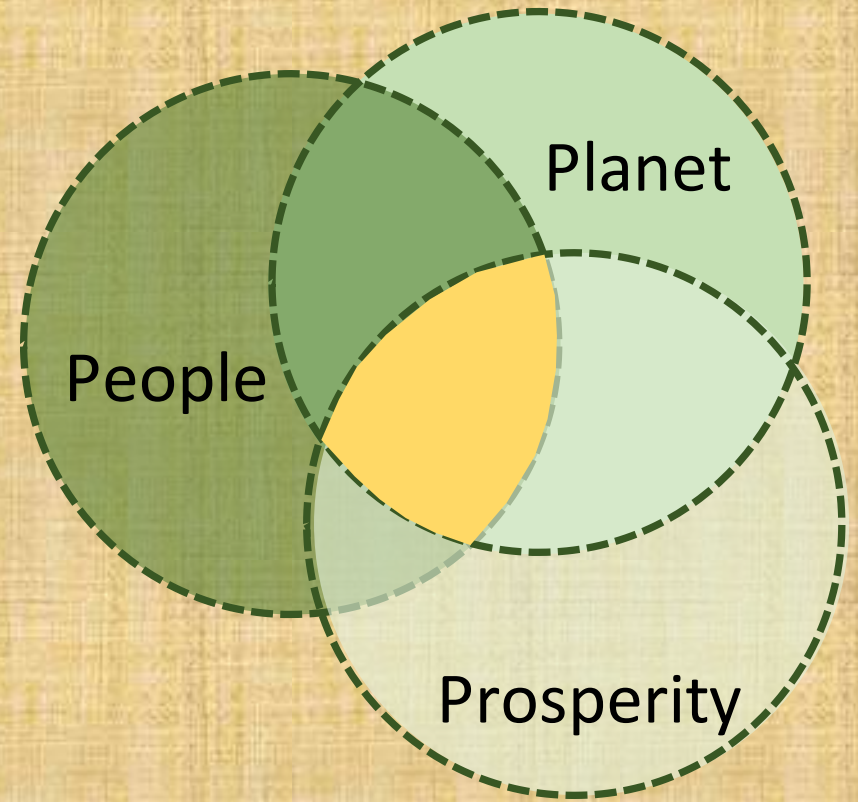




City Sustainability Initiatives and Practices



Presentation to the Sustainability Committee

November 21, 2019



Outline of Presentation

- Background
- Florida Green Local Government Certification
- Citywide Examples by Medium
 - energy and air, water, waste, health, land use, and awareness
- Discussion



Background

- This purpose of this presentation is to provide a current overview of City initiatives and practices related to Sustainability
- This is not intended to be an all inclusive list of our activities, but rather an overview with relevant examples
- The presentation is organized according to the categories utilized by the Florida Green Building Coalition (FGBC) in their assessment of City sustainability programs



Florida Green Local Government Certification

- In 2013, the City achieved the **Silver** level certification for Green Local Government by the Florida Green Building Coalition
- This certification was unique in that it was prepared entirely by staff and coordinated by the Police Department
- This certification has been maintained and was re-confirmed in 2018 (photo)





What defines a Florida Green Local Government

- Created under a grant from the U.S. Department of Energy and the Florida Energy Office
- FGBC Green Local Government Standard designates Green Cities and Green Counties for outstanding environmental stewardship.
 - Environmental practices done "in-house"
 - Incentives and ordinances to foster green practices
 - Educational activities to improve the environment
- A list of criteria is presented, and each is assigned a point value.
- Criteria are organized in terms of department functions for improving environmental performance through a number of mediums (**energy and air, water, waste, health, land use, and awareness**)
- A minimum total point value is set that represents a bar, and local governments who incorporate sufficient criteria to meet or exceed the bar are "certified" or "registered" as a Green Local Government



Sample Worksheet

Florida Green Local Government Standard Filter Tool

Use this sheet to create custom reports to facilitate tracking of progress or distribution of criteria lists to individuals or departments.

