

CITY OF
LARGO
Sustainability
2017 | LARGORECYCLES.COM



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sustainable for generations

Tampa Bay
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special section

NATURE CENTER →

development must balance environmental protection, economic growth and social equity. In other words, economic and social health is dependent on environmental health, and development must take into account its impact on future generations.

Since 1987, the definition of sustainability established by the WCED has informed local, national and international efforts to promote economic and social advancement in ways that protect and preserve our environment.

SOURCES: *Encyclopaedia Britannica*, United Nations

Earth's natural capital

The World Wide Fund For Nature's *Living Planet Report 2016* defines natural capital as "the available stock of renewable and nonrenewable natural resources that supports human life."

Healthy ecosystems provide us with food, fresh water, clean air, energy, medicine and recreation.

As the world's population grew from about 1.6 billion people in 1900 to 7.3 billion today, technological innovations and the use of fossil fuels helped to meet the rapidly growing need for resources.

But today, human activity is diminishing natural capital at a faster rate than it can be replenished. Activities such as urbanization, conversion of natural habitat to agriculture, unsustainable farming and fishing practices and pollution of fresh water are consuming resources at a rate that cannot be maintained.

The consequences of this natural capital depletion include increasing food and water insecurity, higher prices for many commodities and increasing competition for land and water.

SUSTAINABLE communities seek to increase their use of renewable resources and reduce their use of nonrenewable resources.

SOURCE: World Wide Fund For Nature (formerly World Wildlife Fund)

Sustainability

Sustainability - "Meeting the needs of the present without compromising the ability of future generations to meet their needs."

- Report of the World Commission on Environment and Development: *Our Common Future*, 1987

In 1983, the UN General Assembly convened the World Commission on Environment and Development (WCED) and tasked them with proposing long-term solutions for bringing about sustainable development into the 21st century.

The WCED concluded in their 1987 report *Our Common Future* that sustainable



United Nations 2030 Agenda for Sustainable Development

In 2016, world leaders adopted the New Urban Agenda, which set global standards of achievement in sustainable urban development.

- Provide basic services for all citizens
- Ensure that all citizens have access to equal opportunities and face no discrimination
- Promote measures that support cleaner cities
- Strengthen resilience in cities to reduce the risk and the impact of disasters
- Take action to address climate change by reducing their greenhouse gas emissions
- Fully respect the rights of refugees, migrants and internally displaced persons regardless of their migration status
- Improve connectivity and support innovative and green initiatives
- Promote safe, accessible and green public spaces



The City of Largo supports the Sustainable Development Goals

The City of Largo is improving the environment, becoming more sustainable and enhancing the quality of life for Largo residents and visitors. Here are some of the ways that Largo is working toward sustainability:

GREEN BUILDING: The City of Largo is committed to green building. Both the Largo Community Center and the Highland Recreation Complex were built to LEED (Leadership in Energy and Environmental Design) standards. LEED-certified buildings use less water and energy, reduce greenhouse gas emissions and save money.

NATURE AND PARKS: Largo has 500 acres of green space, 20 parks and 11 miles of trails. Green spaces improve the aesthetics of communities, offer opportunities for healthy recreation, improve the environment by filtering air pollution and stormwater runoff, and bring physical and mental health benefits to residents.

RECYCLING: Largo offers comprehensive curbside, drop-off and customized business and multifamily recycling programs. Recycling conserves resources, protects the environment and saves residents, businesses and the City money.

CONSERVATION: The City of Largo promotes conservation of resources such as water and energy through comprehensive community awareness and education initiatives. The City also seeks to preserve natural resources, such as environmentally sensitive areas and wildlife habitats.



Largo's Highland Recreation Complex is a beautiful example of what LEED can be.

Sustainable transportation - "Transport that minimizes harmful effects on the environment and the depletion of natural resources, such as walking, cycling and fuel-efficient public transport, and hence can be sustained in the long term."
- Oxford English Dictionary

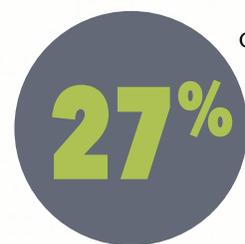
Sustainable transportation is:

- **ACCESSIBLE** - Allows people to access what they need to live healthy and fulfilled lives: jobs, markets, education, social interaction and services.
- **AFFORDABLE** - Saves individuals, organizations and governments money.
- **EFFICIENT** - Encourages energy-efficient modes of transport and responsible production and consumption.
- **ENVIRONMENTAL** - Plays a critical part in reducing greenhouse gas emissions and achieving climate change goals.
- **RESILIENT** - Promotes the development of robust infrastructure.
- **SAFE** - Improves human health by improving road safety, reducing deaths and illnesses caused by air pollution and promoting healthy transport modes, such as walking and biking.

SOURCE: United Nations Division for Sustainable Development (UN-DESA)

What YOU can do

Gases that trap heat in the atmosphere are called greenhouse gases. They act like a blanket around Earth, trapping energy in the atmosphere and causing it to warm. The buildup of greenhouse gases can change Earth's climate and result in harm to human health and the environment. By taking action to reduce greenhouse gas emissions, we can reduce the risks we will face from future climate change.



of greenhouse gases in the U.S. are caused by cars, trucks, trains, ships and other vehicles.

Reducing the use of passenger vehicles can reduce emissions. Do your part by carpooling or using public transportation. Plus, it will save you money!

SOURCE: Environmental Protection Agency



Exploring the new urban agenda

In 2016, world leaders adopted the New Urban Agenda, which set global standards of achievement in sustainable urban development. Think about the eight points that are noted on Page 2 that define this agenda. Write down what you think each bulleted item means. Include some examples of what you think would fit into each category. Write a conclusion

noting which of these eight items you think are the most important on the agenda. Next, look through the *Tampa Bay Times* and the rest of this Newspaper in Education publication to find examples for each of the eight ideas. You can use news articles, cartoons, advertisements, photos or headlines. Share the information you have learned and found with your classmates.

Florida Standards: SC.8.N.4.1; SC.8.N.4.2; SC.912.L.17.11; SC.912.L.17.13; SC.912.L.17.17; SS.7.C.2.3; SS.912.C.2.11; LAFS.612.L.1.1; LAFS.612.L.1.2; LAFS.612.L.2.3; LAFS.612.RI.1.1; LAFS.612.RI.1.2; LAFS.612.SL.1.2; LAFS.612.SL.1.3; LAFS.612.SL.2.4; LAFS.612.W.1.3; LAFS.612.W.2.4; LAFS.612.W.2.5; LAFS.612.W.3.9; LAFS.612.W.4.10

Did You Know?



