CITY OF FREDERICK 2018 SUSTAINABILITY ANNUAL REPORT HIGHLIGHTS
Balancing the economic, social, and ecological needs of the City’s residents and businesses for today and future generations.

ENERGY

Despite a 7% increase in population since 2013 and increased facilities to accommodate new residents, electricity use in City facilities has only increased by 5%. In 2013, about 44% of the City’s electricity use was for water facilities. In 2018, about 46.5% was used for water facilities. Though the cogeneration system at the wastewater treatment plant lowers electricity use from the approach, (EBSH) upgrades have increased the electricity demand at the plant.

Streetlights continue to use about 25% of the electricity usage in 2013 and 2018. Many street lights have been upgraded to LED, which can account for a stagnant electricity use despite the increase in street lighting.

Occupied buildings accounted for 18% of the use in 2013 and 2018. Where practical, HVAC and lighting will continue to be upgraded to the latest technology to reduce energy use.

Unconditioned spaces, such as park pavilions and fields, account for about 13% of the energy usage in 2013. Energy usage of these spaces has fallen to about 10.5% of the total because of LED lighting.

The most significant accomplishment for 2018 was to purchase renewable energy credits (RECs) for 100% of the electricity used at City facilities beginning in December 2020.

WASTE & RECYCLING

The City relies on Frederick County to provide recycling services and landfill services. The County’s landfill is at capacity and serves as a transfer station to haul waste to a facility in Pennsylvania. The City is the County’s largest waste customer, producing about 27% of the overall waste that is trucked to the transfer station.

Recycling throughout the country has seen a major shift because overseas buyers will no longer purchase contaminated recycling. Containers with food or other residue, trash in the recycling bins, and non-recyclable items can quickly spoil an entire load of recyclables. The County is working on a new contract and is expected to announce changes in mid-2019.

The City has offered compost bins to residents at a reduced cost of $20 for the past two years, however, not many residents have taken advantage of the program. Compost is the heaviest part of the waste stream and could be diverted to reduce about 30% of all waste going to the landfill.

In light of changes in recycling and lack of landfill space, the City’s residents and businesses have an opportunity to make decisions about how waste is diverted and to reduce the amount of waste produced.

CANOPY & FOOD

Volunteers and staff planted 662 trees in public spaces around the City in 2018. More than 100 of those trees were planted as part of a food forest in Baker and Waterford Parks that is accessible via the shared-use path.

The City has 72 community garden plots available to residents for a small fee. While some plots in Westside Regional Park were unavailable in 2018, those plots will be available after the Butterfly Lane realignment is complete.

Frederick was designated as a Platinum Level Healthy Eating Active Living (HEAL) City in June 2018, signifying the City’s leadership for its efforts in providing alternative transportation options, green and water facilities, and ongoing efforts to provide healthy food sources for all residents.

TRANSPORTATION

There is increasing interest in alternative transportation within the City. Critical links in the shared-use path, bike lanes, sidewalks, and mass transit continue to improve the network each year.

The City has installed 14.09 miles of on-road bike facilities, with 51.78 planned. Green-painted bike lanes were installed on North Market Street. In 2018, repairs and upgrades were made to the existing 12.58 miles of shared-use path, including the section from Culler Lake to Fairview Avenue in Baker Park.

Crosswalks and curb cuts for ADA access have been improved in 20 locations throughout the City in 2018 making those areas safer and easier to access for all.

TransIT, which serves the City and County, reports a decrease in ridership that follows national trends, but about 85% of the ridership activity occurs within the City.

WATER

Volunteers collected 12,890 pounds of trash from the City’s Watershed, Rock Creek, and Carroll Creek during spring and summer cleanups in 2018. These cleanup efforts help reduce the amount of trash that travels downstream to the Monocacy and Potomac Rivers and improves habitat for fish, macroinvertebrates, birds, and other animals.

Stream restoration planning is beginning for Carroll Creek near its confluence with the Monocacy River and for a portion of Little Tuscarora Creek in Clover Ridge Park land.

The City is conducting a flood study with the assistance of the Army Corps of Engineers to evaluate stormwater and flooding issues in the Motter Avenue, Monocacy Village Park, East Street to 14th Street, and 7th Street Shopping Center and portions of College Estates Subdivision. Results of the study are expected in 2019.

The City continues to manage the Watershed, a 7,500-acre forest that protects the only water supply the City owns. The headwaters of Fishing and Tuscarora creeks are in the Watershed, along with 22 threatened and endangered species. The City’s three other water supplies are located in the County.

IMPERVIOUS SURFACES

To date, about 50 street tree pits in the downtown area have been refurbished with flexible pavement to allow stormwater to flow through and reduce soil compaction around the roots.