Version 4.1
Revised 2-8-17

Energy & Air
Water
Waste
Health
Land Use
Assessment

#	EA	W	H	LU	A	Credit Name	MPP	MAP	CPA	Actual Department Name
R3a	L				✓	Closed landfill management	1	✓ 1	✓ 1	Solid Waste
R4a	C		✓			Incentives for local businesses who utilize EPP or other solid waste reduction strategy	1	✓ 1	0	Solid Waste
R4b	C		✓			Mandatory recycling of typical recyclables and C&D debris for homes and businesses	1	✓ 1	0	Solid Waste
R4c	C		✓			Mandatory recycling program for large volumes of C&D debris.	2	✓ 2	0	Solid Waste
R4d	C		✓		✓	Offer waste assessments to businesses.	1	✓ 1	0	Solid Waste
R5a	C		✓		✓	Volume based or special rates for solid waste collection	1	✓ 1	0	Solid Waste
R5b	C		✓			Offer mulched yard waste to community	1	✓ 1	✓ 1	Solid Waste
R5c	C		✓			Require recycling at all local government buildings.	1	✓ 1	0	Solid Waste
R5d	L		✓			Develop a program of composting waste.	1	✓ 1	0	Solid Waste
R5e	L		✓			Develop a program of yellow and/or brown grease recycling.	2	✓ 2	0	Solid Waste
R6a	E		✓		✓	Teach EPP / recycling to local businesses	1	✓ 1	0	Solid Waste
R6b	E		✓		✓	Develop education program for solid waste management	1	✓ 1	✓ 1	Solid Waste
R6c	E		✓		✓	Offer educational materials to increase recycling program participation.	2	✓ 2	0	Solid Waste
R7a	E				✓	Conduct a customer waste survey	1	✓ 1	0	Solid Waste
S1a	L	✓				Seek FLDEP plant operations excellence award	2	✓ 2	✓ 2	Water and Wastewater
S1b	L	✓				Create a reclaimed water infrastructure	2	✓ 2	✓ 2	Water and Wastewater
S1c	L	✓				Sanitary sewer overflow abatement.	2	✓ 2	✓ 2	Water and Wastewater
S2a	L	✓				Conduct energy audit of treatment facilities	1	✓ 1	✓ 1	Water and Wastewater
S2b	L	✓				Use cogeneration	1	✓ 1	0	Water and Wastewater
S3a	L		✓			Use recycled bill envelopes	1	✓ 1	✓ 0	Water and Wastewater
S4a	C	✓			✓	Utilize rate structures based on consumption	1	✓ 1	0	Water and Wastewater
S4b	C	✓				Low flow fixture rebates	1	✓ 1	0	Water and Wastewater
S4c	C	✓			✓	Enforce watering restrictions during meter reads	1	✓ 1	0	Water and Wastewater
S4d	C	✓				Require metering of shallow aquifer removal and sub-metering of multi-family housing	1	✓ 1	0	Water and Wastewater
S4e	C	✓			✓	Adopt policies to encourage alternative onsite wastewater and water reuse technologies and app	1	✓ 1	0	Water and Wastewater
S4f	C	✓				Adopt Appendix C of the Building Code related to gray water.	1	✓ 1	0	Water and Wastewater
S5a	E	✓			✓	Utilize informative billing	1	✓ 1	0	Water and Wastewater
S5b	E				✓	Distribute printed material or create internet content detailing water wastewater source	1	✓ 1	0	Water and Wastewater
S5c	E				✓	Create an education campaign for water use reduction (Florida friendly landscaping, rainwater, et	2	✓ 2	0	Water and Wastewater
S5d	E	✓				Maintain an on-call water quality program	1	✓ 1	✓ 1	Water and Wastewater
S5e	E	✓			✓	Become part of groundwater guardian program	1	✓ 1	✓ 1	Water and Wastewater
S5f	E	✓			✓	Offer home and business audits	1	✓ 1	0	Water and Wastewater
S5g	E	✓			✓	Enable customers to track and analyze their usage via the internet	1	✓ 1	0	Water and Wastewater
IV1						Waste to Energy	2	✓ 2	✓ 2	Public Works and Engineering
IV2						Energy Efficiency Improvements (from G1a)	2	✓ 2	✓ 2	Public Works and Engineering
IV3						0	0	0	0	Public Works and Engineering
IV4						0	0	0	0	Public Works and Engineering
IV5						0	0	0	0	Public Works and Engineering

Audit ✓

Audit ✓

L Lead by Example

Maximum Possible Points Total 421



Benefits of a Florida Green Local Government Certification

- Process for determining qualification looks across all departments to determine what is currently being done, what the needs/desires are, and what remains to be done in order to qualify.
- This process inherently requires extensive communication between departments, eventually identifying areas of potential cooperation to better achieve common goals
- As local governments learn more about how being green can help them accomplish their goals, it is carried through to the private sector to apply the same principles through the creation of green homes, green commercial buildings, and green land developments.



Citywide Examples by Medium

- energy and air,
- water,
- waste,
- health,
- land use,
- and awareness



Energy and Air

- Renewable Energy on Government Buildings:
Pilot solar project at WWTF, 2013
- This project was completed by City staff
- 20 solar panels installed on roof of WWTP building
- A demonstration project using the latest technology:
 - 240 watt polycrystalline panels
 - Enphase microinverters for more efficient power transfer





