BOROUGH OF LINDENWOLD
COMMUNITY ENERGY PLAN

Borough of Lindenwold
Camden County, New Jersey

Prepared For:

Borough of Lindenwold
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Resolution 2023:165

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EXECUTIVE SUMMARY

Lindenwold Borough received assistance from the New Jersey Board of Public Utilities (NJBPU) to develop a Community Energy Plan (CEP). The grant will help the Borough plan for and invest in renewable energy and work towards a better environment for all its residents. Using the state's Energy Master Plan (EMP) as a guide, the strategies outline in this Plan will support the goal of increasing clean energy production and reducing energy use and emissions in the Borough. The following conditions currently represent the energy landscape of the Lindenwold:

- Approximately 60% of the Borough's electricity is consumed by residential uses, about 39% is used by commercial uses, 0.3% by industrial uses, and 0.3% by street lighting.

- Commercial natural gas consumption represents 87% of the overall natural gas consumption in the Borough. About 13% from residential and 0.04% from industrial consumption.

- At over 50%, the largest greenhouse gas emission (GHG) sector in the Borough is the commercial sector utilizing natural gas energy and followed by on-road vehicles (26%);

- Particularly for on-road vehicles, passenger trucks produced the largest vehicle miles traveled (VMT) at 47% of the overall VMT in the Borough, followed by passenger cars at 38%. Transit bus has the lowest VMT at 0.3%;

- Passenger trucks and cars produce the largest GHG emission in the Borough, at 39% and 37%, respectively;

- Less than 1% of the Borough's total personal vehicles are electric vehicles; and
- Solar installations within the residential sector represent 97% of the total solar installations in the Borough.

This CEP outlines tangible steps for Lindenwold Borough to transition the community towards a more sustainable and resilient environment for its current and future residents. The Borough will also ensure that such a transition will happen in a manner that is fair and equitable for all residents and businesses. The Action Plan provided in this plan outlines the strategies, initiatives, and implementation details on how to achieve each initiative. The following is a summary of the strategies and initiatives identified by the Borough. These are as potential strategies and initiatives, in which when opportunities are available for the Borough to tackle these initiatives, the steps outlined in the Action Plan described in this CEP can serve as a guiding document and resource.

Strategy 1: Reduce Energy Consumption and Emissions from the Transportation Sector

- Adopt Supportive Zoning and Regulations for Electric Vehicle (EV) Infrastructure
- Train First Responders on EVs and Electric Vehicle Supply Equipment
- Train Non-Emergency Staff on EVs and EVSE
- Purchase Alternative Fuel Vehicles
- Improve Municipal Fleet Efficiency
- Install Public EV Charging Infrastructure
- Encourage Non-Municipal Fleets to Improve Efficiency
- Encourage Workplace EV Charging Infrastructure

Strategy 2: Accelerate Deployment of Renewable Energy and Distributed Energy Resources

- Adopt Supportive Zoning and Permitting for Private Solar
- Post Solar Permitting Checklist
- Adopt Zoning and Permitting for Community Solar
- Train First Responders on Solar
- Train Non-Emergency Staff on Solar
- Install On-site Municipal Renewable Generation
- Buy Renewable Electricity for Municipal Facilities
- Institute a Community-wide Solar Purchasing Program
- Implement Renewable Government Energy Aggregation (R-GEA)

- Host a Community Solar Project on Municipal Property

Strategy 3: Maximize Energy Efficiency and Conservation and Reduce Peak Demand

- Upgrade Energy Efficiency in Municipal Facilities
- Conduct Energy Efficiency Outreach to Large Energy Users

Strategy 4: Reduce Energy Consumption and Emissions from the Building Sector

- Encourage Benchmarking and Commissioning for Existing Buildings
- Require Developers to Complete Green Development Checklist
- Conduct Outreach Targeting New Construction in the Community

Strategy 5: Decarbonize and Modernize New Jersey's Energy System

NOTE: EMP Strategy 5 is not included as municipalities do not have jurisdiction over grid regulatory issues. Thus, this CEP does not provide any information or actions specific to this strategy.