Driving alone can release more than
12,000 POUNDS OF CO₂ PER YEAR



Every mile driven in a car emits
1 POUND OF CO₂ INTO THE ATMOSPHERE



Leaving your car at home just two days a week can reduce your
GREENHOUSE GAS EMISSIONS
by an average of **2 TONS** per year



A two-person household can save almost
\$10,000 A YEAR by downsizing to one car



Public transportation use in the U.S.
SAVES 4.2 BILLION GALLONS OF GASOLINE annually

SOURCES: AAA, American Public Transportation Association, Center for Climate and Energy Solutions, Environmental Protection Agency, Federal Highway Administration

MOVING Largo

The City of Largo is committed to moving toward a safer, healthier and more sustainable future. Creating more ways to get around, and making those ways easier to use, is key to Largo's future. The City is working to expand transportation options for members of the community and encourage walking, biking and other forms of transit.

Largo is dedicated to initiatives, such as a citywide urban trail, adding and expanding sidewalks and even celebrating Walk to School Day each October. With miles of bike trails, you can drive less and bike more in Largo.



Largo celebrates first all-electric vehicle

In a historic step for Largo, City Manager Henry Schubert recently welcomed the first all-electric vehicle to the City's fleet. The new vehicle, a 100 percent electric Nissan Leaf, will be used by City staff to help educate and engage residents on the importance of sustainability issues and how we can all make contributions that make lasting impacts on our community.

All-electric vehicles (EVs) run on electricity only. They are propelled by one or more electric motors powered by rechargeable battery packs.

According to the U.S. Department of Energy, EVs are more energy efficient and environmentally friendly than conventional vehicles:

- EVs convert about 59 - 62 percent of the electrical energy from the grid to power at the wheels, while conventional gasoline vehicles only convert about 17 - 21 percent of the energy stored in gasoline to power at the wheels.
- EVs emit no tailpipe pollutants (although the power plant producing the electricity may emit pollutants).

The Nissan Leaf gets the equivalent of 124 mpg in city driving and 101 mpg on the highway, with an estimated range of 107 miles on a full charge.





Changing climate and extreme weather

The consequences of our changing climate are already being felt in Florida, and scientists expect these effects to become more frequent and severe as Earth's atmosphere and oceans continue to warm.

Rising sea levels are eroding shorelines, damaging coastal habitats and development, causing higher storm surges and coastal flooding, worsening inland flooding and leading to saltwater intrusion into drinking water supplies.

Oceans are becoming warmer and more acidic, destroying coral reefs and potentially causing great damage to Florida's marine ecosystems, fisheries and tourism industry.

The warming atmosphere is expected to result in more extremely hot days, which will affect Florida's natural ecosystems as well as human health and agriculture.

Finally, rising temperatures are likely to increase the frequency and intensity of severe weather events, such as thunderstorms, tornadoes, tropical storms and hurricanes.

Resilient communities seek to improve their ability to prepare for unpredictable challenges, adapt to changing conditions and recover from disasters.

SOURCES: Environmental Protection Agency, Florida Department of Economic Opportunity

Resiliency

Resilience - "The ability of households, communities and nations to absorb and recover from shocks, whilst positively adapting and transforming their structures and means for living in the face of long-term stresses, change and uncertainty."

- *Organisation for Economic Co-operation and Development*

According to the American Planning Association, "A resilient community is one that can face an array of unpredictable challenges and disturbances with minimal long-term impacts." This includes anticipating disasters, both natural and man-made, and developing systems and procedures to lessen their effects.

Creating a resilient community includes not only disaster response planning, but also post-disaster redevelopment planning.

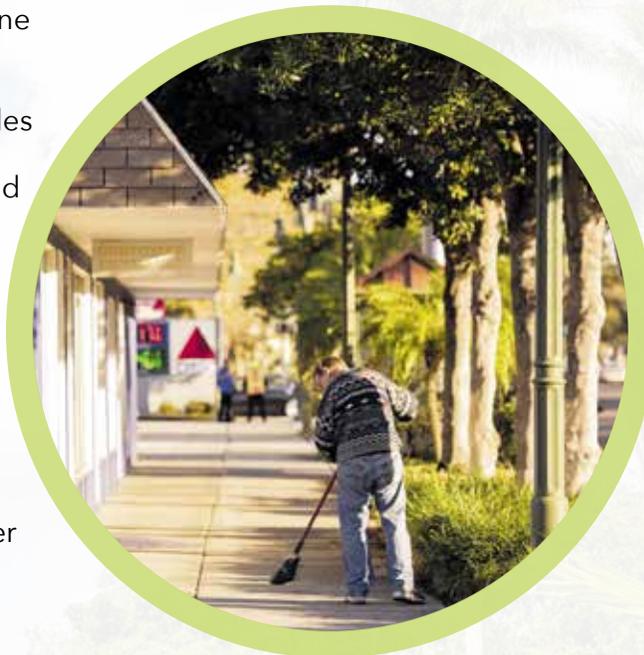
Communities seeking resiliency must ensure that key infrastructure systems such as power, food, drinking water supply, communications and wastewater processing will continue to function during and after a disaster.

Key life safety systems such as police, fire rescue, public health and emergency response services must have the capacity and resources to prepare for and respond effectively to disasters.

Critical facilities and infrastructure must be improved or built to withstand hazards.

Last, but certainly not least, communities must educate residents on risk reduction and disaster preparedness so that they also can take steps to be resilient.

SOURCES: American Planning Association Florida Chapter, U.S. Green Building Council Florida Chapter, ResilientCity.org

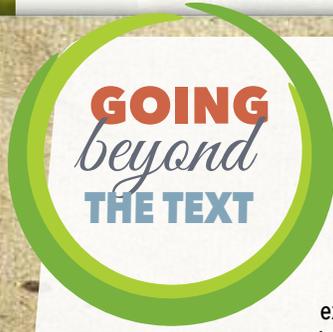


Becoming a resilient city

The City of Largo is working to integrate resiliency into all aspects of its operations. Here are some of the ways that Largo is working toward becoming a resilient city:

Critical facilities: Largo is hardening critical life safety facilities and systems. The Police/Emergency Communications Building has been renovated to be hurricane survivable. Reconstruction and renovation of the City's fire stations to be hurricane survivable are ongoing.

