



Mayors Climate Protection Center

Taking Local Action

Mayors and Climate Protection Best Practices

June 2018

12th Anniversary Winners
Mayors' Climate Protection Awards



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First Place Award Winners

LARGE CITY

Austin Mayor Steve Adler

SMALL CITY

Schenectady Mayor Gary R. McCarthy



Austin Mayor Steve Adler

Austin Energy Community Solar

In December 2016, the City of Austin, TX launched its Community Solar program with a 185 kW rooftop installation at the Palmer Events Center, enabling customers who rent or have shaded roofs to subscribe to 100 percent locally generated solar energy, and lock in the price for 15 years. The program expanded significantly with the completion of the 2.6 MW La Loma community solar farm in east Austin in early 2018. The city has been working closely with the neighboring low-income communities to develop this solar farm and dedicated half the project's capacity to low-income customers in the City of Austin Utilities' Customer Assistance Program (CAP) at a discounted rate. This community solar program is the first in Texas to extend solar access to low-income customers at an affordable rate, saving participants money from day one of their subscription.

The City of Austin, through its municipally owned utility, Austin Energy, has a goal of achieving 65 percent renewable power supply by 2027, including 200 MW local solar. Austin started down the path to Community Solar in 2013, driven by stakeholder calls to expand access to solar to renters and those who can't install solar on their own roofs, whether due to shading, ownership, or financial barriers. Renters make up over 50 percent of the city's residents and about 64 percent of renter households in Austin have income under \$50,000 per year. While residential solar installations in Austin have soared, the majority are on the roofs of middle and high income single-family homeowners. Renters and lower-income residents have faced large hurdles to accessing solar due to various financial, physical, educational, market and other barriers.

The city recognizes that expanding solar availability to low-income residents who live on a tight budget is crucial to foster a healthy growth of all city communities as a whole, both economically and socially. Austin City Council approved a resolution in October 2017 to allocate more resources for increasing solar energy adoption and access for underserved markets, including multifamily affordable housing, low-income residents, renters, and non-profits. The low-income community solar offering is one of a number of initiatives focusing on serving these markets.

Expanding solar access in a cost effective way continues to be a hard nut to crack. While prices have come down significantly over the past 15 years, solar is still generally more expensive than conventional generation, and despite the fact that the "fuel" is free, it has a high upfront cost.

Further, low-income customers and renters face several barriers to going solar, including not owning a roof to put solar on, roof condition, moving more frequently, inability to access credit or take on debt to pay for the large upfront costs of solar, and inability to leverage the 30 percent federal tax credit. Community Solar was identified as a way to get away from the physical barriers to on-site solar – anyone can access community solar, regardless of the condition of their roof, orientation, shading, or renting. Austin entered into a Power Purchase Agreement to build the La Loma project, enabling a third-party tax investor to monetize the federal tax credits and depreciation, lowering the cost of solar for participants, whether or not they had tax liability themselves. The subscription model required no upfront cost or deposit from participants, and moves with them within Austin Energy's service territory, helping customers who rent or may move before they've benefited from a long-term investment in rooftop solar.

The City of Austin has a goal of reaching net zero community-wide greenhouse gas emissions by 2050. The Community Solar program helps achieve this goal by increasing the amount of renewable energy produced locally, and avoiding energy purchases from the Texas market. The solar farm produces over 4,400 megawatt-hours of electricity annually and serves 440 Austin homes. The avoided annual emissions is about 3,500 metric tons of CO₂e.

This Community Solar program is the first in the state of Texas to expand solar access to low-income customers at an affordable rate. The program is in the process of becoming the first Green-e™ certified community solar program in the nation. It is the largest community solar farm in the Electric Reliability Council of Texas (ERCOT). It is the first community solar project in the country to be paired with utility-scale battery to pilot energy storage to support solar integration, as part of the Austin SHINES demonstration project.

Since the community solar farm was financed using a Power Purchase Agreement, there were no upfront costs (aside from Austin Energy staff time to develop the RFP and manage the contract). Instead, the power is paid for as it's produced over time, and the developer is able to leverage federal tax credits that the municipality wouldn't, reducing the project cost. That cost is integrated into the Community Solar subscription rate, with system-wide benefits of clean, local energy – such as reduced transmission and distribution losses – incorporated, reducing the rate to participants.

The market-rate Community Solar offering is fully funded by subscribers to the program, meaning there is no cross-subsidization by other customers. The low-income Community Solar discount is funded through the utility's Community Benefits Charge. There was no grant funding or contribution from the City of Austin's general fund.

In addition to GHG emissions and air pollution reductions, the Community Solar program brings tangible clean energy projects right into our neighborhoods. La Loma Community Solar farm, in particular, is located in a lower income neighborhood that has not seen significant solar development to date, and in the past suffered from serious contamination and environmental justice issues related to fossil fuel storage tanks previously located in the area. The project is located within blocks of both an elementary and high school, and utility is working with other city agencies to develop a pedestrian trail (and safe route to school) through the site, expanding opportunities to learn about renewable energy and engage in the City of Austin's sustainability initiatives. In total, 440 homes will be powered by La Loma, including 220 low-income families that otherwise wouldn't have been able to access solar.

Schenectady Mayor Gary R. McCarthy

Schenectady Sustainability & Innovation Project

The Schenectady, NY Sustainability & Innovation Project includes strategies to create operational efficiencies, support responsible economic development, and enhance the quality of life for city residents. Smart Lighting, solar energy conversion, and traffic calming measures reduce energy consumption and the resulting carbon footprint.

On Lower Union Street, LED lighting, video, sensors and Wi-Fi capabilities replaced 38 HID lighting fixtures. Analytic data predicts and reduced energy costs of over \$370,000 with city-wide implementation.