Strategy 6: Support Community Energy Planning and Action with an Emphasis on Encouraging and Supporting Participation by Low- and Moderate-Income and Environmental Justice Communities

- Make Community Energy Planning Inclusive
- Conduct Energy Efficiency Outreach to Low- and Moderate-Income Residents
- Support Shared Mobility Programs
- Support Low- and Moderate-Income Community Solar Subscriptions
- Conduct Energy Efficiency Outreach to Community-Serving Institutions

Strategy 7: Expand the Clean Energy Innovation Economy

- Adopt Energy Storage Policies

The goal of the State to reach 100% clean energy by 2050 entails having a net zero carbon footprint by eliminating carbon emissions or balancing carbon emissions with carbon removal and reaching maximum electrification of the transportation and building sectors. Successfully implementing these strategies will result in a drastic reduction in fossil fuel demand within the State of New Jersey.

Municipalities, like Lindenwold Borough, have a critical role in this state-wide effort to reduce greenhouse gas emission and transition to a sustainable energy system. This is a community-wide effort. Lindenwold alone will not be able to easily accomplish the initiatives identified in this plan. It will require outreach and partnership with other municipalities, businesses, nonprofits, and other community entities to effectively implement these initiatives. This Plan serves as a guide for Lindenwold in the short term and long term. Providing the availability of resources, Lindenwold

desires to tackle the identified initiatives in this Plan strategically to ensure an effective and fair participation from all the members of the community.

Lindenwold Borough executes this plan as a commitment to providing a safe, sustainable, and equitable environment in order to address the pressing challenges of climate change and greenhouse gas emissions.

The Borough Council, at its regularly scheduled meeting on March 9, 2022, held a public hearing to adopt a resolution of support (Resolution 2022:85) authorizing the Borough to apply for the Community Energy Plan Grant Program. A second public hearing was held on September 13, 2023 to adopt the final draft of the Community Energy Plan under Resolution 2023:165.

Solar Panels Lindenwold High School Parking Facilities

BACKGROUND

New Jersey's Energy Master Plan: Pathway to 2050

In January 2020, Governor Phil Murphy unveiled the state's Energy Master Plan (EMP)[1] outlining key strategies and initiatives to reach the goal of 100% clean energy by 2050. The development of the EMP was established under *Executive Order No. 28*, which directed the New Jersey Board of Public Utilities (NJBPU) to develop a statewide clean energy plan. Supporting the EMP initiatives is *Executive Order No. 100*, directing the New Jersey Department of Environmental Protection (NJDEP) to establish regulatory reforms, known as the *Protecting Against Climate Threats (PACT),* to reduce emissions and adapt to climate change. With the executive actions to establish the PACT and EMP, New Jersey is the first state in the nation to pursue such a comprehensive and aggressive suite of climate change regulations. The regulatory reform under PACT includes[2]:

- Establishing a greenhouse gas monitoring and reporting program to identify all significant sources of greenhouse gas emissions, including carbon dioxide and short-lived climate pollutants, and monitor the progress of emission reductions to reach the target of 80% below 2006 emission levels by 2050 required under Global Warming Response Act (GWRA).
- Adopting new regulations under the Air Pollution Control Act establishing criteria to reduce carbon dioxide emissions and short-lived climate pollutants.

[1] New Jersey, New Jersey's Energy Master Plan: Pathway to 2050, https://www.nj.gov/emp/docs/pdf/2020_NJBPU_EMP.pdf

[2] State of New Jersey Governor Phil Murphy, Governor Murphy Unveils Energy Master Plan and Signs Executive Order Directing Sweeping Regulatory Reform to Reduce Emissions and Adapt to Climate Change, January 27, 2020, https://www.nj.gov/governor/news/news/562020/approved/20200127a.shtml

- Reforming environmental land use regulations to incorporate climate change considerations into permitting decisions, which will allow better planning and building resilient communities by avoiding flood-prone areas, reestablishing chronically inundated wetlands, revegetating riparian areas, and encouraging green building and green infrastructure.