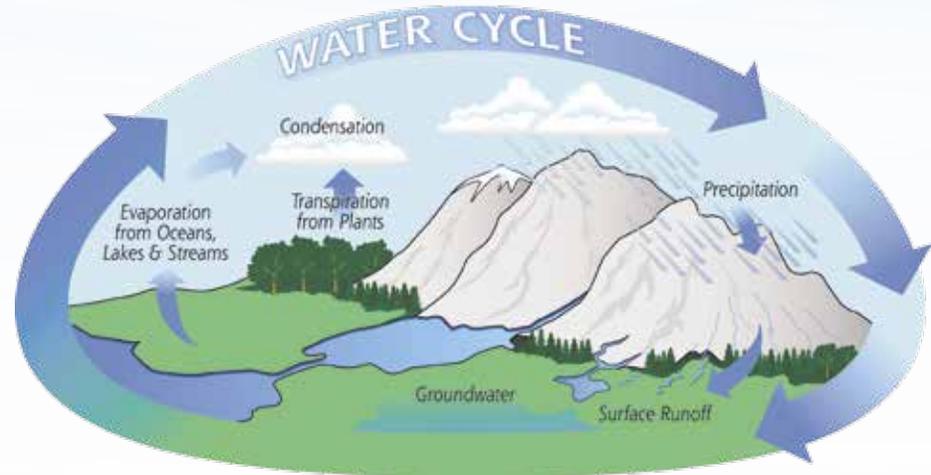
Critical infrastructure: Repairs and rehabilitation of stormwater and wastewater facilities and infrastructure to mitigate flooding is ongoing. The City also is taking steps to harden its technology and communication infrastructure by updating equipment and systems and installing redundant data network connectivity technology.



Becoming resilient and sustainable

The City of Largo is working to integrate resiliency into all aspects of its operations. What does the word resilient mean? Write down the definitions you find. There are examples of the City of Largo working to integrate resiliency into their operations on Pages 4 and 5 of this publication. Choose one of the examples on this page and free write about how it contributes to the future resiliency of the city. You can do some research about the topic to learn more and support your ideas. Using the editorials in the *Tampa Bay Times* as a model, expand your free writing into an editorial about this topic. Keep in mind that an editorial should present an argument noting if this is a successful or unsuccessful method of integrating resilience and promoting sustainability.

Florida Standards: LAFS.612.L.1.1; LAFS.612.L.1.2; LAFS.612.L.2.3; LAFS.612.RI.1.1; LAFS.612.RI.1.2; LAFS.612.SL.1.2; LAFS.612.SL.1.3; LAFS.612.SL.2.4; LAFS.612.W.1.1; LAFS.612.W.1.3; LAFS.612.W.2.4; LAFS.612.W.2.5; LAFS.612.W.3.7; LAFS.612.W.3.8; LAFS.612.W.3.9; LAFS.612.W.4.10; SC.8.N.4.1; SC.8.N.4.2; SC.912.E.6.6; SC.912.L.17.11; SS.7.C.2.3; SS.912.C.2.10; SS.912.C.2.11



The water, or hydrologic, cycle describes the movement of water on, above and below the surface of Earth.

THE WATER CYCLE

EVAPORATION & TRANSPIRATION

CONDENSATION & PRECIPITATION

WASTEWATER & THE WATER CYCLE

Evaporation is a process in which water stored in surface bodies of water such as lakes, rivers or the ocean is converted into water vapor by the heat of the sun.

Plants absorb water from the soil through their roots. They then release this water back into the atmosphere through their leaves and stems in a process called transpiration.

70%

of all rainfall returns to the atmosphere in the form of evaporation and transpiration.

The water vapor created through evaporation and transpiration rises into the atmosphere, where it comes into contact with cooler air, condenses back into tiny water droplets and falls again to the surface as precipitation such as rain or snow.

Precipitation falling on land collects in surface bodies of water, soil and porous layers of rock, and much of it flows back into the oceans, where it will once more evaporate.

Rainfall that is not absorbed directly into the soil or through the roots and leaves of plants, or accumulated into existing bodies of water such as lakes or rivers, is called surface, or stormwater, runoff.

SOURCES: Florida Department of Environmental Protection, NASA, U.S. Geological Survey

Wastewater is water that has been used in your home, including water from sinks, showers, bathtubs, toilets, washing machines and dishwashers. Businesses and industries that use water in their operations, such as agriculture, manufacturing and mining, also produce wastewater. Wastewater includes pollutants such as human and animal waste, food scraps, oils, soaps and chemicals.

Wastewater also includes stormwater runoff. Although the rain that runs down the street during a storm may look clean, it isn't. Harmful substances that wash off roads and lawns include oils, pesticides and fertilizers.

If wastewater is not properly treated, then the environment and human health can be harmed. Impacts can include harm to fish and wildlife, beach closures and contamination of drinking water.

With proper treatment, wastewater can be reclaimed or converted into useful products. Recycling this water protects the public and the environment. Reclaimed wastewater can be used for irrigation and by businesses. The use of reclaimed wastewater conserves drinking water and protects our environment.

SOURCES: Florida Department of Environmental Protection, U.S. Geological Survey

TAKE A TOUR Largo Wastewater Reclamation Facility

Largo's Wastewater Reclamation Facility (WWRF) operates 24 hours a day, seven days a week, 365 days a year. It can process up to 18 million gallons of water each day.

Schedule a tour to see how this amazing facility works by calling 727-518-3080 or emailing environmental_services@largo.com.





City of Largo RECLAIMED WATER

Using reclaimed water at your home or business can not only reduce your utility bill, but also makes a big impact on our environment!

The City of Largo and the Southwest Florida Water Management District (SWFWMD) have teamed up to fund a system to distribute reclaimed water to households and businesses for the purpose of watering lawns and commercial properties. Largo residents and businesses who use reclaimed water save money and reduce their ecological footprint.

Keep Largo sustainable for generations by seeing if you can use reclaimed water. To find out if reclaimed water is available in your area, call 727-518-3076 or email environmentalservices@largo.com today.

What you can do



Scoop the poop

Twenty-eight tons of pet waste is produced in Pinellas County every day! When this waste is left on the ground, rainwater can carry it into our storm drains and into the creeks and streams we live, swim and play in - and even into Tampa Bay. So please, scoop the poop.



Fight F.O.G.