Renewable Energy on Government Buildings: RO Facility Solar Master Plan, 2017

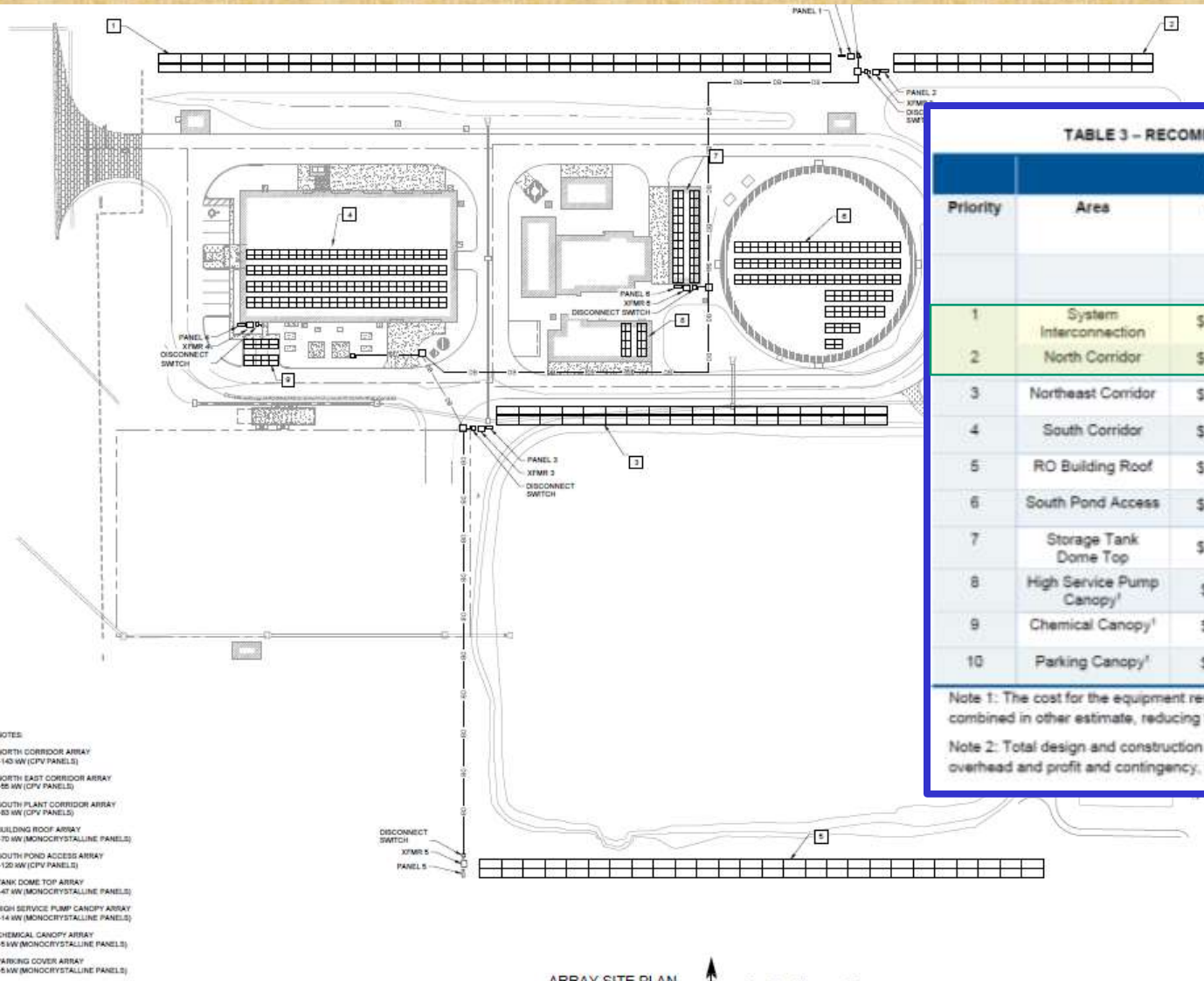


TABLE 3 – RECOMMENDED ORDER OF IMPLEMENTATION

Priority	Area	OPINION OF PROBABLE COST			
		Cost ¹	System Capacity (kW)	Cumulative Cost	Cumulative System Capacity (kW)
1	System Interconnection	\$471,621		\$471,621	-
2	North Corridor	\$498,173	143	\$969,794	143
3	Northeast Corridor	\$202,035	55	\$1,171,829	198
4	South Corridor	\$303,231	83	\$1,475,060	281
5	RO Building Roof	\$158,760	70	\$1,633,820	351
6	South Pond Access	\$433,615	120	\$2,067,435	471
7	Storage Tank Dome Top	\$116,900	46.5	\$2,184,335	517.5
8	High Service Pump Canopy ¹	\$37,170	14	\$2,221,505	531.5
9	Chemical Canopy ¹	\$12,390	5	\$2,233,895	536.5
10	Parking Canopy ¹	\$12,390	5	\$2,246,285	541.5