These regulatory reforms will ensure that NJDEP-permitted projects in the state will prioritize the reduction of greenhouse gas and other climate pollutant emissions and resilience. In addition to the goal of achieving 100% clean energy by 2050, the EMP will also address the Global Warming Response Act (GWRA)[3] mandate of reducing state greenhouse gas emissions by 80% below 2006 levels. The EMP, therefore, will provide a comprehensive approach to address the state's energy system. The EMP outlines the following seven (7) key strategies:

Strategy 1: Reducing Energy Consumption and Emissions from the Transportation Sector, including encouraging electric vehicle adoption, electrifying transportation systems, and leveraging technology to reduce emissions and miles traveled.

Strategy 2: Accelerating Deployment of Renewable Energy and Distributed Energy Resources by developing offshore wind, community solar, a successor solar incentive program, solar thermal, and energy storage. It also involves adopting new market structures to embrace clean energy development and contain costs, opening electric distribution companies' circuits for distributed energy resources (DER), and developing low-cost loans or financing for DER.

Strategy 3: Maximizing Energy Efficiency and Conservation and Reducing Peak Demand including enacting 0.75 percent and 2 percent utility energy efficiency standards for natural gas and electricity, respectively, improving energy efficiency programs in New Jersey, adopting new clean energy and energy efficiency financing mechanisms, and strengthening building and energy codes and appliance standards.

Strategy 4: Reducing Energy Consumption and Emissions from the Building Sector through decarbonization and electrification of new and existing buildings, including the expansion of statewide net zero carbon homes incentive programs, the development of EV-ready and Demand Response-ready building codes, and the establishment of a long-term building decarbonization roadmap.

Strategy 5: Decarbonizing and Modernizing New Jersey's Energy System through planning and establishment of Integrated Distribution Plans, investing in grid technology to enable increased communication, sophisticated rate design, and reducing our reliance on natural gas.

Strategy 6: Supporting Community Energy Planning and Action in Underserved Communities through incentivizing local, clean power generation, prioritizing clean

[3] New Jersey, Global Warming Response Act, 80 x 50 Report, https://www.nj.gov/dep/climatechange/docs/nj-gwra-80x50-report-2020.pdf

transportation options in these communities, and supporting municipalities in establishing community energy plans.

Strategy 7: Expand the Clean Energy Innovation Economy by expanding upon New Jersey's existing 52,000 clean energy jobs and investing in developing clean energy knowledge, services, and products that can be exported to other regions around the country and around the world, thereby driving investments and growing jobs. New Jersey will attract supply chain businesses to create dynamic new clean energy industry clusters and bring cutting-edge clean energy research and development to the state.

Community Energy Plan Grant

In 2019, the New Jersey Board of Public Utilities (NJBPU) established the Community Energy Plan Grant (CEPG) program[4] for municipalities to develop a Community Energy Plan (CEP) to meet the goals of the state's Energy Master Plan (EMP) – *New Jersey's Energy Master Plan: Pathway to 2050*. The EMP established that community-level action is imperative to achieve the state's goal of 100% clean energy by 2050. While the EMP provides a framework for a statewide transition to 100% clean energy by 2050, the CEPG program will provide support to municipalities to develop climate action plans at the local level. These local actions have specific focus on energy resilience, renewable energy, and energy efficiency – factors supporting the State's plan to tackle climate change.

The CEPG program was recently redesigned by the Office of Clean Energy Equity to prioritize low- and moderate-income and overburdened communities by removing barriers to participation and providing more financial and technical support to those communities that are most in need of these grants. The CEPG program is available to all municipalities, with additional funds provided to municipalities that have been identified as containing overburdened census tracts and distressed municipalities, according to the Environmental Justice Law, N.J.S.A. 13:1D-157[5] and the Department of Community Affairs Municipal Revitalization Index (MRI)[6] respectively ("Overburdened Municipalities").

During the second year of the program, Lindenwold Borough applied for the CEPG program. Per Resolution 2022-85, dated March 9, 2022, the Mayor and Council Members of the Borough of Lindenwold authorized the submission of the application to the NJBPU CEPG Program. On June 8, 2022, along with 45 other municipalities, the Borough was awarded the grant to develop a CEP. The grant will help the Borough plan for and invest in renewable energy and work towards a better

[4] New Jersey Board of Public Utilities (NJBPU), Community Energy Plan Grant Program, https://njcleanenergy.com/commercial-industrial/programs/community-energy-plans#:~:text=While%20the%20EMP%20provides%20a,applicable%20in%20their%20respective%20communities.