Fats, oils and grease that are poured down sinks or drains can build up and cause sewers to back up into streets and homes. Fight F.O.G. by putting products such as these in the trash and not down the drain: butter, oil, shortening, food scraps, gravy, mayonnaise, dressings, sauces and sour cream.



Fertilize appropriately

Rainwater picks up the fertilizers that we use on our lawns and carries these chemicals into our waters. These include nitrogen and phosphorus, which pollute our waterways, cause harmful algae blooms and can even kill wildlife. In Pinellas County, fertilizers containing nitrogen or phosphorus are banned June 1 - Sept. 30. Protect our water ways and community by using Florida-friendly yard products and by fertilizing appropriately.



A toilet is not a trash can

A small amount of household waste flushed down the toilet can clog pipes, cause nasty messes in your home and result in expensive sewer backups in our city. Never flush these items down the toilet: tissues, diapers, cotton swabs, band aids, kitty litter, sanitary wipes or feminine hygiene items. If you've got a backed-up toilet, call Environmental Services at 727-507-4460.



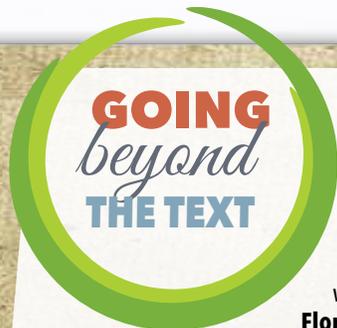
Only rain down the storm drain

Grass clippings, leaves and yard debris that are not disposed of properly wash into storm drains, polluting our water, clogging sewers and causing flooding. Keep our waterways healthy and prevent flooding in your neighborhood by bagging or bundling yard waste and disposing of it in the trash.



Drain your pool properly

Drain your pool properly - never drain your pool or spa into storm drains. The chemicals used to keep your pool safe for swimming go straight into our waterways when we dump our pool water into storm drains, harming fish and wildlife. Instead, stop adding chemicals until the chlorine level is undetectable (at least one week), then drain your pool slowly through your yard to filter out any remaining harmful chemicals.



Learning about reclaimed water

According to the City of Largo, using reclaimed water at your home or business can not only reduce your utility bill, but also makes a big impact on our environment. What exactly is reclaimed water, though, and where can you get it? Do some research about this topic. Be sure to check out the City of Largo website, Largo.com/ReclaimedWater, and the Southwest Florida Water Management website, swfwmd.state.fl.us/conservation/reclaimed. Using *Tampa Bay Times* news articles as models, write a news article about reclaimed water. Taking on the role of a good journalist, make sure your article answers the who, what, why, when and how questions.

Florida Standards: LAFS.612.L.1.1; LAFS.612.L.1.2; LAFS.612.L.2.3; LAFS.612.RI.1.1; LAFS.612.RI.1.2; LAFS.612.SL.1.2; LAFS.612.SL.1.3; LAFS.612.SL.2.4; LAFS.612.W.1.3; LAFS.612.W.2.4; LAFS.612.W.2.5; LAFS.612.W.3.7; LAFS.612.W.3.8; LAFS.612.W.3.9; LAFS.612.W.4.10; SC.8.N.4.1; SC.8.N.4.2; SC.912.E.7.8; SC.912.L.17.11; SC.912.L.17.17; SS.912.C.2.10; SS.912.C.2.11.

The **City of Largo** offers curbside recycling free of charge to all residents with residential garbage service. Mixed recycling makes recycling easier by eliminating the need for sorting and separating at the curb.

What can you recycle?

These cannot go in your blue bin:

- › Plastic bags or plastic wrap
- › Plastic six-pack rings
- › Styrofoam packaging or take-out containers
- › Yard waste (grass clippings, leaves, branches)
- › Construction materials
- › Ziploc bags
- › Chip bags
- › Hazardous materials, chemicals, oils or paints
- › Electronics
- › Needles or syringes
- › Food waste or food-soiled containers
- › Mirrors, window panes, ceramics or dishware



MIXED PAPER

If you can tear it, you can recycle it! There is no need to remove staples, labels or address windows.



FLATTENED CARDBOARD

Clean, dry, grease-free cardboard is recyclable. Cardboard must be flattened and placed inside your blue cart.



PLASTIC BOTTLES AND CONTAINERS

Any plastic container with a #1 through #7 recycling symbol, such as margarine tubs, plastic cups and yogurt containers, can be recycled. There is no need to remove caps.



METAL CANS AND CONTAINERS

Aluminum, tin and steel cans, empty aerosol cans and aluminum containers and trays are recyclable.

GLASS BOTTLES AND JARS

All unbroken clear, green and brown glass bottles and jars are recyclable.

MILK AND JUICE CARTONS

Paper cartons of any size are recyclable.



Keep the stream clean

To avoid contaminating the recycling stream, always empty and rinse bottles, cans and other containers before placing them in your blue cart or dropping them off at a collection center.

Spotlight: Palm Hill recycles

Since its launch in October 2011, the Largo retirement community of Palm Hill's recycling program has saved the community an estimated **\$70,000**.

The community recycles an average of 3 tons of material per week, saving the community association \$6,000 per year in trash disposal costs - more than \$30,000 in total since the program's start.

A team of volunteers recovers and sells items that are not recyclable through the City of Largo's recycling program, raising more than \$41,000 in revenue for the community since 2011.

The community also collects unwanted televisions for safe disposal. Since 2011, they have disposed of more than 1,900 television sets, keeping toxic substances such as lead, mercury, beryllium and cadmium out of the waste stream.

In 2013, Homeowners Of Palm Hill was awarded a Florida Communities Of Excellence Trendsetter Award for their recycling program. The Trendsetter Awards recognize innovation in any area where a community has created a service or solution that others may someday follow.

As Homeowners Of Palm Hill Chairman Rick Gregorio notes, "No matter how large or small a community, there is value in recycling - and it is the right thing to do."



NO
plastic bags
Never bag your recyclables before putting them in your blue recycling cart or dropping them off at a collection center. Plastic bags tangle in and damage recycling equipment.

In 2016, Palm Hill residents in Largo:
RECYCLED MORE THAN 257 TONS OF MATERIAL



Saved more than **\$20,000** in trash removal costs
Generated **\$7,000** in revenue

Since 2011, Palm Hill has:
RECYCLED 900 TONS OF MATERIAL



Generated **\$70,000** in savings

C.O.R.E.

Cooking oil poured down your sink doesn't just go away - it turns solid inside your drain and can cause nasty, costly overflows. Dispose of your cooking oils and grease in the trash, or recycle them at the Starkey Road Recycling Center, 1551 Starkey Road, Largo, FL 33771.