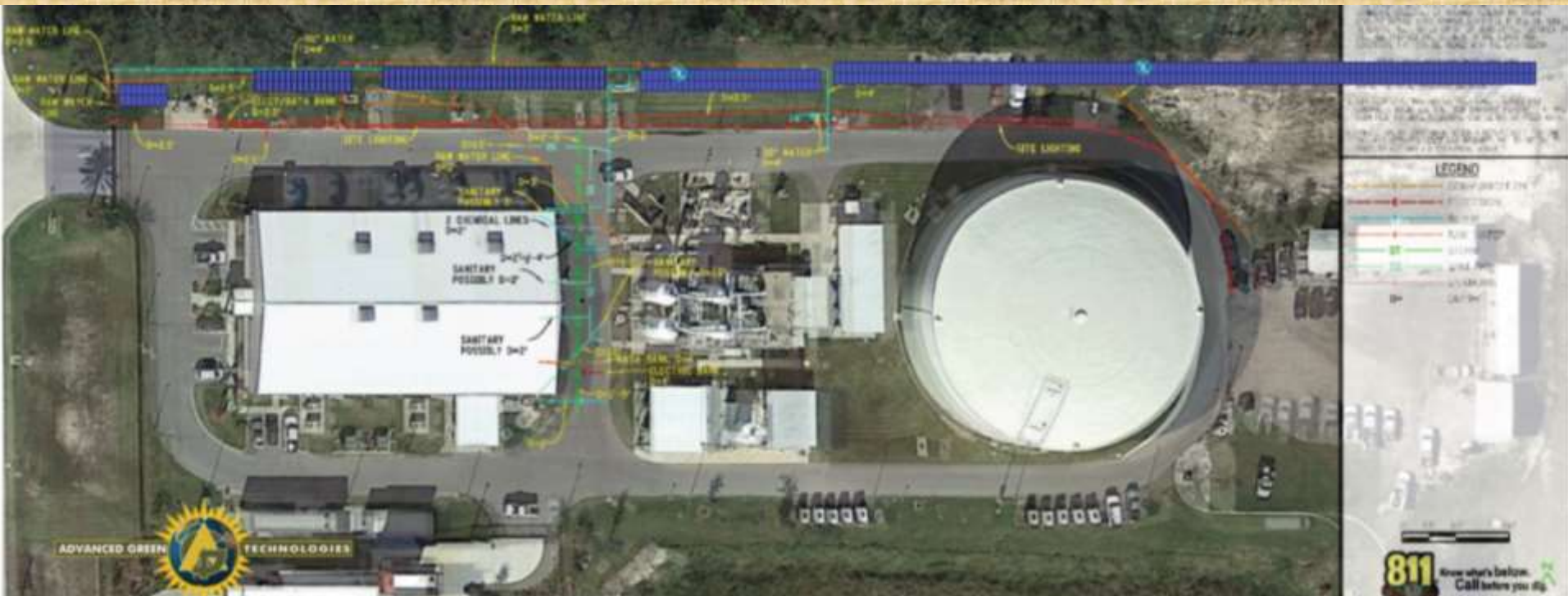
Note 1: The cost for the equipment required for interconnect to plant electrical system for this option is combined in other estimate, reducing the total cost of this option. See Figure E-04 for additional detail.

Note 2: Total design and construction cost, including engineering fees, general conditions, contractor overhead and profit and contingency, is utilized.



Energy and Air

- Renewable Energy on Government Buildings: RO Water Facility, 2019, Phase I
- Alternative water supply facility powered by renewable energy
- First phase includes 162kW solar array, 416 panels





Energy and Air

• Citywide Energy Efficiency

• Facilities: On-going Energy Performance Contract with AMERESCO:

- reduced energy consumption,
- lower operating costs and overall maintenance expenses.

• LED Lights – changed in office buildings (interior/exterior) where remodeled or replacement is required, tennis courts, decorative light poles (Safford Ave.) and Welcome to Tarpon signs. Includes automation light control systems.

• Working with Duke Energy on replacement of conventional street lights to LED lighting throughout the City.

• Upgrading Air Conditioning units to more energy efficient systems.

AMERESCO
Green • Clean • Sustainable

Annual Reconciliation Report – Year Two

Table 1.4. Annual Utility Comparison – Guaranteed

City of Tarpon Springs: Year 2 Utility Summary				
ECM #	ECM Description	Guaranteed Savings		
		Electricity (kW)	Electricity (kWh)	Total (\$/mbtu)
1	Lighting System Improvements	754	176,435	602
2	Outdoor Lighting	384	112,128	383
3	Energy Management Systems and Controls Re-Commissioning	421	260,742	890
4	HVAC Equipment Replacement and/or Modifications	446	324,093	1,106
5	Building Envelope Improvements	12	633	2
6	Influent Pump Addition at WWTP	192	64,200	219
Totals		2,209	936,321	3,202





Energy and Air

- Public Works, Vehicle Fleet
- Purchase of 2 detective vehicles this year that have an EPA rating of 29 MPG to replace 2 active detective vehicles that are rated at 15 MPG.
- FY 2021 to include compatibility studies for Admin vehicles that are either full electric (EV) or hybrid vehicles (HV),
- City has 4 electric charging stations for 10 vehicles at various locations in the City.
- Fleet will do compatibility study for selecting optimum hybrid or electric vehicle for required duty
 - Example: EV for short range continuous duty not requiring large cargo capacity, *meter readers?*



2019 Nissan Altima Turbo 4 cyl., ICE



2020 Prius Prime HV / EV



2019 Nissan Leaf EV



Energy and Air

- IT Department

- Most new IT equipment purchases have environmental certifications, such as:
 - ENERGY STAR
 - EPEAT Registered*
 - TCO Certified
 - CEL
 - WEEE
 - Etc.
- Objectives and targets focused on environmental and management systems, both from our employees and our suppliers.
- Transitioning to LED lighting in the theater to reduce the kW hours. Current stage lights at full capacity using 65 kW per hour, down from 81 kWh 2 years ago.