Installation of a 711 kW/3,029-panel solar array at the Bevis Hill reservoir produced emission-reducing power, saving the city approximately \$80,000 in the past two years, and an estimated \$840,000 over the system's lifetime.

Erie Boulevard and Nott Street Intersection (Erie/Nott) address safety and congestion in the 4-way signaled intersection. The final stakeholder-involved design produced a modern 2-lane roundabout using traffic calming measures, storm water management, resulting in reduced vehicle emission and fuel consumption, while increasing safety.

High energy costs and poor air quality led to smart lighting, solar energy conversion, and strategies to reduce emissions, within the city's tightening budget. Significant congestion and delays during peak traffic periods, and a 5.4 times higher accident rate than similar intersections statewide, led to the Erie/Nott improvements.

Embracing a culture of innovation in government has been difficult at times. However, Schenectady's Smart City efforts created broad partnerships ensuring community engagement and success, data driven governance tied to proven return on investment, efficient use of resources, and open-minded collaboration to develop new smart city models.

Specific to Erie/Nott St., widening the existing railroad bridge required an additional \$1 million. A collaborative multi-agency agreement was made whereby railroad would widen the bridge at no additional project cost.

Lowering energy consumption through LED lighting has decreased emissions. The addition of solar panels has resulted in reduction of approximately 269,000 pounds of CO₂. Less vehicle idling in a new roundabout at Erie/Nott is estimated to reduce volatile organic compounds by 199 kg and nitrogen oxides by 108 kg annually.

The city has built more than 50 partnerships with private companies, educational institutions, and non-profit and governmental entities. Predictive analytics to inform policy-making, and Smart LED lighting has led to savings of more than \$370,000 with future city-wide implementation.

The speed of re-design and implementation at Erie/Nott was just 14 months. Numerous public and private parties worked seamlessly to coordinate with the timing of an expansive \$500 million Mohawk Harbor waterfront development.

Program financing included:

- Bevis Hill Solar Array: 100 percent Solar City;
- Erie/Nott Intersection Improvements: Congestion Mitigation and Air Quality Improvement Program (CMAQ) and city funds (Federal = \$3,234,285 or 79.7%; State = \$475,338 or 11.7%; and City = \$346,828 or 8.6%, for a total investment of \$4,056,451); and
- Union Street Smart Lighting (City = \$249,665 or 67%; and Schenectady Metroplex Development Authority = \$125,000 or 33%, for total investment of \$374,665).

Reduced emissions of about 269,000 pounds of CO₂ are improving air quality for city residents. Less vehicle idling at Erie/Nott reduces an estimated 199 kg of volatile organic compounds and 108 kg nitrogen oxides annually. Leveraging monetary savings to improve efficiencies citywide will continue to improve the quality of life.

Large City Honorable Mentions

POPULATION OVER 100,000

Evanston Mayor Stephen H. Hagerty

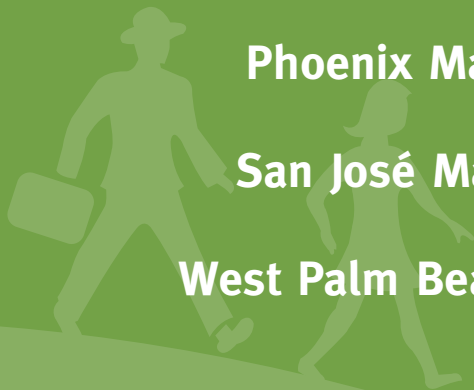
Minneapolis Mayor Jacob Frey

New York City Bill de Blasio

Phoenix Mayor Greg Stanton

San José Mayor Sam Liccardo

West Palm Beach Mayor Jeri Muoio



Evanston Mayor Stephen H. Hagerty

Climate Action and Resilience Plan (CARP)

In December 2015, then-Mayor Elizabeth Tisdahl signed the Global Covenant of Mayors, committing Evanston to developing a comprehensive Climate Action and Resilience Plan (CARP) within three years. In November 2017, Mayor Stephen Hagerty assembled a 17-member community working group to develop this ambitious plan and fulfill Evanston's commitment.

Evanston successfully completed two previous climate action plans: the 2008 Evanston Climate Action Plan (ECAP) and the 2014 Livability Plan. The ECAP called for a 13 percent reduction and the Livability Plan a 20 percent reduction in emissions respectively from 2005 levels. Both goals were exceeded (14% and 25%). This community-wide effort and passion drove Evanston to its third iteration of planning. In addition to the mayor's commitment to the Global Covenant, participation in the Chicago Climate Charter, Climate Mayors, We Are Still In, and the Mayors for 100percent Clean Energy initiatives heightened the need for a new plan.

Creating a plan that adequately and realistically addresses climate resilience and climate mitigation was a challenge. Although this is Evanston's third plan, it is the first that considers direct impacts of climate change. The group identified policies and strategies that reduce both emissions and vulnerability, such as investing in the urban forest to reduce the urban heat island effect, absorb more stormwater, reduce cooling costs through shade, and sequester carbon.

Although the planning hasn't directly caused decreased emissions, the community's focus on the plan set a strong foundation for a plan that will include substantial reductions. For example, Mayor Hagerty convened Evanston's largest employers and is encouraging them to commit to reducing future emissions. Without this effort, those conversations would have been much harder to facilitate. The city's Energy and Water Benchmarking ordinance, covering buildings 20,000-square-feet and above, helped identify that the 75 largest Evanston buildings are responsible for nearly 40 percent of its electricity consumption. CARP is now focusing on reducing building emissions.

It is unique because community members, working with staff, create a plan the Mayor will submit to City Council for approval. The community owns the process and product, while the Mayor can present a community-supported plan that has been vetted by staff. This multi-layered approach ensures that the process is transparent and reflective of community priorities and staff expertise.

