



Green St. Petersburg

Mayor Rick Baker
City of St. Petersburg, Florida • United States of America

September 2008



st.petersburg
www.stpete.org

Table of Contents

“Green St. Petersburg” Program	page 1
A. Electric Energy	page 2
1. Energy Conservation	page 2
2. Alternative Energy	page 3
3. LEED Certifications of City Buildings in St. Petersburg	page 4
B. Transportation	page 5
1. Fuel Conservation	page 6
2. Alternative Fuels	page 6
3. Transit and Multimodal Transportation	page 6
C. Parks, Preserves And Estuaries	page 8
1. Active Parks	page 8
2. Preserves	page 9
3. Estuaries	page 9
4. Tree City USA	page 10
5. Maintenance	page 10
D. Water Conservation And Supply	page 10
1. Conservation	page 10
2. Alternative Water Sources	page 11
E. St. Petersburg’s Land Use Policies & Sustainable Development	page 11
1. St. Petersburg’s Planning History	page 11
2. Re-focusing Development Policy with Vision 2020	page 13
F. Earth Friendly Recycling	page 13
1. Pinellas County’s Waste-to-Energy Plant	page 13
2. City Drop-Off Sites for Recycled Materials	page 14
3. Construction and Demolition Debris and Wastewater Sludge	page 14
G. Environmentally Preferable Purchasing Program	page 14

Guide to the appendix will be located on the DVD.



“Green St. Petersburg” Program

The city of St. Petersburg has long been an environmental leader in Florida, and its long-standing organizational commitment to sustainable practices explains why it was the first community in the state designated as a “Green City” by the Florida Green Building Coalition.

Initiatives that underpin the city of St. Petersburg’s commitment to environmental practices relate to:

- Electrical Energy
- Parks, Preserves and Estuaries
- Sustainable Land Development
- Environmentally Purchasing Practices
- Transportation
- Water Conservation and Supply
- Earth Friendly Recycling

The City of St. Petersburg’s Mission

Provide efficient and effective public services that protect and enhance sustainability of our environment and the quality of life in St. Petersburg.

These program areas are guided by the principle that all actions the city takes should meet the “double bottom line”: policies, programs, and capital investment should be economically and environmentally sound.

In addition to reforming its governmental operations to be environmentally sound, the city has overhauled its land development policies to promote higher density, mixed-use and more urban development patterns in many areas of St. Petersburg designed to facilitate transit-supportive development and alternatives to the automobile. Known as “Vision 2020”, this effort will shape the city for years to come.

After receiving the “Green City” designation, Mayor Baker sought to elevate the profile of – and extend the city’s commitment to – “green practices” to the city organization and its citizenry by promulgating Executive Order EO 08-01 (Green St. Petersburg). **Highlights of the Executive Order (provided in Appendix 7), include:**

- ✓ Reporting of financial and emission reductions
- ✓ Meeting LEED standards for large new construction or renovation projects undertaken by the city
- ✓ Using of alternative fuels
- ✓ Converting of street lighting system to more energy efficient systems
- ✓ Developing and implementing a prototype solar project



A. Electric Energy

Traditional power generation for the electrical grid in Florida is heavily reliant on fossil fuels, including fuel oil, coal or natural gas, and thus is a major contributor to greenhouse gas emissions. Natural gas burns cleaner than coal, emitting roughly one-half of the CO₂ of bituminous and anthracite coal. Because of this, Florida's electric utilities are expected to increase their use of natural gas among all fuels from 39 percent in 2006 to 54 percent in 2016, while reducing their reliance on coal from 29 percent in 2006 to 23 percent in 2016. (1) While the increased use of natural gas would improve CO₂ emissions in Florida if the population remained stable, it is expected that population growth in the state and the St. Petersburg/Tampa region will continue.



Downtown St. Petersburg

(1) Governor's Action Team on Energy and Climate Change. *Phase I Report: Florida's Energy and Climate Change Action Plan. Pursuant to Executive Order 07-128. (A Report to Governor Charlie Crist.)* November 1, 2007, 22-23.

In light of the reality of population growth, St. Petersburg has undertaken initiatives to reduce its energy usage through both conservation and alternative fuel strategies as not only a cost savings measure, but also to reduce its carbon footprint.

1. Energy Conservation

The city of St. Petersburg has implemented conservation measures mainly through technological upgrades to its traffic signals, lighting in its municipal buildings and structures and systematic audits of its buildings and processes.