Energy and Air

• Heritage Museum -2015

- Ecology Wing was renovated with ten new Christopher Still reproductions
- New track lighting was installed to prevent the art reproductions from being discolored by the previous florescent lighting system.
- 43 dimmable LED lights in the new, energy efficient lighting system.
- The LED bulbs installed use about 18% of the energy of the previous system



Architectural 14W PAR38, 800LM Dimmable CIVILIGHT



Features

- 14W
- 800lm (6000K)
- Dimmable (0-10V)
- 50,000 hours life
- 18% energy saving

Applications

- Track lighting
- Ambient lighting
- Accent lighting

Type	PAR38		PAR30		PAR20		PAR16	
	Power (W)	Beam Angle (°)	Power (W)	Beam Angle (°)	Power (W)	Beam Angle (°)	Power (W)	Beam Angle (°)
PAR38	14	120	14	120	14	120	14	120
PAR30	14	120	14	120	14	120	14	120
PAR20	14	120	14	120	14	120	14	120
PAR16	14	120	14	120	14	120	14	120

Caution: Please do not touch the bulb when it is hot.

CIVILIGHT NORTH AMERICA CORP
 10000 W. 10th Street, Suite 100, Fort Worth, TX 76116
 Tel: 817-412-1000 Fax: 817-412-1001 www.civilight.com



Water

- Alternative Water Supply (RO) Facility, 2015
- 50% grant funded from the SWFMWD
- Utilizes brackish groundwater as a source (otherwise unusable due to salinity)
- Self reliant, local water supply with auxiliary power (low emission generator)



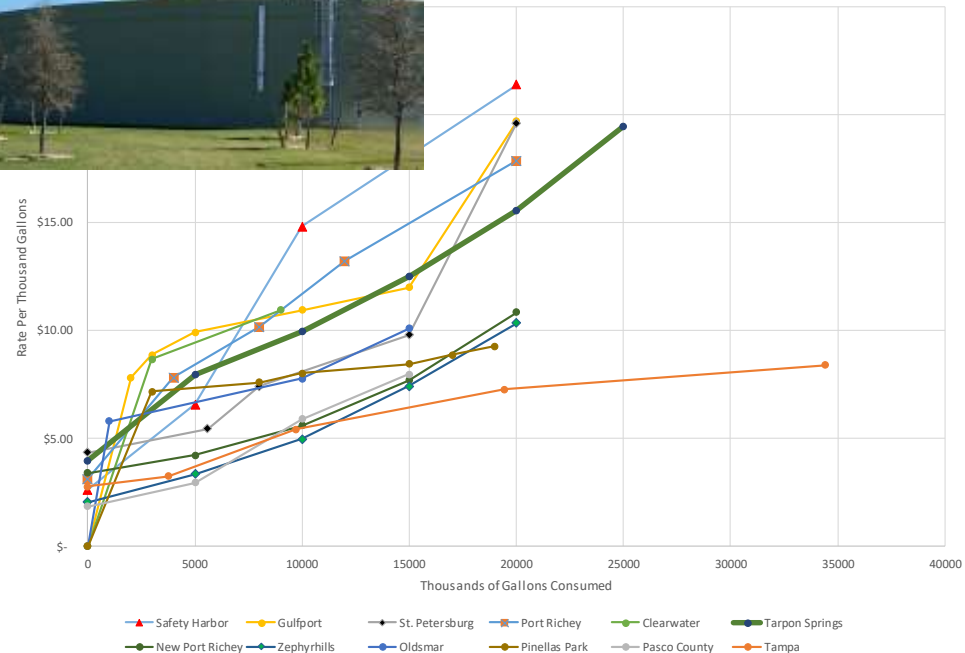


Water

- (4) FDEP Plant Operations Excellence Awards: 2004, 2007, 2016, 2018
- Reclaimed Water Utilization Rate : ~80%
- Inclining Block (Conservation) Water Rate Structure



Water Rate Block Structures, 2018





Water

- Parks Maintenance
- Reduced use of fertilizers and created fertilizer free zones (10ft. from open water).
 - Reduced the use of glyphosate.
- Using Florida Friendly Landscape principles.
- Use BMP (best management practices) for all Park's staff.
 - License/certifying staff on proper use of chemicals/fertilizer.

Florida-Friendly Landscaping Tutorials





Waste

- **Recycling Programs**
- Two Recycling Centers – Levis Ave. and Gulf Rd.
- Curbside Recycling
- Used Tire Recycling
Located at the Yard Waste Facility
- Partnering with County for Annual Household Electronics & Chemical Collection.
- Two Citywide (Spring & Fall) Cleanup Waste Collection events each year
- Funds from our recycling program are used to replace picnic tables, benches, kiosks and trash cans that are made from recyclable materials