This initiative was funded internally, with the Office of Sustainability facilitating the process with support from the Mayor and City Manager's Office.

Primary improvements to quality of life are: 1) resident empowerment through a community-based process, 2) reduction in greenhouse gas emissions and "co-pollutants" as we reduce fossil fuel burning, and 3) increasing awareness of the potential impacts of climate change and the steps the public can take to reduce their impact and vulnerability.

Minneapolis Mayor Jacob Frey

Green Business Cost Share Program

The City of Minneapolis Green Cost Share Program is a win-win approach to climate change that matches investment in energy efficiency and solar projects. The program makes real investments alongside non-profits and businesses to drive environmental change. These investments are made more deeply in overburdened environmental justice communities, known as Green Zones. The recipe for the program is simple; charge for the social cost of pollution and reinvest that money back into real solutions that drive change in programs like the city's Energy Benchmarking Program or ambitious goals like the recently-passed 100% Renewable Electricity Resolution.

The city recognized its limited control of environmental issues at the local level as well as the enormous opportunity to empower win-win solutions. The program started in 2012 as a way to eliminate perc, a hazardous cancer-causing chemical in the dry cleaning industry. Minneapolis recently became the first city in the country to eliminate perc using this strategy. In 2016, we started addressing climate change by investing in energy efficiency. This year the city has started the most aggressive city-based solar incentive program in the country. The overall approach cuts across traditional divides and brings together unlikely partners like local organizations, the Chamber of Commerce and the Minnesota Pollution Control Agency.

Ironically, the greatest challenge to the program was internal staff leadership in how they perceived our own role in driving change. Mayor R.T. Rybak led the charge on the concept in 2012 with limited resources. Council Member Frey, now Mayor Frey, saw the ability to scale up the approach by authoring sweeping environmental reforms scaling the program from 3 projects to over 50 projects annually.

The city has helped reduce almost 20,000,000 lbs of greenhouse gas emissions. The result of the solar incentive program has been churches, mosques, industry, schools, and small businesses increasing commercial solar installation by almost ten-fold. Once fully scaled, the approach will set us on a pathway to meet Paris Climate Agreement goals ahead of schedule.

The program is innovative because it reinvests with real dollars in solutions as genuine partners. The funding for the program is justified by unique fee structures that charge for the social cost of pollution. By reinvesting at closer to the true social cost of CO2 emissions it drives where other limited local programs cannot.

There are two funding sources that justify this reinvestment from the city's general fund: one is the Pollution Control Annual Registration Fee based on the potential to pollute; and the second is an implemented 0.5 percentage point franchise fee increase recommended by community stakeholders in the Clean Energy Partnership, a first in the nation partnership between utilities and the city.

The city is helping quantitatively in reducing the emissions that are causing climate change by close to 20,000,000 lbs and reducing 70,000 lbs of criteria pollutants that are harmful to human health every year. The city is assisting local organizations to save money to the tune of \$1,366,000/annually. It is helping create new sources of economic development, job creation and job training opportunities with \$20,000,000 in leveraged energy efficiency and solar work.

New York City Mayor Bill de Blasio

1.5°C: Aligning New York City with the Paris Climate Agreement

In 2017, New York City released *1.5°C: Aligning New York City with the Paris Climate Agreement*, the first-ever city climate action plan to clearly articulate the pace, scale, and impact of actions that are necessary to bring a city's efforts in line with the Paris Agreement's 1.5°C target. The plan includes commitments to over 30 major climate actions to begin by 2020 that will accelerate greenhouse gas reductions, including a commitment to lead the development of the first-ever global protocol for carbon neutrality for cities.

The void of leadership by the federal government on climate change has made the need for city leadership abundantly clear. The day after President Trump announced his intention to withdraw the U.S. from the Paris Agreement, Mayor de Blasio signed Executive Order 26, committing New York City to the principles of the Paris Agreement and to developing a plan to align with the Paris Agreement target of limiting global temperature rise to 1.5°C.

The largest challenge is implementation of this ambitious plan. The city is now collaborating with City Council to introduce major legislation to slash energy use in buildings, and is increasing its funding, in collaboration with both city and external partners, to vital programs that will achieve the ambitious objectives outlined in the plan.

New York City has already cut its greenhouse gas emissions 15%. This new action plan will lead to a reduction of more than 10 million tons of CO₂-equivalent by 2030, or another 19%. The building energy mandate alone will reduce over 4 million tons, the equivalent of removing 900,000 cars from the road and is the single biggest action that can be taken.

NYC is the first big city to align its work with the principles and ambition of the Paris Agreement and is leading the way for other cities to do the same. Through the 1.5°C plan, the city has committed to first-of-their-kind buildings energy mandates, with strict limits on fossil fuel use and energy consumption for all existing buildings over 25,000 square feet in New York City.

The city has committed \$2.7 billion to retrofit city-owned buildings, has offered \$10 million for free technical assistance to private building owners, and has committed over \$10 million for new electric vehicle charging infrastructure citywide. The 1.5°C plan also commits the city to create a Property Assessed Clean Energy (PACE) program to support the transition in the private sector with low-cost financing.

The 1.5°C plan assesses the city's actions for their impacts and benefits on factors such as local air quality and access to jobs. Benefits of the buildings energy mandates alone include avoiding 40 premature deaths and 100 emergency room visits annually through air quality improvements and the creation of 17,000 construction-related jobs by 2030.

Equity and climate change are inexorably linked. While climate change affects everyone, its impacts are not equally shared. Simply put, the poorest and most vulnerable are the hardest hit. Therefore, the work to reduce GHG emissions must address economic and social inequities.