LED Traffic Signals. St. Petersburg is responsible for owning and operating approximately 300 traffic signals throughout our corporate boundaries. We are replacing all of the incandescent bulbs in our traffic signal systems with light emitting diodes, or LED lights. These lights produce a 68% energy savings that will translate into a benefit of over \$150,000 in energy savings a year, a three-year payback on the investment, and a new lighting system life span of seven-plus years.

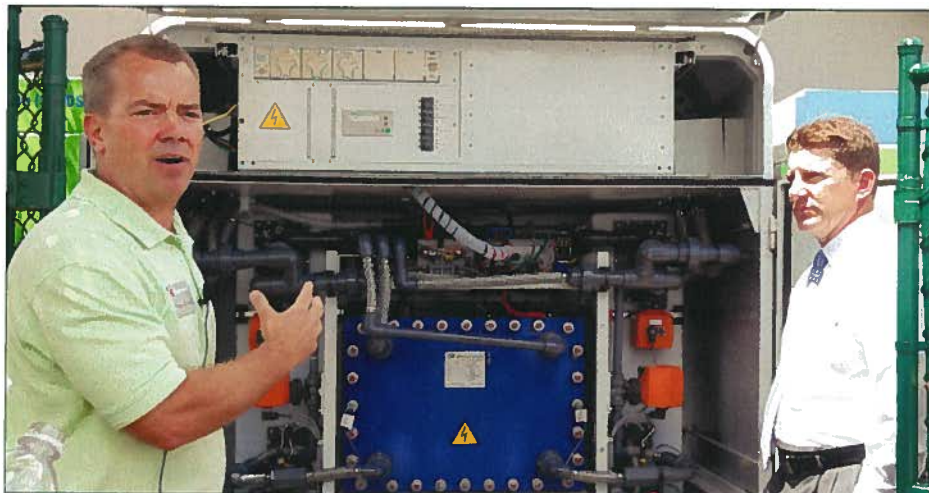
Induction Lighting. St. Petersburg is employing cutting-edge technology in converting municipal parking garages and structured lighting systems to induction lighting systems. Two downtown municipal parking garages – Progress Energy Center and South Core – are converting from metal halide and high-pressure sodium lighting systems to inductive systems. Annual energy savings are expected to reach 50 percent, with a 400 percent savings over the life of the system, resulting in a payback period for the capital investment of less than five years.

The city is also converting high pressure sodium streetlights to inductive lights. This pilot program is designed to launch a citywide conversion of street lights expected to save millions of dollars in electricity and maintenance expenses for over 30,000 streetlights along city roadways.

Energy Audits. Progress Energy, the local power provider to the city, has completed energy audits of all city facilities. The audits generated a list of energy conservation measures that provide the basis for a prioritized implementation program based on calculated payback benefits.

To date, the city has converted all buildings using incandescent lights to compact fluorescent lights, which have an expected payback period of less than one year. The conversion of existing T-12 fluorescent lamps and ballasts to T-8 with electronic ballasts is substantially completed. The city expects to realize a payback period of two years.

"Energy Conservation" continued on page 3



Solar Battery Technology at Albert Whitted Park



Pinellas County Waste-to-Energy Facility

"Energy Conservation" from page 2

The balance of energy conservation measures, ranging from improved insulation to HVAC systems, to complex mechanical and processing systems of our treatment plants are being prioritized for implementation and will serve as the basis for our Capital Improvement Program for years to come.

2. Alternative Energy

The city's commitment to alternative energy to power its operations is also motivated by the "double bottom line" logic of economic efficiency and savings as well as environmental sustainability and improvement.

Solar Power. In cooperation with the University of South Florida-St. Petersburg and Progress Energy, a photovoltaic solar energy system was installed at Albert Whitted Park, the latest addition to the city's Waterfront Park system in downtown St. Petersburg. The system is mounted on the roof of the park's restroom facility, complete with a state-of-the-art battery system that can supply power to the power grid. The power generation is more than required for the park's energy needs, thereby offsetting the city's electricity expenses. Also, St. Petersburg's Lakewood High School and St. Petersburg High School, part of Pinellas County Schools, derive 15 percent of their daily power from solar panels.

Methane. As part of the city's sanitary sewer treatment process, volatile organic compounds generated by methane gas are burned-off through the digestion of heated sludge. Historically, the city's treatment plants have burned the methane to the atmosphere. Using a design-build-operate approach, the city intends to capture the methane gas, dry and cleanse it, then flow it through a heat transfer unit and run turbines that will produce energy to power the treatment plants. The city expects to generate a 20 percent reduction in electricity expenses, while reducing air emissions associated with burning of methane gas.