The High Performance Buildings Tax Credit for LEED and LEED-equivalent buildings has been applied to 22 individual addresses to date.

AIR

Air quality is dependent on tree canopy, pollutants from industry in the area and outside the area, temperature, and other factors.

There is an increase of summer daytime temperatures of 3.9F in the City compared to its rural surrounds, indicating that the City is an urban heat island. Other data shows a two-degree annual temperature increase for the region with an increasing trend.

Tree canopy is one way to help reduce the impacts of urban heat island and filter particulates from the air.
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CLEANUP HUB
The City of Frederick Sustainability Department and Frederick County Office of Sustainability and Environmental Resources will partner in spring 2019 to facilitate stream cleanups in the area. The Potomac Watershed Cleanup will deliver supplies to City and County offices for all registered sites because of the increased participation in stream cleanups.

SAVE THE FISH
Through stream restorations, the City has an opportunity to help preserve a genetically distinct brook trout population in Little Gisbona Creek. This means they are found nowhere else in the world. The City is partnering with the County to restore as much of the creek as possible and find ways to lower water temperatures from elevating streamwater flows. Similarly, restoration in Rock and Carroll Creeks will help preserve populations of the state threatened pearl dace and highly rare checkered sculpin.

COGENERATION
The cogeneration facility at the WWTP helps offset the energy used at the plant and offsets about 4% of the City’s overall energy usage. The cogeneration facility saves an average of $5,730 per month.

ENERGY AUDITS
An ASHRAE Level II audit was conducted on the William Talley Recreation Center, which resulted in potential upgrades to reduce energy use and lower the building’s carbon footprint. The Sustainability Department hopes to conduct Level II audits on the Municipal Annex and the DPW facilities on Airport Drive in FY20. These audits will provide a punch list of upgrades to help reduce energy use and lower the carbon footprint of those buildings.

FLEET
The City’s fleet includes 6 hybrid sedans and 1 plug-in hybrid vehicle. City police are requesting funding for 20 hybrid utility vehicles to replace fleet vehicles in FY20.

CLEAN WATER
There are 12 additional cleanup sites throughout Frederick County, all funded by local streams and rivers. Volunteers remove thousands of pounds of trash every year from local waterways.

100% RENEWABLE
The City will purchase renewable energy credits to offset 100% of its electricity use beginning December 2020. This will exceed the City’s commitment of 20% renewables by 2022.

FLOODPLAIN
Sustainability and Engineering departments worked to redline the Floodplain Ordinance with a definition for riparian buffers and establish zones for allowed activity. This will improve water quality, help reduce erosion, and create more habitat. This is a legislative priority for FY19.

12,890 LBS
Volunteers collected 12,890 pounds of trash from the Watershed, Rock Creek, and Carroll Creek during spring and summer cleanups in 2018.

LIGHT UP
To date, street lights have been upgraded to LED on 34 street segments and 3 police patrol vehicles, with more planned each year. Grants from Maryland Smart Energy Communities (MSEC) have funded the upgrades for more than 250 of those lights. The City has applied for funding to upgrade an additional 176 street lights in FY20. Depending on existing future wattage, upgrades could mean a difference of $77 to $970 per year per fixture.

1,796 BAGS
Volunteers register cleanup sites through the Potomac Watershed Cleanup. Sites are registered on the City’s website with an average of 1,796 bags of trash collected each year. Site leaders request permission for access to the stream and to stage trash as a pre-determined location, advertise their event, register for supplies, and lead the cleanup operation.

77,000 BUTTS
Through a collaboration with Downtown Frederick Partnership, NAC, and the Sustainability Committee, about 30 Terracycle organizers and recycling containers were installed downtown. Nearly 59 pounds of butts have been collected so far. Preliminary data indicates that the butts containers are being used, but the containers have only been installed for a few months. The City’s AV Dept. has created a PSA about cigarette butts and the new containers.

ENR
The City’s wastewater treatment plant was upgraded in 2018 with enhanced nutrient removal technology to reduce the amount of nitrogen and phosphorus entering the waterway. These reductions will help improve the health of Monocacy and Potomac rivers and the Chesapeake Bay by reducing the nutrients that can cause harmful algal blooms.

COMPOST BINS
More than 100 compost bins have been deployed at private residential properties around the City. The bins help keep vermin out and keep the bees in. It is estimated that hundreds of pounds of compost has been kept out of landfill.

EVs
Engineering, Planning, Permits, and Sustainability staff are working on developing electric vehicle (EV) infrastructure to incorporate into the land management code and new ordinance. This will better prepare our City for installing public and private EV charging stations.

LMC SEC 605
Sustainability and Planning departments worked to redline the Landscaping section of the Land Management Code to include updates to the Forest Conservation language, as well as other changes to balance ecology and green spaces with development. This is a legislative priority for FY18.