Phoenix Mayor Greg Stanton

Cooler Phoenix Program

In 2016, the City of Phoenix, AZ partnered with a startup, Urban Offsets, to create a trading platform and carbon offset verification tool for local tree planting projects in cities. Last year, in an initial offering, the city received \$7,500 for planting 200 trees and the offsets were purchased by Arizona State University (ASU) to reduce their carbon footprint. In 2018, this program was modified to fund tree maintenance—where the city will now receive \$17,792 per year for the next 40 years (over \$710,000 total) for the care and maintenance of 137 trees in exchange for their carbon sequestration benefits. This program is scalable and provides an innovative means to fund climate action across the nation while increasing tree-planting projects in local communities.

Cities and their residents strongly support the concept the tree planting for its many benefits including creating shade, cleaning the air and beautifying the city, however, they are challenged to provide funding for large-scale tree planting projects in the face of competing priorities and limited budgets. This program allows universities, businesses or private investors to purchase carbon offsets in line with their corporate social responsibility goals while seeing the impact of those investments in their local community—the cities and towns in which they reside.

Typical carbon offset protocols, such as California’s model, the U.S. Forestry Offset Projects (AB 32), are highly complex and require a robust verification and administrative process that makes smaller-scale projects uneconomic. This new and simplified protocol, that leverages an online data entry tool and recognizes a city government as a transparent and trustworthy organization from which to purchase offsets, lowers the cost of verification to the point that it can fully fund tree planting and maintenance programs based on the market value of carbon.

The most recent contract signed with Urban Offsets will reduce global GHGs by 5400 metric tonnes over the life of the project with many more projects to follow.

The program provides incremental funding to cities for tree planting and maintenance, where the carbon offsets (greenhouse gas benefits) are directly tracked, verified and reported. All Verified Emission Reduction Units (VERUs) sold by Urban Offsets are 3rd party verified and certified by either the American Carbon Registry, Climate Action Reserve, The Gold Standard, or Verified Carbon Standard.

The program is unique as there are no other carbon offset programs like this in the U.S.—that support city tree planting projects from the sale of the associated carbon offsets. Now that the program has demonstrated its value, Urban Offsets is considering offering the program to cities and towns across the U.S.

It is notable that no city funding is required for the tree planting and maintenance program, with 100 percent of the tree-planting costs covered by the value of the carbon offsets and they provide an annual revenue stream for ongoing maintenance.

The program is specifically focused on planting projects in low-income and transit-dependent communities, where the tree canopy is limited and the citywide heat map indicates higher than average temperatures. This program will help reduce the exposure of vulnerable populations to the effects of extreme heat and urban heat island, while increasing shade, cooling the city, capturing storm water, reducing building energy costs, cleaning the air, and sequestering carbon—all while beautifying the city and increasing property values.

The City of Phoenix dedicates approximately \$5 million annually to a robust urban forestry management program based on our comprehensive Tree and Shade Master Plan, and was selected as one of a group of international cities with a strong urban forestry program to be included in a United Nations International Day of Forests publication by the United Nations Food and Agriculture Organization.

San Jose Mayor Sam Liccardo

Climate Smart San José

In February 2018, the City of San José, CA was one of the first U.S. cities to adopt a Paris Agreement-aligned climate action plan: Climate Smart San José. The Plan puts forth bold climate actions to drastically increase the community's energy efficiency and investment in renewable energy and dramatically reduce car emissions, all while promoting culturally vibrant neighborhoods. Early implementation of the Plan will include the launch of San José Clean Energy, the largest single city Community Choice Aggregator in the country, which will provide carbon-free electricity to the 10th largest city in the U.S. by 2021. The Plan brings together city departments, related agencies, the private sector, and, ultimately, our residents, and community groups to significantly change how cities work – pivoting from one that is City-centric into one that is people-focused.

In the absence of federal climate leadership, the city and community came together to not only support the principles of the Paris Agreement, but to develop a plan that charts the best pathways for keeping global temperature rise this century below 2°C. At the same time, San José is a growing city and is expecting 400,000 more people by 2040. Climate Smart San José provides a framework for urban and economic growth while reducing greenhouse gas (GHG) emissions.

Community engagement and participation in the development and implementation of the plan has been a priority for San José. Throughout the community engagement process, there were: 2,200 survey responses, 1,800 ideas submitted and 13 community meetings. But more work is required to ensure that when the Plan is implemented, it is inclusive, and benefits our diverse community, including low-income and multi-family communities and communities of color. To that end, the City is developing culturally inclusive campaigns and community playbooks for Climate Smart San José.

Climate Smart San José provides a detailed plan to reduce GHG emissions by 6.5 percent, year over year, for the next three decades. Our early efforts within the first year of implementation include: (1) the launch of San José Clean Energy - the largest single-city Community Choice Aggregator in the country, which

will offer 100 percent carbon-free energy within three years; (2) partnerships with organizations, like the Natural Resources Defense Council, to create policies and programs that spur commercial energy efficiency; and (3) the development of transformative transit projects – including the expansion of the region's primary rail system, BART, into San José's downtown, and procurement of electric buses in our transit agency and at the San José Mineta International Airport.

Climate Smart San José takes a ground-breaking approach to address GHG emissions in focusing climate action entirely around our people. The Plan introduces a radical innovative framing that we call the Good Life 2.0 – one that gains traction by articulating the quality of life benefits of sustainability. The Plan also leverages San José's strength in innovation. As the capital of Silicon Valley, the Plan integrates the important role San José plays supporting emerging technology, and models innovative approaches to advance next generation climate solutions.

The Plan will utilize a range of financing tools to spur many actions. The economic costs of the Plan will be approximately \$264 billion between now and 2050, unlocking benefits and delivering avoided costs and savings to the city on the order of \$269 billion – a net saving of \$5 billion. The economics of implementing the Plan means that the savings could be re-deployed into investing in the new climate smart, low-carbon infrastructure that will propel our city's continued and sustainable growth.