Waste-to-Energy. Pinellas County, where St. Petersburg is located, has a waste-to-energy (WTE) plant that incinerates approximately one million tons in garbage every year, providing power to as much as 45,000 homes in the area. The process can produce up to 75 megawatts/hour of electricity. It sells about 60 megawatts to Progress Energy for distribution within the community, and the remainder powers the plant itself. The WTE facility uses state-of-the-art air pollution control technology, which continuously monitors WTE emissions, ensuring the plant's emissions fall within the United States Environmental Protection Agency's (EPA) standards.

3. LEED Certifications of City Buildings in St. Petersburg

The impact of buildings on energy use, urban air quality, and the environment is significant. According to the U.S. Green Building Council, buildings in the United States account for:

- ☐ 65 percent of electricity consumption,
- ☐ 36 percent of energy use,
- ☐ 30 percent of greenhouse gas emissions,
- ☐ 30 percent of raw materials use,
- ☐ 30 percent of waste output (136 million tons annually), and
- ☐ 12 percent of potable water consumption. (2)

Moreover, when factoring all the costs associated with building construction, the impacts are even greater. According to the US Energy Information Administration, the emission of greenhouse gases from buildings approaches 48 percent when the energy to extract, process, and transport building materials is considered. (3)

These environmental and economic costs can be overcome by efficient, whole-building design. According to a study by Deloitte and Touche and Charles Lockwood, a contributing columnist to "Urban Land", the average building certified as green using the U.S. Green Buildings Council's (USGBC's) Leadership in Energy and Environmental Design (LEED) rating system uses 32 percent less electricity and saves 350 metric tons of CO2 emissions annually. (4)

And environmentally efficient buildings need not cost more. A 2006 study by Davis Langdon Research found no significant difference in average costs for green buildings as compared to non-green buildings. Many project teams are building green buildings with little or no added cost, and with budgets well within the cost range of non-green buildings with similar programs. The study also found that, "in many areas of the country, the contracting community has embraced sustainable design, and no longer sees sustainable design requirements as additional burdens to be priced in their bids." (5)

(2) Dennis Creech and Nancy Musselwhite, "Building for the Next Billion," Economic Development Journal, Spring 2008, 17.

(3) Creech and Nancy Musselwhite, 19.

(4) Deloitte and Touche and Charles Lockwood. "The Dollars and Sense of Green Retrofits." Deloitte Development, LLC (2008), 1.

(5) Davis Langdon Research. "The Cost of Green Revisited: Reexamining the Feasibility and Cost Impact of Sustainable Design in the Light of Increased Market Adoption." (July 2007).

The LEED Essentials

Site-plan for sustainability

- Control erosion/sedimentation
- Evaluate solar access
- Mitigate stormwater on-site
- Preserve/restore vegetation
- Evaluate multimodal accessibility
- Design for longevity

Improve energy efficiency

- Holistic design of building systems to limit energy consumption
- Design for natural light

Conserve materials

- Use recycled building materials
- Reduce C&D waste
- Reduce occupant waste through comprehensive waste management

Improve air quality

- Reduce CFCs in HVAC equipment
- Improve air quality inside the built environment by establishing standards for indoor air quality
- Improve outdoor air quality by venting cleaner air and controlling environmental tobacco smoke

Safeguard water

- Control/prevent run-off
- Capture rainwater and condensate
- Reuse gray water
- Reduce use (low-flow toilets, etc.)

Source: Creech and Musselwhite, 2008



Mayor Baker's Executive Order requires large new city buildings and renovations to meet LEED standards.

As one of the largest property owners in St. Petersburg, the city understands these environmental impacts as well as the cost savings that can be achieved through environmentally sensitive design. Pursuant to Mayor Baker's 2008 Executive Order, the city has three major projects underway associated with certification for LEED (Leadership in Energy and Environmental Design).

Water Resources Administration Building. The 20,000-sq. ft. building will not only serve as an additional facility for disaster-related emergency operations, it will receive Silver Certification from LEED. LEED related features include energy efficient lighting and HVAC systems, water conservation and reuse measures, recycled materials, operational requirements to conserve water and electricity and recycling.

Jordan School. The circa-1928 Jordan Elementary School, a historic African-American education facility, is being renovated to LEED standards. Once completed, this building will use a fraction of the energy required to operate it prior to it being boarded up over a decade ago.

Fire Stations. The city has 13 fire stations and has developed a Master Plan to renovate or replace stations where necessary. The renovation of Fire Station No. 8 will receive LEED certification employing similar design and operational features as the Water Resources Administration Building.

B. Transportation

Transportation is Florida's second largest energy use sector, comprising more than a third of the total energy used. Consequently, the transportation sector is also a significant contributor to greenhouse gas emissions in Florida, accounting for about 46 percent of CO₂ emissions statewide. (6)

(6) Governor's Action Team on Energy and Climate Change (2007), 26.

