

St. Petersburg, Florida

Coastal Resiliency and Community Sustainability

by Brandon Johnson and Sharon Wright



Recognizing that climate impacts disproportionately affect vulnerable populations, St. Petersburg has set out to develop a citywide sustainability plan that is as focused on inclusivity as it is on climate solutions.

Neighborhood curbside recycling in St. Petersburg, Florida's first "Green City".
Photo Credit: Brandon S. Johnson.

Along the Gulf coast of Florida, St. Petersburg is the largest city in Pinellas County, which is the most densely populated county in the state. Often referred to as the “peninsula on the peninsula,” St. Petersburg’s 240-plus miles of shoreline contribute to the appeal of the city, but also expose a direct vulnerability to sea level rise (SLR) and climate change effects.

Hurricane season brings recurring anxiety to Floridians. Yet even without the effects of a tropical storm, St. Petersburg residents get a sneak peek, usually a few times a year, to the climate challenges the city faces. One of these climate previews occurs during the King Tides, which are naturally occurring, exceptionally high tides that can produce water levels a foot or more higher than normal tides. This phenomenon is dependent in large part on the position and phase of the moon and may occur when no other storms or compounding weather-related factors are present. Seeing properties and streets flooded on a bright sunny day is a tangible warning of the potential impact that SLR can have in the city. Additionally, the intense rainstorms that pop up across Florida, frequently in the heat of the late summer and early fall, can dump multiple inches of rain in a short amount time. If the storms hit during high tide, they can overwhelm the existing stormwater infrastructure and accumulate water on land. Climate change is expected to further contribute to the intensity and occurrence of these torrential rain squalls as well as named tropical storm systems.^{1,2}

In St. Petersburg, the waters of Tampa Bay and the Gulf prohibit extensive sprawl that can hinder the sustainability efforts experienced by many cities. However, increasing development near the water, combined with the low relief of the coastline, can also limit options for implementing adaptation strategies. The latest flood maps for the region indicating that over 40% of the city is in the Coastal High Hazard Area (i.e., low-lying areas below the elevation of the expected storm surge from a Category 1 hurricane) increasing the density of housing, businesses, and services in nearly half of the city may be setting the stage for a conflict between increasing the city’s sustainability for future growth

and increasing climate resiliency of the existing community. Recognizing that climate impacts, like many societal stressors, will disproportionately affect vulnerable populations, St. Petersburg set out to develop a sustainability plan that is as focused on inclusivity as it is on climate solutions.

Progress toward sustainability and resilience has been gained from the bottom up in St. Petersburg. Catalyzed by the city’s community-first approach to sustainability, St. Petersburg was recognized by the Florida Green Building Coalition as the first “Green City” in Florida in 2008. In 2015, the city’s efforts were codified through the creation of the Office of Sustainability and Resiliency (OSR) by Mayor Rick Kriseman, who is Chair of the Environmental Committee for the U.S. Conference of Mayors and has been recognized as one of the Top 100 Climate Leaders in the world,³ and the subsequent hiring of the city’s first Director of Sustainability and Resiliency.

St. Petersburg’s Integrated Sustainability Action Plan

The OSR team works with other executive offices and city departments, City Council, businesses, and the community to develop sustainable policies and effective programs that foster equity, resilience, and shared prosperity. Capitalizing on the opportunity to develop community-wide policies and programs, the OSR team led the effort to conduct the city’s Integrated Sustainability Action Plan (ISAP) beginning in 2017, which was the first comprehensive climate and sustainability planning effort conducted by a municipality in the Tampa Bay region.

The ISAP covers three key areas:

- **Climate Action Plan** including the City’s first community-wide greenhouse gas (GHG) inventory and Clean Energy Roadmap.
- **Sustainability Action** to address interconnected areas of a sustainable community from arts, workforce readiness, zero waste, poverty prevention, and equity.



As one of the American Cities Climate Challenge winners, St. Petersburg is in a two-year acceleration program with powerful new resources and access to innovative support to help meet or exceed near-term carbon reduction goals.

- **Realizing Resilience** is a framework that recognizes the susceptibility of a city surrounded by water, whose climate impacts will affect our vulnerable populations the most.