The Plan outlines nine strategies that work toward creating a city that is sustainable and climate-smart, connected and growth-focused, and economically inclusive. Strategies, such as focused densification and job creation, are concrete examples of improved quality of life. By connecting the plan's strategies to the Good Life 2.0 and making technology and resources available to all residents, the plan aims to provide savings for residents and businesses, reduce GHG emissions, and have co-benefits for health.

West Palm Beach Jeri Muoio

Resiliency and Climate Readiness in Stormwater Master Planning

Many stormwater master plans focus on the development of Capital Improvement Projects (CIPs). In 2014, the City of West Palm Beach became perhaps the first community in Florida to include several integrated aspects of resiliency and climate readiness in their Stormwater Master Plan. This Living Plan will help the city guide its stormwater management program for the next 30 years and beyond.

The project evolved over many years. Basic stormwater management was at the forefront (infrastructure and water resources needs) but as a coastal community with a strong dedication to sustainability, staff was visionary in linking several issues to develop a holistic and unique Stormwater Master Plan. Staff from the Mayor's office worked closely with the Utilities Department, Engineering, Public Works, Sustainability, Development Services, Planning, and Outreach - among others - to develop the project.

Initially, staff was unsure about how to fund a planning process of this size and scope. Project leadership from several departments collaborated and secured several grants to assist with implementation. At this time, that funding exceeds \$1.5 million from State and Federal sources. The city's dedicated stormwater utility also assisted the city in bringing on a consultant team to facilitate and complete the detailed analyses that were critical to the scientific validity of the project. Overall, the staff that started the project exhibited an extremely high level of professionalism and dedication to elevate the city's programs.

The Stormwater Master Plan created and strengthened several significant programs which are now primarily administered out the Mayor's Office of Sustainability. These Programs include:

1. A City-wide program to implement, study, and institutionalize green infrastructure throughout the city and region - particularly as it relates to stormwater and water resources. Numerous green projects are now underway that will treat stormwater through the use of natural, bio-engineered systems (which are dominated by native and beneficial vegetation). These engineered systems have numerous benefits, including many related to the ability of plants to uptake carbon. The city's new Stormwater and Low Impact Development Manual will emphasize the

use of these green technologies and provide education and guidelines to the development community.

2. Furthered a Citywide Urban Canopy Program. The tight connection to climate protection and trees was made in the Stormwater Master Plan and the City is now working on a comprehensive Urban Canopy Program. The City's emphasis on vegetation and trees also reduces heat island effects, which ultimately should further curb energy usage.
3. Creating an adaptive and progressive approach to stormwater that de-emphasized energy-intensive management practices (for example, pumping). The projects that were ranked significantly took sustainability and greenhouse gas emissions into account. As a result, the "greener" projects tended to rank higher and energy intensive projects ranked much lower and for the most part, fell off of the City's lists.

The City of West Palm Beach's Stormwater Master Plan is both outstanding and innovative because it was holistic and the first of its type - perhaps internationally. The City took what is traditionally an engineering exercise and elevated it to a futuristic, interdisciplinary, and robust planning effort. Since the planning process started, many other Florida communities have incorporated elements of this project into their stormwater programs and it has been referenced by other large, notable communities as an inspiration for similar efforts. This is perhaps the first Stormwater Master Plan that incorporated a robust vulnerability assessment that was based on a detailed engineering and planning process.

The Plan was initially financed 100% through the City's dedicated stormwater utility. Grants and alternative funding were secured that allowed the city to immediately start working towards implementation of various projects that resulted from the planning process. Some of these awards include:

- Almost \$1 million from the Florida legislature for implementation of an urban tree canopy project in the most floodprone section of the city (Pineapple Park); and
- \$30,000 for a low impact development project cooperatively funded by the South Florida Water Management District.

As a coastal community facing significant issues of sustainability and climate, the project shifted the city both in terms of practical engineering and programmatic/educational issues. Highlights include:

- Over \$38 million in stormwater capital improvement projects are underway based on the findings of the Master Plan. These projects are based on the sustainability criteria described in previous sections of this application. These projects are the first phase of Citywide green infrastructure improvements and will greatly advance climate protection for years to come.
- Over 10 public meetings were held in support of this project. Throughout the city, issues of Climate Protection were discussed in detail. Several programmatic initiatives were created out of the plan that focused on creating a public focused on climate protection. All of these projects will be launched from the Mayor's Office of Sustainability.
- Residents and business owners will save approximately \$13 million in flood insurance premiums annually due to the combined efforts of the City's CRS Program and advocacy for better floodplain maps. Due to the rising cost of flood insurance premiums and FEMA's new floodplain maps, this savings will only continue to increase over time.
- Due to the de-listing of the Lake Worth Lagoon as part of this project, the City potentially saved more than \$100 million (2016 dollars) in likely, future required retrofits. Savings to other stakeholders in the Lagoon watershed is also likely within the same order of magnitude. This was achieved all while further ensuring the health of the Lake Worth Lagoon through a concerted effort to retrofit watersheds.
- The city will experience less flooding and fewer failures of infrastructure over time. This savings is valued not only in dollars, but in significant health and safety improvements.
- The city's stormwater program will operate more smoothly and at a lower cost through 2046. These improvements will keep stormwater utility rates lower over the next 30 years - all while a higher level of service is provided.
- The city will continue to grow but more sustainably but with a unified vision for improved management of water resources and stormwater.
- The city will be more resilient to a changing climate and rising sea levels, as well as routine tidal events and weather.