[5] N.J. Stat. § 13:1D-157, https://casetext.com/statute/new-jersey-statutes/title-13-conservation-and-development-parks-and-reservations/chapter-131d-reorganization-of-department-of-conservation-and-economic-development/section-131d-157-findings-declarations-relative-to-impact-of-pollution-on-overburdened-communities

[6] New Jersey Department of Community Affairs, Municipal Revitalization Index, https://nj.gov/dca/home/MuniRevitIndex.html

environment for all residents. Using the EMP as a guide, the Borough will develop sustainable strategies that will support the goal to increase clean energy production and reduce energy use and emissions.

Community Energy Planning

As defined by the state's Clean Energy Program, community energy planning is the process by which communities collaboratively select and strategically implement emissions-reducing initiatives that fulfill the EMP goals. The process involves forming a team of municipal staff, elected officials, relevant municipal board and commission members, and community volunteers. The Borough formed a team consisting of municipal staff, elected officials and consultants to carry out the tasks required to complete this plan. The team assessed the municipality's needs to find the opportunities for energy resiliency, renewable energy, and energy efficiency.

The core of the program development is the Community Energy Plan Workplan Template. The Template provides a comprehensive understanding of the EMPs goals and outlines initiatives to achieve these goals, as well as the steps to creating the CEP. In partnership with Sustainable Jersey, the NJBPU Office of Clean Energy Equity identified practical and impactful energy strategies that municipalities can implement to support the EMP goals and objectives. The team utilized this template to complete the CEP, which includes targeted initiatives that will be undertaken or with potential to be undertaken, depending on factors such as costs and resources. The Borough has identified these initiatives as part of their application submission to NJBPU. In addition to the template, the team utilized the Sustainable Jersey Guide for Sustainable Energy Communities as a guide in developing this plan, as well as the Sustainable Jersey Data Center[7] and other external resources as identified in this Plan.

[7] Sustainable Jersey, Data Resources, https://www.sustainablejersey.com/resources/data-center/sustainable-jersey-data-resources/#c4012

Lindenwold Public Library

COMMUNITY PROFILE

Geographic and Demographic Characteristics

Lindenwold Borough is approximately 4.6 square miles located in the center of Camden County. The Borough borders ten municipalities, including Gibbsboro Borough, Voorhees Township, Berlin Borough, Berlin Township, Clementon Borough, Gloucester Township, Laurel Springs Borough, Pine Hill Borough, Somerdale Borough, and Stratford Borough. Based on the New Jersey Department of Environmental Protection (NJDEP) GIS land use/land cover data[8], the Borough comprised of approximately 69% urban land, 14% forest land, 9.6% wetland, 6% barren land, and 1.3% water.

According to the 2020 US Census Bureau (Table H1)[9], 94% of the housing units are occupied and 6% are vacant. Multifamily of 10 or more units (36%) and single-family detached (30%) comprised the largest residential structure type in the Borough. Additionally, the U.S. Census Bureau American Community Survey (ACS), 2017-2021, (Table S2504)[10] also provided that majority of the housing

[8] New Jersey Department of Environmental Protection (NJDEP), Land Use/Land Cover of New Jersey 2015, https://gisdata-njdep.opendata.arcgis.com/documents/6f76b90deda34cc98aec255e2defdb45/about

[9] U.S. Census Bureau, 2020 Census Demographic and Housing Characteristics File (DHC)

[10] U.S. Census Bureau, 2017-2021 American Community Survey 5-Year Estimates

(61%) in the Borough was built between 1960 and 1979; and only 0.2% of the Borough's housing stock was built between 2010 and 2020.

The 2020 United States Census Bureau estimates a 21,641 population in Lindenwold Borough, along with 7,679 households, and 3,807 families. The racial composition of the Borough includes 33% White, 38% Black or African American, 0.9% American Indian and Alaska Native, 2.8% Asian, 0.0% Native Hawaiian and Other Pacific Islander alone. Hispanic or Latino of any race is 33% of the population. The change in population estimates, age composition, and racial composition of the Borough between 2010 and 2020 are summarized in Table 1 below.