Yard debris

Bundled or bagged yard waste such as leaves, tree trimmings and grass clippings will be picked up at your curb at no cost to you. This helps keep debris out of our storm drains and keeps our waters clean. Yard waste cannot be recycled in your blue cart or at the drop-off centers.

FREE mulch

City of Largo residents can help the environment and their wallets by picking up free recycled mulch at the Starkey Road Recycling Center, 1551 Starkey Road, Largo, FL 33771. The mulch has been composted in accordance with the University of Florida's standard for yard waste composting.

Household Electronics and Chemical Collection Center (HEC₃)

2855 109th Ave. N, St. Petersburg, FL 33716
(off 28th St. N on the south side of the Waste-to-Energy facility)

Pinellas County residents may bring unwanted electronics and chemicals to the Pinellas County Solid Waste Household Electronics and Chemical Collection Center (HEC3) for recycling at no charge. Items accepted at HEC3 include:

ELECTRONICS

- Cellphones
- Computer towers, CPUs and hard/CD/DVD drives
- Laptops and tablet computers
- Monitors and televisions
- Rechargeable batteries



CHEMICALS

- Automotive fluids and motor oil
- Batteries (household or vehicle)
- Rechargeable batteries (button or vehicle)
- Smoke detectors
- Fluorescent bulbs and other mercury-containing devices
- Fuels (gasoline, kerosene)
- Paint, paint remover, paint thinner and solvents
- Fungicides, herbicides, insecticides, pesticides and fertilizers
- Pool chemicals
- Cleaners
- Cooking oils and fats



Visit pinellascounty.org/solidwaste/swapshop or call 727-464-7500 for more information.

Recycling drop-off centers

The City of Largo operates two free 24-hour Recycling Collection Centers for residents who do not have residential garbage service and curbside recycling at home. The drop-off centers accept all items that can be recycled in a blue cart.

➔ **Starkey Road Recycling Center**, 1551 Starkey Road, Largo, FL 33771
This site also recycles used cooking oil.

➔ **Tri-City Plaza Recycling Center**, 16080 U.S. 19 N, Clearwater, FL 33760 (behind the shopping center)

GOING
beyond
THE TEXT

Conservation and recycling are great methods for increasing sustainability. Upcycling, or creative reuse, is another method of taking something that would have been thrown away and finding a new use or purpose for it. There are many different ways to repurpose and reuse items. Repurposing and reusing items not only keeps these items out of the waste stream, but it also can benefit the economy. How creative can you be? Look in the *Tampa Bay Times* for items that cannot be recycled. How can you repurpose or reuse them? Make a chart showing your ideas. Add a column on the chart to show the economic impact. Share your information with your class. Take the activity a step further and create your own upcycling project. Send photos of your projects to ordernie@tampabay.com.

Florida Standards: LAFS.612.L.1.1; LAFS.612.L.1.2; LAFS.612.L.2.3; LAFS.612.RI.1.1; LAFS.612.RI.1.2; LAFS.612.SL.1.2; LAFS.612.SL.1.3; LAFS.612.SL.2.4; LAFS.612.W.1.3; LAFS.612.W.2.4; LAFS.612.W.2.5; LAFS.612.W.3.9; LAFS.612.W.4.10; SC.912.L.17.17; SS.7.C.2.3

Renewable and nonrenewable energy

NONRENEWABLE energy sources are sources that do not form or replenish in a short period of time. The supply of nonrenewable energy sources is limited. As we use them up, they become more and more expensive and environmentally damaging to retrieve. And, because we are using them up far more quickly than they are replenished, they will eventually run out.

The four major nonrenewable energy sources are oil, natural gas, coal and uranium ore.

90% of the energy consumed in the United States in 2016 came from nonrenewable energy sources.

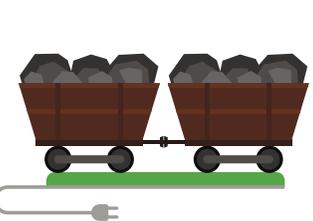
RENEWABLE energy sources replenish naturally in a short period of time. Because they are constantly replenished, they will never run out. Renewable energy is cleaner and uses less of our natural resources than nonrenewable energy.

Renewable energy sources include solar, wind, geothermal, biomass, hydropower and ocean energy.

10% of the energy consumed in the United States in 2016 came from renewable energy sources.

SOURCES: U.S. Department of Energy National Renewable Energy Laboratory, U.S. Department of Energy Office of Energy Efficiency & Renewable Energy, U.S. Energy Information Administration

Nonrenewable energy



Calculate your carbon footprint

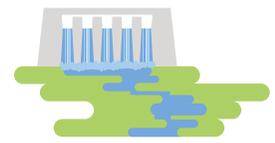
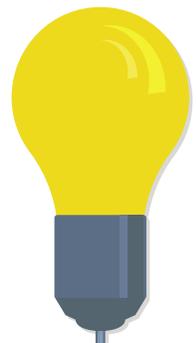
epa.gov/carbon-footprint-calculator



Daily activities such as using electricity, driving a car and disposing of waste cause greenhouse gas emissions. Together, these emissions are known as a carbon footprint.

This calculator from the Environmental Protection Agency estimates your footprint in three areas - home energy, transportation and waste - and allows you to see how much you could reduce your footprint and save money by taking some simple steps.

Renewable energy



Hydropower captures the energy of flowing water.



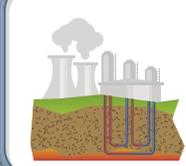
Ocean energy captures energy from ocean tides, waves and currents.

Wind energy can be captured with wind turbines.



Biomass converts organic materials (wood, agricultural crops or yard and food waste) to electricity by burning the materials.

Solar energy can be used directly to heat and light buildings, to heat water and to generate electricity.



Geothermal energy comes from heat that is continuously produced inside the earth. It can be used directly as steam or hot water to heat buildings or to generate electricity.



GOING beyond THE TEXT

Exploring renewable energy

Energy conservation is any behavior that results in the use of less energy. In March 2017, the U.S. Energy Information Administration reported that the renewable energies of wind and solar power generated more than 10 percent of electricity for the first time ever. Check out this video on the Tampa Bay Times Newspaper in Education website: nieonline.com/tbtimes/videooftheweek.cfm?id=367. In a formal blog post, 350-450 words, respond to each of the class discussion questions. Look for articles in the *Tampa Bay Times* or other reliable news sources to help support your ideas.