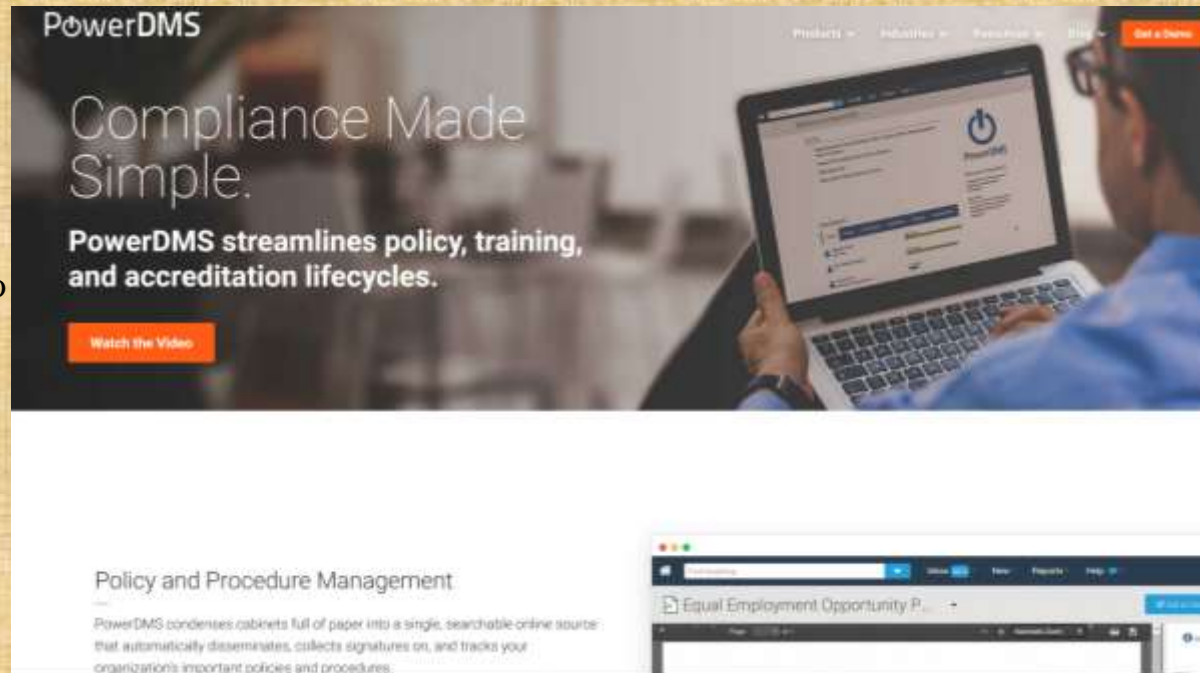




Waste

• IT Initiatives

- IT is spearheading efforts to move towards a paper free environment
 - GIS provides a platform without relying on hard copy paper maps
 - GIS also provides various featured maps and apps that allow citizens to visualize flood zones and active hurricanes.
 - Training and information materials in digital domain, Power DMS
 - Records in digital format
- Procurement and use of recycled, recyclable, and renewable materials; efficient use of energy; and participation in recycling programs for our products





Health

- Safford Avenue Fitness Park, 2013
- Completed in 2013, the North Safford Recreation Corridor is part of the Livable, Walkable Cities initiative
- Creating amenities to form a pedestrian link between the Sponge Docks and Historic Downtown Tarpon Avenue
- The Pinellas Trail is a focal point and a point of access for wider use.





Health

- **Community Garden**
- Tarpon Springs Community Gardens Inc. (TSCG) operates the garden under a license agreement, renewable in 2021.
- Located at 116 N. Ring Ave., in a lot deeded to the City from the late Jessie Burke.
- 30, 4x10 raised plots and 2 handicapped-accessible plots.
- Each year TSCG hosts an Earth Day Clean-Up through Keep Pinellas Beautiful, and enlists community volunteers
- The TSCG is active in promoting the benefits of the garden, including hosting a vendor booth at First Fridays.





Health

- **Farm Share**

- Farm Share is a non-profit group working to fight poverty and alleviate hunger.
- Farm Share distributes 55 million pounds of food annually.
- Several times a year they distribute nutritious fruits, vegetables, and other non-perishable foods to needy families in Tarpon Springs
- Distributions have taken place at locations including CAP, Shepherd Center, and St. Timothy's.





Health

- Tarpon Springs Consortium of Churches and Provider Organizations
- A group of faith-based, social services, wellness, non-profits, government, and more that works collaboratively to improve the quality of life, foster a sense of community and family, and build a resilient community for all people.
- The group meets quarterly.
- A great example of a community coming together to create sustainable health for all its residents



Land Use

- Comprehensive Plan: Coastal Planning and Conservation Element, 2017 Update
 - plan for sea level rise, restricting development in floodplains and coastal high hazard areas, and plan for hurricane evacuation
 - prevention of soil erosion and the conservation of habitats, vegetation and wildlife
 - tree preservation and mitigation that are implemented in the City's Land Development Code
 - promotion of energy conservation

ORDINANCE 2017-26

AN ORDINANCE OF THE CITY OF TARPON SPRINGS, FLORIDA, AMENDING THE COASTAL PLANNING AREA AND CONSERVATION ELEMENT OF THE COMPREHENSIVE PLAN BY REVISING THE GOALS, OBJECTIVES AND POLICIES FOR CONSISTENCY WITH CHAPTER 163.3178 FLORIDA STATUTES; PROVIDING FOR OTHER MODIFICATIONS THAT MAY ARISE FROM REVIEW OF THIS ORDINANCE; PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, on October 10, 1949 the City adopted Ordinance 89-35 adopting a comprehensive plan; and,