The city of St. Petersburg has a multi-faceted approach designed to reduce automobile dependence, while still promoting economic development.



One of the city's hybrid vehicles.

Fuel Conservation

Fuel conservation is the "low hanging fruit" for addressing energy and environmental costs associated with an oil dependent economy. The city is meeting its conservation objectives through fleet operations and reduction, and traffic signal synchronization.

Fleet Operations and Maintenance. In addition to the transportation investments in alternative fuels and hybrids cited above, the city of St. Petersburg takes measures to reduce costs and improve its environmental performance by maintaining its fleet vehicles for efficiency and emissions, operating its own Compressed Natural Gas station, recycling waste oil, antifreeze and other materials, and using environmentally friendly cleaning solvents.

Fleet Reduction has been a priority for the city over the last several years. In its Fiscal Year 2009 budget, the city expects to save over \$323,000 in fuel and maintenance costs by removing over ninety cars from its fleet.

Traffic Signal Synchronization. There are more than 300 signalized intersections throughout the city of St. Petersburg. Over 25 percent of these signals are synchronized, allowing motorists that travel the speed limit to drive through intersections by avoiding the waste of fuel associated with idling, starting and stopping. The annual operating costs associated with staff, hardware and software to operate the systems are approximately \$100,000. The estimated annual fuel savings to the motorist are in excess of \$30 million.

2. Alternative Fuels

Bio-diesel Fuel. The city's entire diesel-engine fleet, which comprises over 630 vehicles, is powered by bio-diesel fuel. The cost is essentially the same as regular diesel, but the greenhouse gas emissions are reduced by 5 to 10 percent.

Ethanol. The city's entire gas-driven fleet, which is more than 1,170 vehicles, is running on a 10 percent ethanol/gasoline mixture at no increased cost and results in a commensurate reduction in greenhouse gas emissions.

Hybrid Vehicles. The city has nineteen hybrid vehicles in its fleet with five more on order. The average cost increase is \$6,000 per vehicle for purchasing a hybrid. However, the city has determined a favorable payback period of eight years based on the difference between fuel savings versus the additional incremental cost of the electric drive/battery system in hybrids.

The "Plug-In" Advantage
While standard hybrids require a combination of regenerative braking and energy from the engine to recharge the batteries and propel the vehicle, PHEVs can operate as electric vehicles with an internal combustion engine backup



The city of St. Petersburg and Progress Energy are cooperating on a pilot project to convert a conventional hybrid to a "Plug-In Hybrid Electric Vehicle" (PHEV). A PHEV is a regular hybrid vehicle with a large high-capacity battery bank that can be re-charged by plugging in to normal household current as well as using the on-board charging capabilities of normal hybrids.

3. Transit and Multimodal Transportation

Reducing vehicle miles traveled is one leg of the "three legged stool" needed to reduce CO2 emissions from automobiles. (7) (The other two being use of low-carbon content fuel and increased fuel efficiency.) Therefore, transit and

"Transit and Multimodal Transportation" continued on page 7

"Transit and Multimodal Transportation" from page 6

multimodal transportation options are a key element in reducing petroleum reliance and limiting greenhouse gas emission.

(7) Reid Ewing. Growing Cooler: The Evidence on Urban Development and Climate Change. Urban Land Institute, 2007, 28.
http://docs.nrdc.org/cities/cit_07092001A.pdf

As the oldest municipality in the densest county in Florida, St. Petersburg has an urban form – vibrant downtown and other activity centers, older mixed-use neighborhoods, and well-traveled and redeveloping commercial corridors that encourages mass transit use. In addition to a well-established and comprehensive bus service offered to city residents by the Pinellas Suncoast Transit Authority (PSTA), the city also has a downtown trolley service, and is in the planning stages for both bus rapid transit and a regional transit network.



Pinellas County Trail



Downtown's Looper Trolley



Some of the city's many cycling enthusiasts

City Trails. Since the adoption of its "CityTrails Bicycle and Pedestrian Master Plan" in 2003, the city of St. Petersburg has extended exponentially its bicycle trail network. At the adoption of the "CityTrails," there were 10 miles of bicycle lanes in St. Petersburg. To date, there are nearly 78 miles of bicycle facilities installed with another 15 miles of facilities in design, with completed designs, or under construction at this time. These facilities include marked bicycle lanes, marked shoulders for bicycle use, and shared-use trails, including the recently completed Pinellas Trail Extension to downtown. Once the "CityTrails Plan" is implemented, more than 150 miles of facilities will be constructed, and greater than two thirds of the city's major road network will have bicycle facilities. Through its bicycle safety, planning and construction efforts, St. Petersburg has been designated as a "Bicycle Friendly Community" by the League of American Bicyclists.