It is important to note that the city has a robust history of leadership in sustainability. The city's dedicated climate program - The Mayor's Office as the Office of Sustainability - is extensive. In recent years, the City has accomplished the following central goals related to sustainability, among the many others highlighted throughout this application:

- All water management responsibilities are now combined into one city Department (Utilities). Virtually all major aspects of water supply, wastewater, and stormwater are managed out of this departments. This consolidation offers both practical and cost-saving benefits to the City and those that enjoy these services;
- Developed a unique and sustainable water supply that is primarily based on surface water with supplementation from groundwater and stormwater. This is one of the only surface water supplies in Florida;
- Created a Mayor's Office of Sustainability under current Mayor, Jeri Muoio. This program provides a rich and diverse leadership on many sustainability topics; and
- The city recently achieved a Certified 4-STAR Rating by STAR Communities, a nonprofit organization that evaluates and certifies sustainable communities. West Palm Beach was the first city in Florida (and the second local government in the State) to achieve a 4-STAR rating.

Small City Honorable Mentions

POPULATION UNDER 100,000

Binghamton Mayor Richard C. David

Derry Mayor James Morgan

Encinitas Mayor Catherine Blakespear

Hermosa Beach Jeff Duclos

Sarasota Mayor Liz Alpert



Binghamton Mayor Richard David

LED Streetlight Conversion

Under Mayor Richard David, the City of Binghamton, NY has completed a \$4.7 million project to convert all 7,000 of its municipal streetlights to LED technology. The project upgraded the city's infrastructure, saved electricity costs, reduced carbon emissions, and provided better quality lighting in neighborhoods and commercial districts. Binghamton's streetlight LED conversion is a rare municipal project that has extensive environmental, safety and financial benefits, while producing a final product that is immediately noticeable to residents and visitors.

During a review of the city's street light stock, a firm found that roughly 10 percent of lights were not in use due to burned out bulbs or malfunctioning equipment. The city's new brand of LED streetlights shines six to seven times brighter per watt than the city's old traditional streetlights. The city also wished to advance a bold green infrastructure initiative to reduce carbon emissions that also had a clear and sizable impact on quality of life.

Coordinating partnerships between the city, installation crews and electricity utility provider was the biggest challenge. Negotiating new tariff agreements and finalizing rebates took months of advance work before lights were installed.

Each year, the city will save 3,160,477 kWh (kilowatt hours) of energy. That translates to a reduction of three million pounds of carbon emissions each year. The equivalent environmental impact is as follows:

- Passenger Cars off the Road – 301
- Passenger Car Miles Driven – 3,612,682
- Planted Acres of Trees – 419
- Gallons of Gasoline – 158,677
- Barrels of Oil – 3,241
- Number of Powered Homes – 178

By showcasing the benefits of LED technology in a city of just 47,000 residents, Binghamton has provided a roadmap for other small cities wishing to explore this type of project. The project includes state-of-the-art lighting technology, replacing the city's traditional high-pressure sodium streetlights with LEDs, which use roughly half the electricity. The city has saved 45 percent on its street lighting electricity costs. In 15 years, the city will save \$5.2 million in electricity and \$1 million in maintenance costs. Each new LED bulb is expected to provide 100,000 hours, or 20 years, worth of light. Once installed, these lights will require minimal service for a generation. The project has an innovative capital financing structure. The project was mostly paid through bonding, but the energy and maintenance cost savings will cover the project's annual debt service, and more. Those savings were guaranteed by the installer, eliminating much of the financial risk on a project of this scale.

The program was financed in this way:

- Municipal bond: \$3,964,000 (85%)
- NYSEG (electric utility) rebate: \$700,000 (15%)
- Total investment: \$4 million

The energy and maintenance cost savings will cover the project's annual debt service costs. Those savings were guaranteed by the installer, an innovative way to eliminate financial risk on a project of this scale.

Dark streets and sidewalks lessen quality of life and foster criminal activity. Because the city converted to LED streetlights, drivers, cyclists and pedestrians have safer routes of travel. Business districts, once plagued by malfunctioning streetlights, have been brightened to welcome customers. The clean and bright LED bulbs signal a vibrant and forward-thinking community and have touched every neighborhood across Binghamton, which no infrastructure project in the city's history has done before.

Derry Mayor Jim Morgan

Net Zero Task Force

The Town of Derry is the 4th largest town in New Hampshire (population 33,211), with a largely middle class/blue collar workforce, an excellent school system, and a strong community spirit for helping fellow citizens. The town established a Derry Net Zero Program in March 2016 with a group of volunteers from the public, the local schools, Municipal Planning & Engineering, Conservation, the Town Council and the Chamber of Commerce (named the Net Zero Task Force). This group's goal is to achieve a clean environment by eliminating all carbon fuel emissions and reducing the economic cost to taxpayers and homeowners via lower energy costs.

The Derry Town Council recognized that the rate of adoption of renewable energy solutions by the Town, schools, residents and businesses lagged behind more affluent communities in the state. The Town Council decided to facilitate and promote renewable energy via this new volunteer group, the Net Zero Task Force. This group would provide resources to facilitate implementation of energy savings and renewable projects, as well as provide educational tools that would benefit the schools STEM and vocational programs.

Forming a volunteer team with business and technical skills to establish the Program was the primary obstacle. The Town Council conducted an outreach program to all potentially beneficiary organizations within the Town and was able to sign-up experienced professionals from various sectors to lead this effort. Secondly, educating the town residents of the benefits of a clean environment for themselves and their families was an initial obstacle due to the general lack of experience with these solutions for the majority of people. A number of campaigns were initiated and are still on-going today, including residential and business Button-Up programs for energy conservation (NH Saves), SolarUp (promoting solar via group community buying programs), Derry TV (recording actual solar installations and associated business case/paybacks for local broadcast), and providing education materials for the schools.

Energy Consumption has been dramatically reduced for the Town's municipal and school buildings.