Florida Standards: LAFS.612.L.1.1; LAFS.612.L.1.2; LAFS.612.L.2.3; LAFS.612.RI.1.1; LAFS.612.RI.1.2; LAFS.612.SL.1.2; LAFS.612.SL.1.3; LAFS.612.SL.2.4; LAFS.612.W.1.1; LAFS.612.W.1.3; LAFS.612.W.2.4; LAFS.612.W.2.5; LAFS.612.W.3.7; LAFS.612.W.3.8; LAFS.612.W.3.9; LAFS.612.W.4.10; SC.8.N.4.1; SC.8.N.4.2; SC.912.E.6.6; SC.912.L.17.11; SC.912.L.17.13; SS.912.C.2.11

How can you save energy - and money?



Every day, we use energy for transportation, cooking, heating and cooling, manufacturing, lighting, entertainment and many other uses. Our energy choices affect our lives, the environment and our wallets.

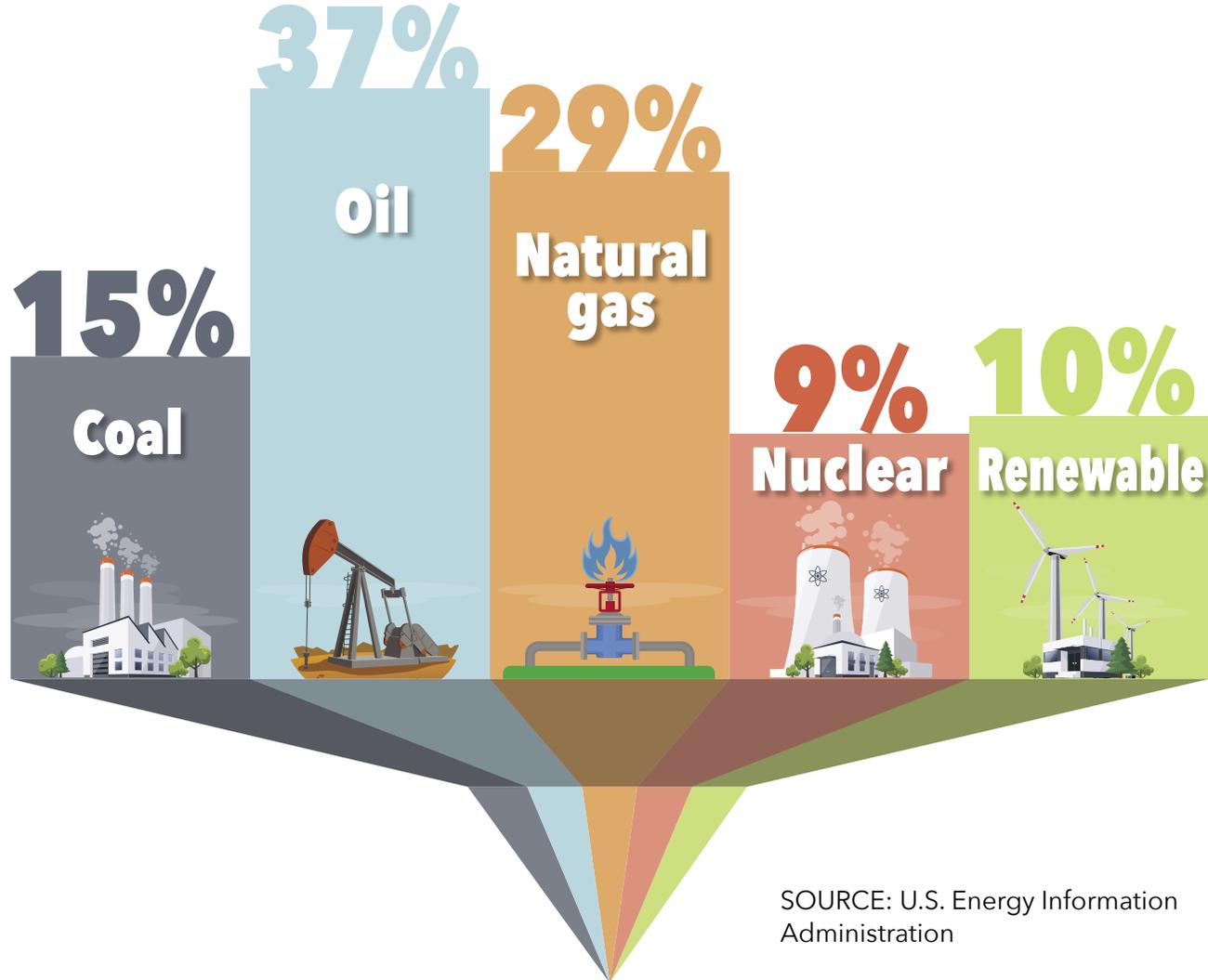
How technology can help:

- › Replace incandescent bulbs with CFL or LED bulbs.
- › Purchase appliances with the Energy Star label.
- › Replace showerheads and toilets with low-flow models.
- › Replace thermostats with programmable models.
- › Reduce the temperature setting on your water heater.
- › Collect rainwater in barrels to water your lawn.

How you can help:

- › Turn the lights off when leaving a room.
- › Power down or unplug chargers, televisions, computers, video game consoles, cable boxes and digital video recorders after use.
- › Bring reusable bags to the grocery store.
- › Use reusable water bottles instead of buying disposable ones.
- › Turn off the water while brushing teeth.
- › Wash clothes in cold water instead of hot, and air-dry clothing when possible.
- › Stop heated or cooled air from escaping under doors by attaching sweeps or shoes.

› **Recycle!**



SOURCE: U.S. Energy Information Administration

U.S. Energy Consumption by fuel/energy source, 2016

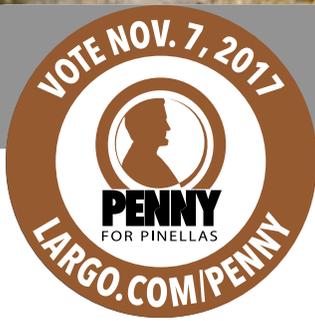
How much are my appliances costing me?