(7) Reid Ewing. Growing Cooler: The Evidence on Urban Development and Climate Change. Urban Land Institute, 2007, 28.
http://docs.nrdc.org/cities/cit_07092001A.pdf

Bus Rapid Transit. Since the early 2000s, the city, Pinellas County, and Pinellas Suncoast Transit Authority have been actively working to develop the Tampa Bay Region's first Bus Rapid Transit (BRT) project, which will connect downtown St. Petersburg with its northern Gateway employment center, the Tyrone Mall, the Gulf Beaches and Clearwater. The goals of the BRT project are to:

- ✓ support local revitalization and economic development plans along the system route;
- ✓ improve long-term livability;
- ✓ enhance safety and access for pedestrians and bicyclists;
- ✓ attract new ridership;
- ✓ support the unique character of the area; and
- ✓ provide service in a cost-effective manner.

Downtown Looper Trolley serves as the transportation alternative for residents, employees and visitors to downtown St. Petersburg wanting to "park once" while shopping, working or dining. The Looper has existed for 13 years as a partnership between the city of St. Petersburg, the Downtown Partnership and PSTA. Ridership in July 2008 was up 44 percent over the previous year. Plans are also being developed to expand the system westward to Tropicana Field and the Grand Central Main Street District.

Tampa Bay Area Regional Transit Authority. In addition to providing city- and county-wide transit alternatives, it is vital to promote regional transit to improve the commuter options to serve the Tampa Bay regional economy.

In 2007, the Florida Legislature created the Tampa Bay Area Regional Transportation Authority (TBARTA) to plan and implement a multimodal transportation system that will connect the seven counties making up the greater Tampa Bay region. (8) This new authority can finance, construct, operate, maintain, and manage the transportation system it develops. Its first step is to develop a multimodal Regional Transportation Master Plan by July 1, 2009, that will consider a variety of transportation modes, and address mobility, traffic safety, freight movement, emergency evacuation, and economic development needs around the region.

(8) These include Pinellas, Hillsborough, Sarasota, Manatee, Pasco, Hernando and Citrus counties.
For more information on TBARTA, link to <http://www.tbarta.com/>

C. Parks, Preserves And Estuaries



Boyd Hill Nature Preserve

Parks, open space and preserves are vital parts of a community, providing public health, aesthetic enjoyment, recreation and environmental services such as water retention, filtering and recharge, noise buffer, air filter and carbon sink. Preserves also provide refuges for native flora and fauna that are threatened by continuing urban development.

St. Petersburg's more than 140 parks provide respite to citizens from the hustle and bustle that comes from living in the densest county in Florida.

1. Active Parks

The city's park system includes active recreational parks like ball-fields, tot lots and dog parks. Citizens can also take advantage of the recreational opportunities offered by the city's extensive kayak and bike trail system.

In addition to the CityTrails program described above, St. Petersburg and Pinellas County have miles of beautiful shoreline providing paddlers with a variety of opportunities and experiences as they explore the coastline and the rich array of marine and estuarine ecosystems that make up Pinellas County's waters. Within St. Petersburg are scores of sites, including Weedon Island, Fort DeSoto, Lassing Park, Coffee Pot Bayou, Big Bayou and Bay Vista, where interested kayakers experience a diverse thriving ecosystem.

Since the early 1900s, the city has had one of the finest waterfront park systems in the Southeastern United States, if not the entire country - a design feature ensuring downtown St. Petersburg's enduring charm for future generations.

"Active Parks" continued on page 9



"Active Parks" from page 8

2. Preserves

The city of St. Petersburg has three nature preserves within its borders – Boyd Hill, Clam Bayou and Weedon Island.

Boyd Hill Nature Preserve is a 245-acre park on the shores of Lake Maggiore that offers more than three miles of trails and boardwalks, five ecosystems, including hardwood hammocks, pine scrub, pine flatwoods and lakeshore; and interpretive programming. The Preserve also offers an Environmental Study Program and Education Center. A major cleanup of the lake bed in 2004-2005 improved its water quality and habitat.

Clam Bayou Preserve is located in southwest St. Petersburg offering hiking, canoeing and kayaking. The Clam Bayou Marine Education Center will be the site of a demonstration project focusing on the environmental and economic value of creating and maintaining a native Florida landscape. Components of the restoration include planting native, drought-resistant plants, creating footpaths of porous materials, producing plant identification guides and developing educational curriculum.