MASS TRANSIT
About 85% of all Transit!S Connector Route ridership activity occurs within the City of Frederick, in FY18. Connector Routes provided more than 520,000 passenger trips, or about 1,160 trips per day, and about 1,000 passenger trips on Saturdays. The MARC Train Station Center on East Street is the most active location where about 1,400 passengers are boarding or arriving each day.
59
There have been more than 59 upgrades to intersections and
crosswalks this year as part of street,
water, and traffic signal upgrades,
in addition to specific sidewalk retrofits and
ADA intersection and corridor
improvement projects.

1,521 LBS
DONATED
The Food Security Network produced and
sold 1,521 lbs. of produce to
approximately 400 families in 2018. The
Food Security Network will partner with the
Network in 2019 to help
more families in need.

INVASIVE PLANTS
$20,000 was set aside in FY19 to help manage
Invasive plants in riparian areas. These areas
are critical to the health of our waterways.
Invasive plants crowd out native plants that
are critical for a healthy stream ecosystem.
Continued funding for treating invasive plants
is critical to maintaining healthy stream
conditions.

BREAD &\nBIKEABLE
The city has installed 14.09 on-road bike miles,
including the bike lanes on North Market Street,
with 5.79 planned. Repairs and upgrades to
the existing 12.58 miles of shared-use path have
been 5.92% in 2018, including the section from
Culler Lake to Fairview Ave. in Baker Park. There
are 22.4 miles planned between the City and
County.

1,157 HOURS
Volunteers donated 1,157 hours in 2018 to plant
trees, pick up trash, build inclusive parks, and
work on other sustainability-related tasks.
Friends of Waterford Park, Friends of Baker Park,
Rotary of Carroll Creek, Boy Scouts, Food
College HEAT, Stream-Link, Mid-Atlantic Off-Road
Enthusiasts, and other groups helped organize
these events.

5 EVENTS
The Sustainability Department
and Sustainability Committee attended and/or
led 5 events, including 3 focused on tree
canopy: celebrating the new canopy in the
Street and the Green Neighbor Festival.
The Sustainability Committee is partnering
with Frederick County Public Library to plan a monthly lecture series
in 2019.

662 TREES
In addition to Forest Conservation Act efforts and
scheduled street tree plantings, 662 trees were
planted in parks and the Watershed by volunteers
and Sustainability staff in 2018.

TREE PITS
50 street tree pits have been upgraded with flexible
pavement in the downtown area. This pavement
supports continued tree growth by
straining around the roots and allowing water to
soak through to the roots.

Stormwater is able to move through the pavement
goes to grass areas below where it is collected and
used by the tree. This pavement also reduces
soil compaction, which will maintain good air
and water pore spaces for root growth.
Flexible pavement enlarges the usable sidewalk space, allows for
a more seamless traffic without hindering
wheelchair and stroller movement
and reduces tripping hazards.

FLOOD STUDY
The US Army Corps of Engineers is evaluating the
stormwater and flooding issues in the Moler Avenue,
Monocacy Village Park, East Street to 14th Street, and 7th
Street, Shopping Center and portions of College Estates Subdivision.
The study will include a field survey of the existing stormwater system, stormwater modeling, and
development of alternatives to reduce stormwater
risk. Ultimately, the study will identify areas that lack
sufficient infrastructure those likely to suffer catastrophic losses from a 100-year storm event, and opportunities to
minimize those impacts.

ELECTRICITY USE
To provide for the City’s 7% increase in population,
new street lights, stop lights, and other equipment
were installed to meet the demands. However, since
2013, electricity use at City facilities has only
risen by 5%.
Street light upgrades to LED technology,
cogeneration at the wastewater treatment plant,
and upgrading HVAC units in buildings are part of the success in lowering energy use.

GHGs
According to the Metropolitan
Washington Council of
Governments’ Greenhouse Gas
Assessment, the City’s emissions
decreased by 9% despite a 1%
increase in population from 2005. Energy
efficiency measures and
cleaner fuel sources contributed to
reductions in greenhouse gas
emissions.
The assessment included
residential, commercial, and
municipal uses of GHG.

URBAN HEAT ISLAND
According to a Yale School of Forestry study, there is an
increase of summer daytime temperatures by 1.6°F in the
City compared to its rural surrounds, indicating that the
City is an urban heat island. Other data shows a
two-degree annual temperature increase for the region
with an increasing trend.

This temperature difference will lead to increased use of
air conditioning and bigger carbon footprints. Those
residents who are most vulnerable to the heat
will have more susceptible spaces to be
exposed to extreme heat in the
near future and heat-related illnesses will
impact these populations. One way to
drive the reduction of the urban
heat island is reducing the“heat
island” block sunlight and also cool the air through transpiration.