WHEREAS, from time to time, amendments to the Comprehensive Plan become necessary due to changing conditions or to permit greater flexibility in the development of the City; and,

WHEREAS, amendments to the Comprehensive Plan are permitted in accordance with City and State regulations governing such amendments; and,

WHEREAS, this text amendment to the Comprehensive Plan is being proposed to revise the Coastal Planning Area and Conservation Element category for consistency with Chapter 2015-69 Laws of Florida, amending Chapter 163.3178 (2) (f), F.S. and

WHEREAS, this proposed text amendment is the result of the City's Evaluation and Appraisal of the Comprehensive Plan pursuant to 163.3191; and,

WHEREAS, notice was advertised as required by City and State regulations regarding text amendments to the Comprehensive Plan; and,

WHEREAS, the Planning and Zoning Board conducted a public hearing on this item on September 18, 2017 and,



Land Use

- **Infrastructure**
- Roads are being designed and constructed to take into account future projected Sea Level Rise (SLR). This helps to extend the projected life of the roadway and its components.
- Stormwater systems are also being designed and constructed with the same projected SLR considerations as well, along with the inclusion of “check valve” devices, where practical, to account for current and future tidal flooding. Keeping the road dry will also extend its useful life.
- We are working with Pinellas County with asset location and elevation data pertaining to City assets (buildings, structures, infrastructure, et.) for future countywide planning.





Land Use

- **Walkable Communities**
- Commissioned Dan Burden, the nation's top walkability expert, in 2005 for a Walkability Report.
- More than 50 residents participated in walking workshops to offer their ideas
- The report suggests policies, programs, land use guidelines, and more to improve walkability and smart growth in the City.
- Many improvements are the result of suggestions from the report (trail and sidewalk improvements, beautification, fitness corridor, Lemon Street improvements, etc.)
- The City's Land Development Code and Smart Code:
 - Require sidewalks for all developments
 - Encourage land use forms, densities and intensities that encourage walkability, close access to a mix of uses, and a reduction in the use of automobiles





Land Use

Developing Initiatives

- The City will be updating its Land Development Code in the coming year and will review and expand on the sustainability measures, as appropriate.

- Example: Add more *Florida Friendly Landscaping* and Best Practices requirements as part of new developments (reduce turf area and associated water demand)?

- Updating Historic District Design Review Guidelines and will be including standards for sustainability addressing area such as building materials and techniques, and the sympathetic incorporation of energy-saving equipment into historic structures (e.g., solar power).

- *These updates will involve public participation and agency coordination, so the timing is right for involvement of the committee with this effort*

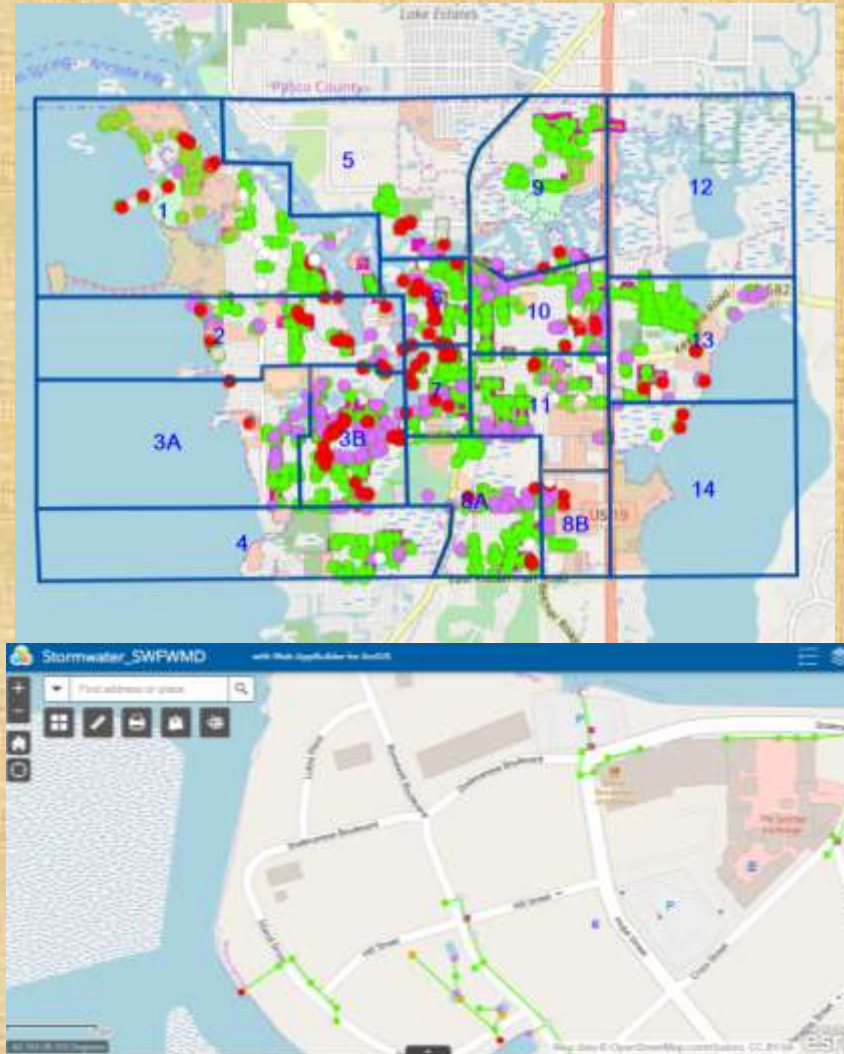


Russell Sparkman/ Fusionspark Media Inc.