Between 2010 and 2020, the Borough's total population increased by almost 23%. The median age increased slightly from 34.3 to 37.3 years of age. There were some changes in the age composition but not substantial. The racial makeup of the population, however, has had notable changes. Hispanic or Latino race increased by 12% between 2010 and 2020, while Not Hispanic or Latino race decreased by 12%. Additionally, population of White race decreased by about 16% while race of color and some other race alone increased slightly.

Table 1: Demographic Composition

Population	**2010**	**2020**
Total	17,613	21,641
Age Composition		
Median Age	34.3	37.3
Under 19 years old	26.2%	23.6%
20 to 34 years old	26.0%	22.7%
35 to 49 years old	23.5%	20.2%
50 to 64 years old	16.2%	18.3%
65 to 79 years old	5.9%	12.3%
Over 80 years old	2.4%	2.8%
Racial Composition		
Hispanic or Latino	20.9%	32.9%
Not Hispanic or Latino	79.1%	67.1%
Population of one race	96.3%	90.0%
White alone	49.9%	33.8%
Black or African American alone	36.0%	38.1%
American Indian and Alaska Native alone	0.5%	0.9%
Asian alone	2.9%	2.8%
Native Hawaiian and Other Pacific Islander alone	0.0%	0.0%
Some Other Race alone	10.7%	24.3%
Population of two or more races	3.7%	10.0%

Source: U.S. Census Bureau[11]

Energy Consumption

The data presented below, obtained from Sustainable Jersey, is the total amount of electricity and natural gas purchased in Lindenwold Borough by sector between 2015 and 2021. The amount of electricity purchased is illustrated in kilowatt-hours (kWh) and natural gas purchased is illustrated in therms. The data was compiled with the cooperation of seven investor-owned energy utility companies in New Jersey. Sustainable Jersey uses this data to calculate GHG emissions from electricity and natural gas.[12]

Electricity

According to the 2020 data prepared by Sustainable Jersey, Atlantic City Electric (ACE) provides electricity for the Borough, in which on average approximately 60% of the Borough electricity is consumed by residential uses, about 39% is used by commercial uses, 0.3% by industrial uses, and 0.3% by street lighting.

As shown below, the residential sector's electricity consumption saw the largest increase by about 6% between 2017 and 2018. However, overall, the sector has decreased by 3.7% between 2015 and 2021. The commercial sector experienced a reduction in electricity consumption since 2015 by 22%, with the largest reduction in the sector between 2018 and 2019 at 11%. The industrial sector showed the most significant reduction in electricity consumption at almost 23%, with the largest reduction at 14% between 2018 and 2019. Street lighting in the Borough represents about a 2% increase in electricity consumption between 2015 and 2021. As shown below, street lighting electricity consumption decreased by almost 12% between 2015 and 2016. However, in the period of 2016 and 2017, electricity consumption increased back to about 12%. Overall, the Borough's electricity consumption, across the sectors described below, has decreased over time by 11%.

Table 2: Amount of Electricity Purchased by Sector (kWh)

	2015	2016	2017	2018	2019	2020	2021	% Change (2015-2021)
Residential Electricity	66,600,636	64,448,754	60,302,224	63,851,327	60,407,923	61,699,263	64,165,822	-3.7%
Commercial Electricity	47,109,445	45,855,498	44,468,066	42,451,593	37,693,981	35,613,201	36,684,443	-22.1%

[11] : U.S. Census Bureau, DEC Redistricting Data, Table P1 (2010 and 2020) and DP1 (2000); 2016-2020 American Community Survey 5-Year Estimates, Table S1101

[12] Sustainable Jersey, Data Resources, https://www.sustainablejersey.com/resources/data-center/sustainable-jersey-data-resources/

Industrial Electricity	386,702	378,677	381,695	389,416	333,149	315,580	298,007	-22.9%
Street Lighting Electricity	319,956	282,848	317,360	326,696	326,522	326,768	326,649	2.1%
Total Electricity	114,416,739	110,965,777	105,469,345	107,019,032	98,761,575	97,954,812	101,474,921	-11.3%

Source: Sustainable Jersey[12]

Natural Gas

South Jersey Gas provides natural gas to the Borough. On average, approximately 89% of the natural gas in the Borough is utilized by the commercial sector, 11% is utilized by the residential sector, and 0.04% by industrial sector. There is no data available for the street lighting sector.