The ISAP development and implementation expanded the climate knowledge for the city's residents and stakeholders and spawned multiple partnerships for a healthier and more equitable community. Guided by the roadmap of the ISAP, and with the support and directive from the mayor to never "take your foot off the pedal", the city's team, along with many local partners, undertook an enormous amount of climate action and sustainability work in a short amount of time. Key actions include:

- **STAR Communities/LEED for Cities & Communities.** The Sustainability Tools for Assessing and Rating (STAR) system uses more than 500 metrics to gauge community-wide economic, environmental, and social performance and served as the framework for the ISAP development. Now merged with the LEED for Cities program, the city has re-assessed the sustainability performance since developing and implementing the ISAP and has achieved a 4-STAR certification and a LEED for Cities Silver certification.
- **Executive Order 2017-01 and City Ordinance 359-H.** Mayor Kriseman issued an executive order in 2017, which was later expanded and codified by City Council through City Ordinance 359-H, that requires any city-owned building larger than 5,000 square feet and any city-funded civil infrastructure project contracted at more than US\$2 million be designed and constructed to achieve LEED Gold certification and Envision Gold verification, respectively. The ordinance also requires that city projects of any type incorporate the latest best available, regional science related to SLR and other climate change effects.
- **Commitment to 100% Clean Energy by 2035.** St. Petersburg became the first city in Florida, and the 20th city nationally, to commit to 100% clean energy. The city is pursuing multiple pathways to achieve this ambitious goal, including reductions in energy demand through efficiency improvements in existing buildings and net-zero strategies for new development, partnership and support of grid improvements, and renewable energy investments
- **Commitment to 80% GHG Emission Reduction by 2050.** The city conducted its first community wide GHG inventory in 2019 (utilizing 2016 data), with a full update scheduled for 2021. The city was close to realizing the interim goal of achieving community wide GHG emissions reductions of 20% by the end of 2020 and has tracked a reduction of approximately

0.3 of 0.4 million metric tons of carbon dioxide-equivalent (CO₂e) so far. Moving forward, the city is taking aggressive action for energy reduction in buildings, as well as transportation improvements to further reduce GHG emission. The building efficiency and infrastructure requirements anticipated from the city's ordinance and policies along with a focus on electric vehicle initiatives are being accelerated through support from the Bloomberg Philanthropies.

- **Bloomberg American Cities Climate Challenge.** As one the American Cities Climate Challenge (ACCC) winners, St. Petersburg is in a two-year acceleration program with powerful new resources and access to innovative support to help meet or exceed the near-term carbon reduction goals established in the ISAP. This award provides robust technical assistance and a support package valued at more than US\$2 million. The Energy Foundation, as an ACCC partner, has provided US\$100,000 in additional funding to local non-profit organizations that work to address climate change effects.
- **Solar Energy.** The city has added over 1.2 megawatts (MW) of solar capacity on City facilities with more solar installations being developed. With seed funding from the city, two non-profits, Solar United Neighbors (SUN) and the Solar and Energy Loan Fund (SELF), launched in St. Petersburg in 2018. SUN is a non-profit, vendor neutral, solar co-op that has helped residents to install over 2 MW of residential solar since 2018. Working in collaboration with SUN, SELF is a certified non-profit Community Development Financial Institution offering affordable unsecured loans to low- and moderate-income homeowners for energy efficiency, renewable energy, and resilience projects. Since 2018 SELF has financed approximately US\$2.25 million for home efficiency renovations, including solar installations.
- **Neighborhood Resiliency Collectives.** Based on resiliency hub concepts, St. Petersburg has embarked on a pilot project to establish local, trusted, community-serving organizers, spaces, and services to provide community cohesiveness before, during, and after disruptions, including climate and other natural hazard events. For this pilot project, the city is working with stakeholders, organizations, residents, and funding sources to conduct a preliminary environmental assessment, establish trusted community liaisons, and increase engagement to strengthen community.