Weedon Island Preserve is owned by the state of Florida and managed by the Pinellas County Parks Department under a lease agreement with the state. The Island was included on the National Register of Historic Sites in 1972 and purchased by the state in 1974 with funds from the state's Endangered Lands Program. The preserve offers a cultural and natural history center to interpret the thousands of years of human habitation in Pinellas County.

Weeki Wachee Property is 430 acres of environmentally sensitive land in Hernando County once owned by the city of St. Petersburg. The city sold the land to the Southwest Florida Water Management District in the early 2000s under the condition to maintain it as a preserve.



Weedon Island Preserve



Boyd Hill Nature Preserve

3. Estuaries

Tampa Bay is the largest estuary in the state of Florida, encompassing 400 square miles of open water and 2,300 square miles of highly developed watershed that supports industry, agriculture, and a diverse population in excess of 2.4 million people. Estuaries like Tampa Bay are among the diverse and productive ecosystems in the world. More than 70 percent of all fish, shellfish, and crustaceans spend some part of their lives in the protected waters of estuaries like Tampa Bay. Residents from the Manatee River to Clearwater Harbor and from Hillsborough Bay to the Gulf of Mexico depend on Tampa Bay for commercial and recreational activities.

St. Petersburg has nearly 300 linear miles of shoreline, that rims Tampa Bay and Boca Ciega Bay. Protecting them from point and non-point pollution will enhance those resources for environmental and recreational use for future generations to come. The city has developed a list of projects that focus on reducing nitrogen in order to improve our bay water quality.

"Estuaries" continued on page 10

"Estuaries" from page 9

These include:

- ☐ Lake Maggiore restoration effort;
- ☐ Mirror Lake pretreatment facility;
- ☐ Jungle Lake pretreatment facility; and
- ☐ Booker Lake pretreatment facility (forthcoming).



Our downtown streets are swept once a week. By removing the debris that collects in our street, we also pick it up before it becomes mixed with storm water runoff and ultimately discharges into our surrounding bay water.

4. Tree City USA

The city has received the Tree City USA award from the National Arbor Day Foundation for the past 20 years. The city has an ordinance to protect trees and, since 2001, the city of St. Petersburg has planted nearly 18,000 trees. In addition to an ongoing tree planting in its parks, the city also plants trees along its rights-of-way and interstates.

5. Maintenance

The city's routine park maintenance activities are performed at a high standard. Only chemicals, such as herbicides, pesticides or fertilizers that have been deemed safe for the environment are used by the city. The city also uses only trained licensed professionals in the applications of these materials. The city Parks Department also uses water conservation practices as well as reclaimed water in observance of established watering restrictions.

D.

Water Conservation And Supply

1.

Conservation

Since the late 1980s, the city of St. Petersburg has aggressively implemented water conservation measures, which has led to St. Petersburg seeing significant reductions in total and per capita consumption over the last two decades. In 1986, the city's "average yearly water demand" was 41 million gallons a day; in 2007, after years of water conservation programs, it was only 30 million gallons a day. In 1990, the city's daily "gallons per capita" was 117 gallons; in 2007, it was 95 gallons.

The city of St. Petersburg meets its water conservation objectives through a variety of programs including a low-flush toilet rebate program, indoor/outdoor water conservation kits, sprinkler system efficiency, education programs and watering restrictions.

Ultra Low-Flush Toilet Rebate Program accelerates the voluntary replacement of older, high flush fixtures. In place since 1997, the program has replaced 28,000 toilets at over 22,000 locations, with an estimated annual water savings of over 200 million gallons.

Indoor and Outdoor Water Conservation Kits are provided by the city, and include low-flow shower-heads; faucet aerators; toilet leak detection tablets; toilet water displacement devices; and hose shut-off nozzles. The city aggressively promoted the kits from 1994 to 1997 when staff went door-to-door installing 143,000 kits. A "give-away" program since 1998 has distributed 5,000 kits. The city estimates the program saves over one million gallons per day.

"Conservation" continued on page 11

Since the 1980s, the city of St. Petersburg has implemented water conservation programs resulting in a 19 percent reduction in daily per capita use and a 27 percent reduction in the city's total daily water demand. During the same period total population increased by more than 14,000 people.

"Conservation" from page 10

Sprinkler System Efficiency is important to the city because outdoor irrigation consumes up to 50 percent of total household water use. To combat water waste, the city has given away over 6,800 rain sensor gauges since 1996 that can save up to 25 percent of water use by preventing sprinklers from coming on during or after a rain event.