The natural gas consumption of the commercial sector has decreased to about 30% since 2015, with the largest reduction between 2018 and 2019. While natural gas consumption in the commercial sector has declined, the residential and industrial sectors have increased at 1.5% and 8.4%, respectively. Overall, the Borough has decreased natural gas purchases by almost 28% since 2015.

Table 3: Amount of Natural Gas Purchased by Sector (Therms)

	2015	2016	2017	2018	2019	2020	2021	% Change (2015-2021)
Residential	2,616,839	2,236,939	2,346,073	2,849,098	2,627,001	2,456,488	2,656,945	1.5%
Commercial	25,925,421	22,185,067	21,893,243	23,358,281	18,505,989	17,220,983	18,005,590	-30.5%
Industrial	10,943	6,740	7,604	12,345	11,818	11,018	11,866	8.4%
Total Natural Gas	28,553,203	24,428,746	24,246,921	26,219,724	21,144,808	19,688,489	20,674,400	-27.6%

Source: Sustainable Jersey[12]

GHG Emissions

Sustainable Jersey also provides for total community greenhouse gas (GHG) emissions from utility energy usage, other heating fuel usage, and vehicle miles traveled for every municipality in New Jersey between 2015 and 2020. These emissions represent the majority of GHG emissions found in a typical protocol compliant GHG inventory. Data is also provided for electricity and natural gas emissions, which are further broken down by sector.

Over 50% of the GHG emission was produced by natural gas consumption within the commercial sector. At 26%, on-road vehicles are the second largest sector emitting GHG in the Borough. Each remaining sector is less than 10%.

Table 4: GHG Emissions Data by Sector and Energy Type (MTCO2e)

	2015	%	2020	%
Electricity				
Residential Electricity	14,872	7%	13,777	7.8%
Commercial Electricity	10,520	5%	7,952	4.5%
Industrial Electricity	86	0%	70	0.0%
Street Lighting Electricity	71	0%	73	0.0%
Natural Gas				
Residential Natural Gas	13,938	6%	13,084	7.4%
Commercial Natural Gas	138,083	64%	91,721	52.1%
Industrial Natural Gas	58	0%	59	0.0%
Other Heating Fuels	1,636	1%	3,021	1.7%
On-Road Vehicles	38,034	18%	46,283	26.3%
Total MTCO2e	217,297	100%	176,041	100.0%

Source: Sustainable Jersey[12]

On-Road Vehicle Data

Regarding on-road vehicles, Sustainable Jersey provided vehicle miles traveled (VMT) and vehicle emission data for every municipality in New Jersey for the year 2015 and 2020. The data was provided by the cooperation of three MPOs, such as the Delaware Valley Regional Planning Commission (DVRPC), North Jersey Transportation Planning Authority (NJTPA), and South Jersey Transportation Planning Organization (SJTPO).

It should be noted that Sustainability Jersey indicated that the methodology of creating the VMT and GHG emission data presented herein varies among MPOs and changes over time. If the Borough desires to utilize the data provided herein, Sustainable Jersey recommends using data from the closest year for the year needed.

Vehicle Miles Traveled

According to the 2019 VMT data by Sustainable Jersey, passenger trucks have the largest VMT at 47% of the overall VMT in the Borough; this is followed by passenger cars represents at 38%. Transit bus has the lowest VMT at 0.3%.

Table 5: Vehicle Miles Traveled (VMT) by Vehicle Type (2019)

	VMT	%
Combination Long-Haul Truck	1,941,148	2.2%
Combination Short-Haul Truck	813,642	0.9%
Intercity Bus	548,483	0.6%
Light Commercial Trucks	4,147,269	4.7%
Motor Home	190,165	0.2%
Motorcycles	807,085	0.9%
Passenger Cars	33,998,455	38.3%
Passenger Trucks	41,853,579	47.1%
Refuse Truck	312,649	0.4%
School Bus	602,411	0.7%
Single Unit Long-Haul Truck	1,328,869	1.5%
Single Unit Short-Haul Truck	2,058,275	2.3%
Transit Bus	247,731	0.3%
Total	**88,849,760**	**100.0%**

Source: Sustainable Jersey[12]

Vehicle GHG Emissions

Unsurprisingly, passenger trucks produced the largest GHG emission in 2019 at almost 40% among the overall GHG emission in the Borough; this is followed by passenger vehicles at 37. Each of the remaining vehicle types shown below represents less than 5% of the overall vehicle GHG emissions.

