of Pinellas County, Florida





Discover a Cleaner Tomorrow – A Program of Science and Conservation Education

For More Information Contact:
David Conrod
202-464-0107 david@conrod.com; or
Jan Tracy
727-582-7022 or jtracy@co.pinellas.fl.us

○ PRE-TOUR VIDEO CURRICULUM AND TOUR STOPS

Tour Stop	Curriculum Focus	Labs & Activities
Pre-Tour Video	Role of bacteria and microorganisms	
Community Center	Overview	
Headworks	Flow rates	Classroom lab: Typical wastewater treatment process On-site activity: record TSS, Dissolved Oxygen and Nitrogen Levels
Teacups	Centrifugal and centripetal forces	Classroom lab: Bottled Up Tornadoes On-site activity: Calculate flow rates
Grit dumpsters	Seed dispersal and germination	Classroom lab: Seed Germination On-site activity: Observation
Aerator/Clarifier Overlook	Bacteria	Classroom lab: Biodegradable Balancing On-site lab: Testing for TSS, Dissolved Oxygen, nitrates and nitrites
Sand filters	Nitrogen cycle	Classroom lab: Water Works
Chlorine Contact Tank	Chlorine in our daily lives	Classroom lab: Chlorination for disinfection On-site lab: Testing for TSS, Dissolved Oxygen and nitrates and nitrites
Outflow Cascade	Water Quality	Classroom lab: testing for TSS, dissolved oxygen, nitrate and nitrites. On-site activity: record TSS, Dissolved Oxygen and Nitrogen Levels. Explain changes
Digesters	Methane production	Classroom lab: It's a Gas On-site activity: Explain digestion and methane production
Pelletizer	Desiccation	Classroom lab: Water of Hydration On-site activity: Critical Analysis
Control Room and Lab	Careers	On-site activity: Record and compare test results. Meet with staff and hear about careers

Cross Bayou Water Reclamation Facility
An Initiative of Pinellas County, Florida





Discover a Cleaner Tomorrow – A Program of Science and Conservation Education

For More Information Contact:
David Conrod
202-464-0107 david@conrod.com; or
Jan Tracy
727-582-7022 or jtracy@co.pinellas.fl.us

SOUTH CROSS BAYOU WATER RECLAMATION FACILITY: EDUCATION PROGRAM, GOALS & COMMUNITY SERVICE

Introduction: A National Model

The contributions made by water reclamation science and its positive impacts on quality of life go largely unnoticed in most communities. *The Discover a Cleaner Tomorrow* program for water conservation and education at the Pinellas County South Cross Bayou Water Reclamation Facility represents a nationally significant model for public service and environmental science education.

Water Conservation & Our Customers

Continued and improved levels of water conservation are dependent upon positive connections with customers on the importance of water reuse to our local ecology. Showcasing one of the most sophisticated water reclamation facilities in existence will build local confidence and pride in Pinellas County community water conservation programs – and environmental awareness in general. The program will add a new attraction of technical and environmental interest to our visitors - and a point of special interest to professionals visiting the area for water conservation programs.

Pinellas County Utilities connects an exploration of advanced water reclamation science with:

- Appreciation of clean water and its contributions to quality of life in Florida
- Environmental stewardship
- Compelling, educational and fun exploration of the science of water reclamation
- New, compelling high school science education/curriculum
- Public education
- Outreach

Cross Bayou Water Reclamation Facility
An Initiative of Pinellas County, Florida





Discover a Cleaner Tomorrow – A Program of Science and Conservation Education

For More Information Contact:
David Conrod
202-464-0107 david@conrod.com; or
Jan Tracy
727-582-7022 or jtracy@co.pinellas.fl.us

SOUTH CROSS BAYOU WATER RECLAMATION FACILITY: ROLE OF PUBLIC EDUCATION FOR WATER CONSERVATION

Water, Education and Stewardship

In Florida, water and its effective conservation, consumption, management and appreciation will effect how quality of life is measured well into the future. Pinellas County Utilities believes that the next generation of environmental stewards in Florida must appreciate the many forces that impact their environment – and the innovative solutions provided by their County government. The South Cross Bayou Water Reclamation Facility *Discover a Cleaner Tomorrow* education program and on-site tour provides new insight and tools for public education. *Discover a Cleaner Tomorrow* will promote a deeper appreciation and stewardship of the area's precious natural resources - and the essential public services helping to conserve them.

The Schools

The South Cross Bayou *Discover a Cleaner Tomorrow* education program complements Pinellas County high school science curriculum. The on-site tour experience can be expanded to support additional curriculum such as mathematics, health sciences and more. The program is designed to provide follow-up learning for students, additional teaching materials, study guides and bibliographies. A certified science educator facilitates each tour. A strong collaboration with Pinellas County Schools ensures the development and integration of the *Discover a Cleaner Tomorrow* education program with science and other curriculum.

Neighbors: Grassroots Conservation Education

Neighbors, Pinellas County residents, members of the public, and specialists from other communities are encouraged to tour the South Cross Bayou Water Reclamation Facility. Tours are scheduled by appointment. Visitors comfortably travel around the facility on a tram. A trained and qualified tour guide facilitates each tour.

Cross Bayou Water Reclamation Facility
An Initiative of Pinellas County, Florida





Discover a Cleaner Tomorrow –
A Program of Science and Conservation Education

For More Information Contact:
David Conrod
202-464-0107 david@conrod.com; or
Jan Tracy
727-582-7022 or jtracy@co.pinellas.fl.us

**SOUTH CROSS BAYOU WATER RECLAMATION FACILITY:
GOALS FOR THE PROGRAM OF WATER CONSERVATION & EDUCATION**

Primary Education & Tour Goals

Visitors will:

- Understand how the Utilities Department supports Pinellas County's commitment to conservation
- Understand the importance of science – and specific scientific principles – in producing reclaimed water for use in our neighborhoods
- Depart the tour and facility confident that water is handled by a competent and capable County staff with the knowledge and tools to provide secure, high-quality reclaimed water for use in our neighborhoods

In addition, visitors will:

- Understand the importance of water reclamation in water management
- Develop an appreciation for the high level of sophistication, professionalism, reliability, and integrity of the process of reclaiming water
- Understand that through their County government, citizens make maximum positive use of natural resources
- Understand Pinellas County Utilities' commitment to reuse and recycle
- Understand citizen action has a direct impact on the cost of treating waste, both in managing a facility, and in savings realized in not having to build new water supply facilities to support local growth
- Understand that proper disposal of chemicals and other pollutants reduces impact on water reclamation
- Understand that reusing and recycling make a difference

Cross Bayou Water Reclamation Facility
An Initiative of Pinellas County, Florida