- The town has initiated multiple projects for LED replacements, HVAC modernization and new controls and IT automation of lights and PCs that now result in over

\$500,000/year in savings for municipal buildings (examples include a 75 percent reduction in energy consumption at the town's largest facility, saving \$250,000/year, and LED street light replacements that have reduced energy consumption from 497,166 kWh/yr to 178,617kWh/year, savings of \$70,507/year).

- The schools recently completed an energy conservation update of their six buildings, which will result in a reduction of 38 percent in energy use and savings of \$460,111 per year.
- The town and schools joined a third party electrical purchasing consortium that has reduced electricity costs by 23 percent and guarantees the town that 45 percent of the energy comes from renewable energy.
- The town is completing a state-of-the-art 86.4 kilowatt solar tracking system at the Public Works Department (producing 156 megawatt hours/year). This project represents 4% of the Town's total electricity usage/year.
- When the solar project is completed by the middle of May 2018, the Town will have already achieved 49 percent of its electricity from renewable sources in two years!
- Four Electrical Vehicle Charging Stations (EVCS) are being installed in the downtown area to facilitate the charging of hybrid and electrical vehicles, with the majority of equipment and installation services donated by Tesla.

The Net Zero Task Force spent the first year of its existence in assessing all the buildings within the town and schools, with the Energy Star Portfolio Manager, enabling the group to prioritize the buildings with the most need for energy conservation. Action plans were identified for each building to facilitate maximum energy conservation with viable payback periods for the town or schools. After energy conservation projects were implemented, all buildings were assessed for potential renewable energy projects (roof or ground mount solar). With a goal towards educating the public for the benefits of renewable energy, the Public Works project was chosen as the first installation of solar, using a state-of-the-art solar tracking system that provides up to 45 percent more energy than fixed solar panels. It's estimated that this system will provide 3-times lower energy costs over the 25-year life of the system. In addition, Derry TV is recording 100 percent of the project, from planning, design, implementation and operation so that

this material can be incorporated into the curriculums of our local schools for STEM and vocational programs.

Short-term capital projects were financed as part of the yearly budgeting cycle; for example, LED replacements with a payback of 2-3 years or IT automation with less than one-year payback. Longer-term projects, such as HVAC modernization, were financed from the capital reserve fund, where money is allocated for plant modernization over the natural course of an assets functional life. Longer term projects (e.g. solar project at DPW) was financed from a NH state financing program, CDFA, where we were able to finance the \$300,000 project at a 3 percent interest rate, and where loan payments were set at the energy cost savings that were estimated from the project – therefore no affect to the tax base for the 10 year payback period, but big savings for the taxpayer after the loan is paid off (years 11 through 25).

The rate of adoption for solar projects in town has grown exponentially. From a few solar projects registered with the town building department in 2015, to adding over 100 residential projects in the last 2 years demonstrates the value of an informed public. It has been stressed that all classes of society can participate in energy savings and the use of renewable energy projects, to reduce greenhouse gas emissions as well as reduce energy costs. The Town of Derry is known for its sense of community, and this program outreach has tapped into that spirit.

Encinitas Mayor Catherine Blakespear

Encinitas' Gold-Standard Climate Action Plan

The City of Encinitas, CA recently adopted a gold-standard Climate Action Plan (CAP) and appointed a CAP Program Administrator to ensure the plan is implemented. Through the plan, the city will significantly cut greenhouse gas emissions by 41 percent below 2012 levels by 2030. To meet this aggressive target, the city will launch many new sustainability programs and double down on existing programs.

Major efforts will include:

- Establishing a Community Choice Energy program that relies on 100 percent renewable energy sources;
- Encouraging more biking and walking through the installation of mobility infrastructure;
- Increasing community rates of recycling and composting; and
- Growing the city's tree canopy to sequester carbon.

Encinitas Councilmembers are keenly aware of the urgent need to take aggressive steps towards reducing global greenhouse gas emissions and stopping climate change. At a time when our nation lacks the leadership needed to make sweeping changes, our city leaders saw an opportunity to take local action. The city's previous Climate Action Plan lacked quantitative goals and did not have a plan for implementation, necessitating a major update. The city was also missing the critical staff needed to spearhead the CAP update and subsequent implementation.

City leadership clearly saw that the major challenge to aggressively tackling climate change, locally, was funding and staffing. To overcome this, Council reprioritized the city budget and established the CAP Program Administrator position. This staff person secured the funds needed to update the CAP from our regional planning agency. With these resources in place and substantial community input and support, the city's CAP was overhauled and strengthened through the development of a detailed Implementation Plan.

The updated CAP includes specific, quantified, and scheduled actions that the city will take to reduce emissions. In anticipation of adopting the CAP, the city preemptively set in motion three of the most significant actions—developing a Community Choice Energy Program, drafting an Active Transportation Plan, and advancing the city's existing recycling and composting program.

The city's CAP has received accolades for being a “gold-standard” plan in a recent report produced by the Climate Action Campaign, a local climate change advocacy organization. Our collective solutions—including transitioning to 100 percent renewable energy, transforming waste diversion, and trimming vehicle emissions through mobility projects—provide an ambitious example for other cities to follow.

The Climate Action Plan update and implementation, thus far, have been financed as follows:

- \$86,000 (28%) staffing
- \$86,100 (28%) regional planning and consultant support
- \$17,000 (5%) California Environmental Quality Act analysis
- \$18,000 (6%) Climate Dashboard website
- \$100,000 (33%) Community Choice Energy Feasibility Study (cost shared between four cities)

Updating the city's Climate Action Plan elevated the environmental consciousness of the Encinitas community. The yearlong effort gained regional publicity, demonstrating the city's commitment to improving the environment for both current and future generations. The sense of environmental stewardship shared among Encinitas residents was exemplified and enhanced through the stakeholder-driven update of the CAP. Implementation of the CAP will bring capital improvements and new programs that will produce co-benefits like improved air quality, improved health and wellbeing.