Awareness

- IT: Asset Inventory and Vulnerability through GIS
- GIS provides the opportunity to efficiently share information, data, and knowledge across multiple levels of government
- GIS is actively involved in compiling and updating assets across the City. The aim is to identify, organize, locate, and update asset information for use in operations and planning. Examples include:
 - Stormwater Inventory: vital as the City adapts to future sea level rise and nuisance flooding as a result of climate change
 - Urban Forestry: spatiotemporal changes in tree coverage across the City
 - Community Redevelopment Area: bolster the walkability of the Historical District, support economic development, while promoting tourism.
 - Historic District: enforce code regulations, maintain historical qualities, regulate home values, and to address critical needs for a variety of affordable housing communities with moderately priced infill housing.





Awareness: Sustainability at the Library

- The Library has hosted several programs on sustainability topics including Florida-Friendly Landscaping (three-part series), Florida Vegetable Gardening, Edible Landscaping, and Earth Day
- Terrarium workshops and upcycled crafts have been offered for youth
- Sustainability programs will continue to be provided at the Library in 2020

TARPON SPRINGS PUBLIC LIBRARY

Florida Vegetable Gardening

Monday, March 18
6:30 PM

Register at Reference Desk

Learn why, when, where and how to prepare and plant your very first vegetable garden. Host LYNNA Anderson, Agent Florida Gardens in the State of vegetable gardening here in Florida, challenges us to do more.

Presented by UF/IFAS

Tarpon Springs Public Library
175 East Green St., Tarpon Springs, FL 34689
(813) 943-4922 • tarponlibrary.org

Celebrate Earth Day @ Your Library

Monday, April 22nd

Senior Information Center- Earth Day Series 11 AM - 2 PM
Come enjoy rock painting, refreshments, learn about recycling and more!

Kids Make & Take Recycled Craft 3 - 6 PM
Stop by Youth Services and make an Earth Day craft!

Upcycled Craft for Adults* 6:30 PM
Create a treat holder out of recycled books. *Registration required

Presented by UF/IFAS

Tarpon Springs Public Library
175 East Green St., Tarpon Springs, FL 34689
(813) 943-4922 • tarponlibrary.org

Managing a Florida-Friendly Landscape

Wednesday, June 19
6:30 PM

REGISTRATION REQUIRED
Register at the Reference Desk or call (813) 943-4922

Part 3 of 3 of the Florida-Friendly Landscaping Workshop Series

Join us with a UF/IFAS Extension Florida-Friendly Landscaping Agent for an overview of the landscape design process.

This series will provide practical, actionable information on: planning, watering, fertilizing, mulch, and mow.

Tarpon Springs Public Library
175 East Green St., Tarpon Springs, FL 34689
(813) 943-4922 • tarponlibrary.org

Edible Landscaping

Monday, August 19
at 6:30 PM

Register at Reference Desk

Join Linda Hochstetler, Extension Agent, to learn how to incorporate edible plants in your home garden and landscape.

Presented by UF/IFAS

Tarpon Springs Public Library
175 East Green St., Tarpon Springs, FL 34689
(813) 943-4922 • tarponlibrary.org

Tween/Teen Program

Upcycled Chip Bags

(ages 11 to 18)

Mon., Jan. 20, 6:30 PM

Join us and create a unique upcycled tote bag using chip bags and duct tape. Snacks provided.

Register at Reference Desk

Tarpon Springs Public Library
175 East Green St., Tarpon Springs, FL 34689
(813) 943-4922 • tarponlibrary.org

Terrarium Workshop

(ages 6 to 12)

Wed., July 31 at 3 to 4 PM

Create, decorate and learn how to care for your own tiny garden. All materials supplied. **Registration required.**

Registration begins on Mon., July 20.

Tarpon Springs Public Library
175 East Green St., Tarpon Springs, FL 34689
(813) 943-4922 • tarponlibrary.org



Sustainability at the Library

- The Library has a growing collection of sustainability materials including books, e-books, audiobooks, and DVDs
- Seeds for herbs, vegetables, and flowers are offered in the Seed Library
- Kill-a-Watt meters are available for checkout to measure energy use
- A Sustainability Resource Guide has recently been created by Library staff





Conclusions

- This presentation provides:
 - a baseline for discussion on advancing sustainability initiatives, and
 - a format that be updated for future reporting as applicable
- The City has a broad spectrum of initiatives ongoing in the major areas of **energy and air, water, waste, health, land use, and awareness**
- There remain opportunities for new sustainability initiatives or advancement of current programs



End of Presentation