The city of St. Petersburg estimates that "efficient sprinkling" saves 700,000 gallons of water a day.

In addition, the city has a "Sensible Sprinkling Program" that focuses on improving sprinkler efficiency through in-house "checkups" of commercial, industrial and residential customers that can improve efficiency by up to 60 percent. Since the 1990s the city has performed 1,000 checkups and installed eight hundred rain sensors.

Drop Savers Youth Education Program educates St. Petersburg's future decision-makers, who often bring home the message of water conservation to friends and family. The program reaches over 7,000 private and public elementary school students each year. An annual T-shirt design contest with a water conservation theme culminates with an awards ceremony and presentation at a St. Petersburg City Council meeting.

Watering Restrictions have been in place in St. Petersburg since 1989, brought about by several years of drought in the 1980s. Customers are limited to watering twice weekly. City staff enforces the restriction, with a strong emphasis on educating water users through informational postcards, reminders, and warning notices prior to citation. The city's reclaimed water system (described below) is also subject to restrictions by authorization if the system is experiencing problems.

Industrial, Commercial, and Institutional Customers are offered audits for indoor and outdoor water use. The program includes a "restaurant spray valve replacement" program, which is a dish-rinsing device that could save food service customers up to 50 percent in their water usage. The city estimates a savings of 150,000 gallons per day.

Water Pricing and Billing. The city of St. Petersburg also encourages water conservation through an inverted rate structure and informative billing.



Inverted Rate Structure. St. Petersburg was one of the first public water utilities in Florida to establish a water-conserving rate structure in 1985. To encourage customer awareness of the resource, water becomes increasingly more expensive as the customer uses more water.

Informative Billing by the city's utility bills allows customers to graph their consumption line; compare monthly consumption to the previous year each on utility bill; provide web access that tracks previous years and displays monthly consumption comparison in bar graph format.

2. Alternative Water Sources

Even with its effective demand reduction strategies, the city of St. Petersburg as well as other communities in drought-prone Florida need to diversify water supplies to meet current and projected growth. To that end, St. Petersburg has been a leader in alternative water sources such as reclaimed water and desalination.

Reclaimed Water is a product of recycled and treated wastewater. In the 1980s, St. Petersburg was the first in the nation to provide reclaimed water for non-agricultural irrigation use. Currently, more than 10,500 consumers (10%) of the city's utility customers use the system which has an average daily supply capacity of 35 million gallons. Through this program, the city became the first utility in the nation to achieve zero discharge of wastewater into adjacent waterways.

Tampa Bay Water is the region's wholesale supplier of 182 million gallons per day. It provides innovative water supply alternatives through its Seawater Desalination Plant and Regional Reservoir. The pioneering Desalination Plant, recently constructed, is the largest plant in the nation and provides up to 25 million gallons of water a day for the Tampa Bay area. The Regional Reservoir opened in 2005, and captures and stores surface water to augment the regional water supply during the spring dry season. It can hold up to 15 billion gallons of water.

E. St. Petersburg's Land Use Policies & Sustainable Development

There is an inextricable link between a community's transportation and land use policies, its reliance on the automobile and the emissions of greenhouse gases. Since the end of the Second World War, Americans have become a suburban nation, living in single-family neighborhoods dependent on the automobile for much of their daily activities such as shopping, work and recreation. The Lincoln Land Institute finds that:

More than half of the U.S. urban landscape is now developed in a pattern that suits the car, but also makes transit use or walking almost impossible. Not only do these landscapes increase the amount of energy required for transportation, but they are also linked to a 30 percent premium on the average cost of heating and air conditioning buildings when compared to buildings of similar uses in denser urban areas. (9)

(9) Patrick Condon, "Planning for Climate Change" Land Lines (Lincoln Institute of Land Policy), January 2008.

Because communities have regulatory control over the land development process, they can substantially affect their urban form and help reduce reliance on the automobile and its resulting impact on oil dependency and emissions of greenhouse gasses. The city of St. Petersburg has taken large strides to develop in a transit-supportive way that provides its citizenry with transportation choices and the opportunity to live, work and play without reliance on the automobile.

1. St. Petersburg's Planning History

Since the 1920s the city of St. Petersburg has been a leader in urban planning in Florida and the United States. Planning began in St. Petersburg in the 1920s with John Nolen, noted city planner of the period, whose plan for the city reinforced the importance of its park system, civic buildings and wide boulevards, which retain their significance to this day.

"St. Petersburg's Planning History" continued on page 13

"St. Petersburg's Planning History" from page 12

City-wide planning continued in the 1940s with the Harland Bartholomew Plan, which continued and strengthened development of the street grid pattern. The Bartholomew Plan set the groundwork for the development of the automobile oriented commercial corridors throughout our city today.