To figure out how much your appliances and devices cost to run, follow these steps:

- 1 Estimate the number of hours per day an appliance runs or a device is in use.
- 2 Find the wattage of the product. There are three ways to find the wattage:
 - a. The wattage of most appliances is marked on the bottom or back of the product and/or listed in the owner's manual.
 - b. If the wattage is not listed, but the amperes are, multiply the amperes by the voltage used by the product (most U.S. appliances use 120 volts, but some larger appliances such as clothes dryers or electric cooktops use 240 volts).
 - c. Use online sources to find estimated wattages for the product. The Home Energy Saver is one good source: bit.ly/1yWC54a.
- 3 Find the daily energy consumption using the following formula: $(\text{wattage} \times \text{hours used per day}) \div 1,000 = \text{daily kilowatt-hour (kWh) consumption}$.
- 4 Find the annual energy consumption using the following formula: $\text{daily kWh consumption} \times \text{number of days used per year} = \text{annual energy consumption}$.
- 5 Find the annual cost to run the appliance using the following formula: $\text{annual energy consumption} \times \text{utility rate per kWh} = \text{annual cost to run appliance}$

SOURCE: U.S. Department of Energy Office of Energy Efficiency & Renewable Energy





PENNY FOR PINELLAS

Largo.com/penny
pinellascounty.org/penny

What is the Penny for Pinellas?

The Penny for Pinellas is a 1 percent sales tax paid by everyone who spends money in Pinellas County. The Penny only applies to the first \$5,000 of each purchase. One-third of Penny revenue is contributed by tourists and snowbirds.

The Penny is used to fund long-term capital infrastructure projects in Pinellas County. It is the County's primary funding source for governmental capital projects, covering more than 70 percent of their costs. The Penny also helps to attract funds from other sources, such as state and federal agencies.

Since 1990, the Penny for Pinellas has funded thousands of county and city projects without relying on property taxes. It has supported investments in areas such as roads, bridges, sidewalks and trails; water quality and flood prevention; public safety agencies and emergency operations; and recreation, green space and habitat preservation.

One hundred percent of Penny funds stays in Pinellas County. Penny revenue is divided between the County and its 24 cities based on population.

Penny-wise facts

- 1 percent sales tax paid by everyone who spends money in Pinellas County
- Not a new tax: the Penny has been in effect since 1990
- 100 percent of Penny funds stays in Pinellas County
- Funds long-term capital infrastructure projects and public safety vehicles
- One-third of Penny revenue is contributed by tourists and

seasonal visitors What has the Penny funded in the City of Largo?

Since 1990, the Penny for Pinellas has funded Largo projects including:

- The Largo Public Library
- The Largo Community Center
- The Highland Recreation Complex
- Downtown regional stormwater pond and Bayhead Action Park
- Roadway and sidewalk reconstruction
- Stormwater drainage infrastructure projects to address flooding and water quality
- Police and Fire Rescue vehicle replacements
- Reconstruction of Fire Station 43
- Renovation of three additional fire stations
- Disaster mitigation and resiliency projects including hardening of the Police/Emergency Communications Building

What will the 2020-2030 Penny fund in Largo?

If the 2020-2030 Penny is approved, the City of Largo is projected to receive approximately \$100 million in revenue for City projects such as:

- Roadway improvement program, investing \$3.5 million annually in paving and reconstruction
- Continued Police and Fire Rescue vehicle replacements
- Reconstruction of three City fire stations
- Regional stormwater infrastructure projects



Vote on Nov. 7, 2017

On Nov. 7, 2017, Pinellas County residents will decide on the renewal of the Penny for Pinellas 1 percent sales tax for 2020-2030.

Vote to make your voice heard!

Learn more

For more information about the Penny for Pinellas in Largo, visit Largo.com/penny, call 727-587-6727, ext. 7600 or email omb@largo.com.



Hosting a community event?

Would you like someone to talk to your group about the Penny for Pinellas? Request a speaker by visiting Largo.com/penny and clicking on "Request a speaker."

LARGO'S GREEN SPACES



TREE CITY USA®

Largo's urban forest

Urban forests are the trees outside our front doors. These public and privately owned trees provide critical benefits to people and wildlife.

The City of Largo is proud to be a Sterling Tree City USA and serves as a leader and innovator in community forestry.

The environmental, social and economic benefits of trees include:

- Improve water quality by intercepting rainfall and reducing stormwater runoff.
- Provide shade, reducing the energy needed to cool and heat buildings and cars.
- Sequester, or "lock up," the greenhouse gas carbon dioxide in their tissue for their lifetime.
- Roots bind the soil together, reducing erosion by up to 95 percent.
- Remove pollutants such as carbon monoxide, nitrogen dioxide, ozone and sulfur dioxide from the atmosphere.
- Provide buffers for noise by reflecting and absorbing sound energy.
- Provide wildlife habitat.
- Produce oxygen. In one year, one tree can release enough oxygen for four people.
- Increase residential property and commercial rental values.
- Make streets safer and more walkable.

SOURCES: Largo Urban Forest Master Plan, Penn State Cooperative Extension Resources, University of Florida Cooperative Extension Program, U.S. Forest Service

Become a Neighborwoods Tree Steward

Homeowners, beautify your neighborhood by becoming a Tree Steward! Tree Stewards receive **two free trees** delivered to your home on the weekend and volunteer assistance for planting.

Available tree species include live oak, red maple, Southern magnolia, sycamore, slash pine and bald cypress.

To get started, call 727-586-7415 or email pchristm@largo.com.



the City of **LARGO** has



11 miles of trails



4-mile Green Trail

20
PARKS

50,000 trees
500 acres of green space

Every year, Largo's urban forest:



Removes almost

270,000 POUNDS OF AIR POLLUTANTS



Intercepts

1.5 BILLION GALLONS OF STORMWATER



Sequesters

25,000 TONS OF CARBON DIOXIDE

Trees are a smart investment

For every \$1 Largo spends on public trees



the community receives a \$3 return in benefits.



LARGO nature parks

LargoNature.com

George C. McGough Nature Park
11901 146th St. N, Largo, FL 33774

John R. Bonner Nature Park
14444 143rd St., Largo, FL 33774

Largo Central Park Nature Preserve
150 Highland Ave. SE, Largo, FL 33770



GOING beyond THE TEXT

Environmental news

Think about the importance of the environment as it relates to the future of mankind and the quality of life. Deforestation is a hot topic when it comes to the environment. Whether we are talking about urban or traditional forests, trees and plants play an important role in the environment. With your class, make a list of ways these concepts are interconnected. Next, in a small group, look for articles in the *Tampa Bay Times* about the environment, such as preservation, conservation, recycling, pollution or any other topics you discussed with your class. What is the main idea of the article you selected? What point is being made? Is the environmental issue important to a large group of people or a select group? Is this a new idea being presented? Is there an action that needs to be taken? Write down all of the main points of the article. Now go back and read the article more carefully and write down what questions you may have. What information is missing from the article? What more needs to be known? Share what you have learned with your class.