Hermosa Beach Mayor Jeff Duclos

Community-wide Garage Sale

In early 2018, the City of Hermosa Beach, CA and its residents came together to: host a community-wide garage sale with 150 concurrent sales; collect unwanted items with a drive-thru donation center set up to accept donations to local and national charities; responsibly dispose of household hazardous waste materials and other items that could not be donated through a HHW roundup held on the same day; and clear out garages, making space to park vehicles and improve the safety of sidewalks/walkability.

Initiated as part of the Safe Routes to School and Safe Access Sidewalk Education Program, the goal of the community-wide garage sale was to provide the community with opportunities to reduce instances of vehicles parking over sidewalks, but also provided the benefit of cleaning up unwanted items from homes, extending the useful life of products by reusing and recycling, and ensuring the proper disposal of household hazardous waste.

The initial goal for participation was 30 households and to have the charities pick-up donations at each location. Once the registrations surpassed 100, staff had to re-think the event logistics and the idea of a “drive-thru donation center” was born.

The GHG reduction component of this event was three-fold:

1. Sellers sold or donated items to be re-used rather than transporting/disposing of them to a landfill that produces methane.
 - The household hazardous waste round up served nearly 1,000 households and collected more than 15,000 lbs of e-waste.
 - The drive-thru donation center served over 100 residents and resulted in approximately four delivery truck loads worth of donated items to local and national charities.
2. Buyers had over 150 options for garage sales in 1.4 square miles allowing many to walk between sales and make one trip rather than several trips on different dates.
 - In a post event survey, over 63 percent of respondents said they walked between sales, with an additional 5 percent noting that they biked.

3. By clearing garages and getting cars parked in them, we have improved the safety of our sidewalks, providing greater encouragement for walking rather than taking a car on local trips.

- Nearly 20 respondents to the event survey noted that they were motivated to participate so they could clear space in their garage to park a car. And three shared notes or photos of their cars now fitting in their garage.

In today’s buy-in bulk, everything at your fingertips, prime delivery purchasing culture, the simple act of re-purposing something or passing it on to others may seem novel, but the Hermosa Beach community-wide garage sale was a unique solution to a common problem in our little beach community of too much stuff and not enough parking. Staff also capitalized on social media promotions to manage registrations, help generate interest, and allow sellers to highlight their unique items using #hermosagaragesale.

The majority of costs associated with the program were donated in the form of staff time from the city and participating charitable organizations. Funds for advertisement of the event and boxes/equipment for disposal were provided by Athens Services, the city’s waste hauler.

When a city can make the sustainable option, the easiest option (and create a fun community-building event in the process), we can all do our part as responsible custodians of our environment. In a post event survey, more than 80 percent of respondents said they look forward to participating in a similar event in the future. By pursuing multiple objectives in one event, the result was a win-win for the city and the community. The city took the lead on advertising/social media, waived garage sale permits, and coordinated donations, and the community response was overwhelmingly positive. In a post-event survey one participant stated “Reaching out and talking with neighbors and meeting new people who stopped by the garage sale” was their favorite part of the event.

Several creative advertising and mapping techniques were used to promote the event and are featured on the city’s webpage at this link: <http://www.hermosabch.org/index.aspx?page=921>

Sarasota Mayor Liz Alpert

Community Canopy Program

The City of Sarasota's collaboration with the Arbor Day Foundation through an innovative Community Canopy program has provided over 450 free trees to residents through a user-friendly online portal and in-person give-away events. These trees will provide energy conservation, carbon sequestration, stormwater filtration, and improved air quality benefits that will increase as the trees mature as well as improved public awareness on how and where to plant trees to maximize energy and climate impacts.

In 2016 the City of Sarasota's residents began noticing the impacts of development on the urban canopy, leading to community members asking for ways to protect and replace city trees. Additionally, the city committed to 100 percent renewable energy community-wide and was actively looking for opportunities to support energy conservation. These two issues are addressed through the Community Canopy program which helps restore tree loss while providing energy and climate benefits.

An essential goal of the program was to ensure the trees reach all neighborhoods in the city. An analysis of the online programs identified North Sarasota was not receiving as many trees as the rest of the city. In response to this, we collaborated with trusted key stakeholders in this area, resulting in a successful in-person give-away at the neighborhood's local Farmers Market and new relationships.

A GIS analysis estimates that, based on the type of tree and of where each resident indicated they were planting the tree, over 620,000 kWh of energy will be saved, and more than 1,497,351 pounds of carbon sequestered as a result of this program. This estimate is based on when all trees reach maturity at 20 years.

This program was innovative in its outstanding accessibility to community members. City residents could easily "shop" online for a tree, use an interactive GIS-based tool to drag and drop the tree to various locations on their property, receive estimated energy savings from the tree's shading, "check-out," and the tree is mailed directly to their home. This user-friendly method allowed residents to receive a tree without leaving their home and learn how the location they plant impacts the energy and climate. Sometimes the most innovative projects combine simple, legacy knowledge like planting trees with new technology like GIS and direct shipping.

This program was 100 percent funded through tree mitigation funds in our development services department. As trees are removed in the city for development, builders must replant on a nearby location. If a suitable location is not available, developers pay into a fund that must be used for specific urban canopy related projects.

The quality of life improvements of the 450 trees planted throughout our community include reduced energy bills, enhanced shading and walkability, habitat creation, climate resilience, stormwater filtration, and aesthetic appeal. This is in addition to the many studies that illustrate a tree's ability to improve economic development for local businesses and property values. And last, but not least, the intangible yet real feeling many report when planting and watching a tree grow along side of them.



THE UNITED STATES CONFERENCE OF MAYORS

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