Another city-wide planning effort consisted of The Conceptual Plan of 1974. The Conceptual Plan reflected the desire to alter many of the negative construction practices of the 1950's era such as the small, poorly constructed, mass-produced housing stock built shortly after World War II. This planning effort reinforced the quality, suburban style neighborhoods of the south, west and north edges of St. Petersburg.

2. Re-focusing Development Policy with Vision 2020

The city's most recent planning effort is the citizen-based Vision 2020, which recognized the city's need to develop in an "urban" manner to both capitalize on its assets, including a vibrant downtown, strong neighborhoods, and quality transportation system, and offset its geographical limits as a built-out, peninsular community. The "Vision" was codified in the city's land development code and comprehensive plan by:

- ✓ Increasing permitted development densities and intensities in many areas of the city;
- ✓ Focusing infrastructure and transit improvements in employment and activity centers;
- ✓ Preserving historic buildings and neighborhoods from demolition and blight;
- ✓ Revitalizing commercial corridors to provide for increased densities and mixed-use development, including residential; and
- ✓ Redeveloping downtown to promote residential development as well as employment, and supporting "quality of life" uses such as restaurants, parks, galleries, museums and shopping to ensure "24/7" activity.

F Earth Friendly Recycling

The city of St Petersburg is among the leading communities in Florida in the amount we recycle, and in our pro-active approach to improving our environment. St. Petersburg's public-private recycling effort has resulted in its recycling more material than any other of the 25 communities in Pinellas County in terms of total amount of recycled material. St. Petersburg also ranks as the third highest in the state of Florida in terms of amount recycled per capita. Pinellas County ranks 11th of the 67 counties in the state as it relates to recycled material per capita, making St. Petersburg among the recycling leaders in Florida.

The city's efforts in solid waste management focus on providing fuel for Pinellas County's waste-to-energy facility; encouraging private efforts through city-run drop-off sites, and recycling of construction/demolition debris and sanitary waste sludge.

Pinellas County's Waste-to-Energy Plant

Nearly 85 percent of all garbage collected in St. Petersburg is converted to electricity at this facility which, emits significantly less greenhouse gasses than other facilities providing our electricity. Metals are separated at the facility with magnets and are recycled also.



"City Drop-Off Sites for Recycled Materials" continued on page 14

2. City Drop-Off Sites for Recycled Materials

Florida's environmental agency (FDEP) estimates that up to 11 percent of the total waste stream is comprised of materials such as newspaper, plastic bottles, glass, aluminum and steel cans which can be recycled by residents. To manage this waste stream and encourage recycling efforts by its citizens, the city's web site provides a city-wide map identifying the 22 city facilities and more than 130 private facilities throughout St. Petersburg where residents can drop off recyclable materials. They are located near parks, churches, schools, apartment complexes, and other places so residents do not have to make an extra trip to deliver these materials. Also, over 100 paper recycling programs are active at private businesses throughout our city.

The city also annually recycles 40,000 tons of tree and plant clippings that are recycled by the city into mulch which is used by city operations, citizens and the agricultural community. Also, the city provides containers and recycles approximately 2,500 tons per year of cardboard at approximately 250 locations. An even greater amount of cardboard is recycled at private locations each year.

3. Construction and Demolition Debris and Wastewater Sludge

The FDEP has estimated that 24 percent of the waste stream is comprised of construction and demolition debris. City operations have taken a lead in this area by recycling almost 22,000 tons of roofing tiles, asphalt and concrete each year.

At city water reclamation facilities, wastewater sludge is conditioned and recycled by spreading the material on agricultural lands as fertilizer, at the rate of 5,900 tons per year.

According to the U.S. Environmental Protection Agency's 2005 Annual Report on Municipal Solid Waste, Americans recycle 533 pounds per capita of solid waste. Through the various methods described above, each person in St. Petersburg, on average, recycles in excess of 930 pounds, or 75 percent more than the national average. These figures do not include 124,000 tons per year of St. Petersburg solid waste burned at the County Waste-to-Energy Facility for re-use as electricity. Thus, the city's holistic "Earth Friendly Recycling" program achieves its solid waste management objectives.

G. Environmentally Preferable Purchasing Program

The city is putting in place an Environmentally Preferable Purchasing Program patterned after USEPA model for same. This comprehensive city procurement program will lessen or reduce the effect on human health and the environment when compared to other products and services that serve the same purpose. Products will include but not necessarily limited to transportation, vehicular, paper, non-paper office products, landscaping, park and recreation, construction and recyclables.