Florida Standards: LAFS.612.L.1.1; LAFS.612.L.1.2; LAFS.612.L.2.3; LAFS.612.RI.1.1; LAFS.612.RI.1.2; LAFS.612.SL.1.2; LAFS.612.SL.1.3; LAFS.612.SL.2.4; LAFS.612.W.1.3; LAFS.612.W.2.4; LAFS.612.W.2.5; LAFS.612.W.3.9; LAFS.612.W.4.10; SC.7.E.6.6; SC.8.N.4.2; SC.912.L.17.13; SC.912.L.17.17; SS.7.C.2.3; SS.912.C.2.10;



Spotlight: Largo Citizens' Academy

Longtime Largo resident Greg Allen recently participated in the City of Largo's Citizens' Academy, a program designed to educate residents about the inner workings of their City government.

Tell me about the City of Largo's Citizens' Academy.

Largo's Citizens' Academy is a remarkable program that allows residents to understand the workings of the city. Each department is host to an evening during



Greg Allen

which they share how they make Largo a better community. Visiting departments such as Solid Waste, Recycling and Community Development makes one recognize what a remarkable team is behind the scenes to serve the citizens of Largo every day.

What do you see as the biggest challenge facing Largo as it strives to be a green, sustainable and resilient community?

The City of Largo has done a remarkable job of preserving green space. I have been to every one of the City parks. I feel the biggest challenge facing the City presently is how to make downtown a more friendly and inviting

environment. The problem is that we have one of Pinellas County's most heavily traveled roads (East Bay Drive) going right through the middle of Largo.

What should people know about recycling in the City of Largo?

In Largo, you see recycling containers everywhere. Recycling has become a habit for many in the community. For example, I see youth sports players recycling their bottles or cans all the time. By recycling, the citizens of Largo help to preserve our environment and save the City money at the same time.

Want to be part of Citizen's Academy?

Contact Largo's community outreach coordinator, Brenda Clark, to learn more about this great program. Brenda works to support and guide citizens and



Brenda Clark
community outreach coordinator

Email connect@largo.com or call 727-587-6740, ext. 7630. Se habla español.

neighborhood organizations in their efforts to make and keep their neighborhoods a great place to live, work and play.

Have ideas for Largo neighborhoods or want someone from the city to speak at your organization?

Meet Largo's Sustainability Team for Environmental Protection (STEP)

This team works to help teach each other how to be sustainable employees and individuals in Largo. From contests to presentations, this team keeps us engaged and excited about recycling, waste reduction, energy conservation and more!

NEWS

Get the latest information on the City of Largo's recycling services, programs and events delivered straight to your inbox with the Largo Recycles eNewsletter! **Visit largo.com/enews to sign up.**



Largo Recycles Green Team

Be a part of recycling and sustainability outreach in Largo as a Green Team Volunteer! Green Team Volunteers act as ambassadors for recycling in their neighborhoods, help recruit business partners to recycle and help educate schools and community groups at special events.

Visit largo.com/volunteer to apply today.

Other volunteer opportunities at Largo.com/Volunteer

The City of Largo offers lots of ways for residents to get involved. Visit largo.com/volunteer to learn more and apply.

- Friends of Largo Nature Parks - Hosts events and programs designed to engage the public in the natural world around them
- Largo Library Supporters and Library Teen Volunteers - Library volunteers assist with and advise on library operations and programs.
- Recreation, Parks and Arts - Offers more than 120 volunteer opportunities in Largo's athletics, aquatics, parks, performing arts and recreation programs.
- Volunteers In Policing (VIP) - VIPs assist and support the Largo Police Department.

GOING beyond THE TEXT

There are a multitude of eco-friendly products that consumers can purchase, such as recycled napkins, green cleaning detergent, compact fluorescent light bulbs, biodegradable garbage bags and recycled printer paper. The publication you are reading right now is printed on paper that is composed of recycled paper. So what exactly does "eco-friendly" mean and why is an item marked as such considered good for the environment? Discuss these issues with your

class. Do some research in your school media center. Look through the *Tampa Bay Times* to find items that are and are not considered eco-friendly. Make a list to share with your class. When you are finished with your list, write a fully developed narrative paragraph explaining what you have learned and if what you have learned will change any of your future behaviors.

Florida Standards: LAFS.612.L.1.1; LAFS.612.L.1.2; LAFS.612.L.2.3; LAFS.612.RI.1.1; LAFS.612.RI.1.2; LAFS.612.SL.1.2; LAFS.612.SL.1.3; LAFS.612.SL.2.4; LAFS.612.W.1.3; LAFS.612.W.2.4; LAFS.612.W.2.5; LAFS.612.W.3.9; LAFS.612.W.4.10; SC.8.N.4.2; SC.912.L.17.17;

The City of Largo's Strategic Plan is a blueprint for City operations and sets the goals and standards for our community that residents, businesses and employees are most proud of. This plan prioritizes our resources as an organization and facilitates daily management decisions. For more information about the Strategic Plan, visit Largo.com/StrategicPlan.




2018 EVENTS

visit LargoRecycles.com



Freecycle 'Stuff the Bag'
This event helps those in need and promotes reuse in our community. Residents receive a free bag upon entry to shop donated items for free.



ShredFest
Free document shredding for City of Largo residents. Bring up to five boxes of paper to be shredded and recycled on site!



Chemical and electronics collection
Drop off used motor oil, cleaning supplies, light bulbs and paint, as well as electronics such as TVs and batteries. This free service helps us recycle and keep Largo clean, green and safe.



Touch-a-Truck
This free family event features fire trucks, motorcycles, buses, dump trucks and more for kids to climb, honk and play on.

Connect with us largo.com/social

Facebook
facebook.com/CityofLargo
facebook.com/LargoArts
facebook.com/LargoFireRescue
facebook.com/LargoPoliceDepartment
facebook.com/LargoPublicLibrary
facebook.com/LargoRecycles
facebook.com/PlayLargo

Twitter
twitter.com/LargoFireRescue
twitter.com/LargoJobs
twitter.com/LPLNews
twitter.com/LargoNews

Instagram
instagram.com/LargoRec

YouTube
youtube.com/user/LargoTV1