Progress and Path Forward

Great progress has been made in St. Petersburg and the city is focused on the goals established under the ISAP, while continuing to grow. Like many U.S. cities, St. Petersburg's

aging infrastructure is struggling to keep up with the continued growth. The effects of a changing climate, including a combined threat from SLR and increased occurrence and intensity of tropical systems and everyday storm events, are compounding the need for resilience in the city's strategic plan. Highlighting the importance and the urgency for these efforts is the fact that some of the areas in the city in greatest need of economic revitalization are located on the south side

of St. Petersburg, which includes some of the highest ground in the city as well. As SLR continues to expand the Coastal High Hazard Area, development and relocation into these historically black neighborhoods creates the potential for gentrification and climate justice issues. By focusing on equitable solutions to the climate challenges it faces St. Petersburg remains vigilant in its effort to continue to address both coastal resiliency and community sustainability. **em**

Useful Links

City of St. Petersburg Office of Sustainability and Resiliency: <https://www.stpete.org/residents/sustainability/index.php>

City of St. Petersburg ISAP: https://www.stpete.org/residents/sustainability/plans_policies.php

Florida Tide Watch King Tides: <https://www.flickr.com/photos/62725999@N04/albums>

Urban Sustainability Directors Network Resiliency Hubs Concepts: <http://resilience-hub.org/>

Brandon Johnson, ENV SP, LEED GA, lives in St. Petersburg and is an Associate and Senior Project Manager for Stantec, where he serves as the U.S. Technical Leader for Climate Change, Vulnerability & Resilience for Stantec's Environmental Services Practice. He is currently Chair of the Sustainability Committee for the St. Petersburg Area Chamber of Commerce. **Sharon Wright, AICP, LEED AP BD+C, ENV SP**, is the Sustainability & Resiliency Director for the City of St. Petersburg. She is responsible for delivering the mayor's sustainability priorities by working across city departments and with citizens, businesses, and community partners to establish a community-wide sustainability program.

References

1. IPCC. Summary for Policymakers. In: *Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* [Masson-Delmotte, V., P. Zhai, A. Pirani, S. L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M. I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T. K. Maycock, T. Waterfield, O. Yelekçi, R. Yu and B. Zhou (eds.)]. Cambridge University Press. In Press. 2021.
2. Winsberg, M.D. Anticipating Heavy Rain in Florida. Florida State University-Florida Climate Center. (n.d.). Retrieved October 2021, from: <https://climatecenter.fsu.edu/topics/specials/anticipating-heavy-rain-in-florida>.
3. Climate 100. The World's Most Influential People in Climate Policy; apolitical, 2019. Retrieved September 2021, from: <https://apolitical.co/lists/most-influential-climate-100/>.

A&WMA Student Awards and Scholarships



Each year, the Air & Waste Management Association (A&WMA) recognizes outstanding students who are pursuing courses of study and research leading to careers in air quality, waste management/policy/law, or sustainability. Award opportunities include:

Scholarships

A&WMA has scholarships available for air quality research, solid and hazardous waste research, waste management research and study, and air pollution control and waste minimization research. Each year, the Association headquarters awards thousands of dollars in scholarships. **Applications are due Wednesday, January 12, 2022 at 1:00 pm ET.**

Thesis and Dissertation Awards

A&WMA acknowledges up to two exceptional Master's Thesis and up to two exceptional Doctoral Dissertations each year. Nominations shall be made by the student's faculty advisors, who are members of A&WMA, only. **Applications are due Thursday, January 13, 2022 at 1:00 pm ET.**

Best Student Poster Award

The Student Poster Awards recognize student posters to be the best amongst those considered in the undergraduate, masters, and doctoral categories. Student must present the poster during the 2022 A&WMA Annual Conference & Exhibition on June 27 - June 30, 2022 in San Francisco, CA to be eligible for this competition. **Abstracts are due Tuesday, January 11, 2022.**

Student Activities at ACE 2022

Learn, grow and make connections by attending the A&WMA Annual Conference in San Francisco, CA. Student activities include:

- Environmental Challenge International (ECI) Competition
- Student Keynote and Welcome Reception
- Introductory technical sessions, networking, and more.

Visit www.awma.org/scholarships for more information.