Table 6: GHG Emissions by Vehicle Type (2019)

Vehicle Type	MTCO2e	%
Combination Long-Haul Truck	1,772.30	4.11%
Combination Short-Haul Truck	712.43	1.65%
Intercity Bus	611.12	1.42%
Light Commercial Trucks	1,943.34	4.50%
Motor Home	113.81	0.26%
Motorcycles	298.29	0.69%
Passenger Cars	15,941.21	36.95%
Passenger Trucks	16,911.73	39.20%
Refuse Truck	629.57	1.46%
School Bus	517.26	1.20%
Single Unit Long-Haul Truck	1,313.33	3.04%
Single Unit Short-Haul Truck	2,098.13	4.86%
Transit Bus	284.96	0.66%
Total	43,147.49	100.00%

Source: Sustainable Jersey[12]

Electric Vehicle

Data provided in this subsection explores the estimated total number of personal vehicles and electric vehicles in the Borough within 2015 and 2020. This data can be used to track community EV adoption. It should be noted that this data does not include vehicles that are in fleets. Sustainable Jersey prepared this data using the US Census ACS data and the New Jersey Department of Environmental Protection's (NJDEP's) Alternative Fueled Vehicles (AFV) Report data. As shown below, the percentage of EVs to conventional vehicles represents a very low amount.

Table 7: Electric Vehicle (EV) Ownership Data

Year	Total Personal Vehicles	Total EVs	% of EVs
2015	9,546	4	0.05%
2020	9,753	27	0.28%

Source: Sustainable Jersey[12]

Solar Installation

New Jersey's Clean Energy Program provides detailed information for all solar projects that are installed and currently under development in the state. The solar activity reports installation data is released monthly. According to the data synthesized by Sustainable Jersey, since 2008, there have been 323 solar installations in Lindenwold Borough based on July 2022 dataset provided by the Clean Energy Program. A comprehensive list of the solar installation by municipality can be found in New Jersey's Clean Energy Program Solar Activity Report[13].

Solar installations in the Borough have been predominantly residential project types at about 96% (313 installations), commercial project type at 1.2% (4 installations), school project at 1.5% (5 installations), and public buildings at 0.3% (1 installation).

Table 8: Solar Installation by Year

Year	# of Installation	%
2008	2	0.6%
2010	3	0.9%
2013	10	3.1%
2014	7	2.2%
2015	23	7.1%

[13] New Jersey Board of Public Utilities (NJBPU), Clean Energy Program, Solar Activity Reports, https://njcleanenergy.com/renewable-energy/project-activity-reports/project-activity-reports

2016	38	11.8%
2017	48	14.9%
2018	46	14.2%
2019	26	8.0%
2020	29	9.0%
2021	54	16.7%
2022	37	11.5%
Total	**323**	**100.0%**

Source: Sustainable Jersey[12]

Table 9: Solar Installation by Project Type

Project Type	# of Installations	%
Residential	313	96.9%
Commercial	4	1.2%
School	5	1.5%
Public	1	0.3%
Total	**323**	**100.0%**

Source: Sustainable Jersey[12]

Lindenwold Park Aerial View

ACTION PLAN

The Action Plan outlines the implementation details for each of the initiatives Lindenwold Borough selected for the Community Energy Plan. The subsequent sections outline seven (7) strategies, which represents the overarching strategies of the 2019 New Jersey Energy Master Plan[1] to reach the goal of 100% clean energy by 2050. Successfully implementing these strategies will result in a drastic reduction in fossil fuel demand within the State of New Jersey.

The initiatives within each of the strategies described in the following subsections consists of impactful activities that will bring municipalities and the state as a whole to a more sustainable community. These initiatives will require outreach and partnership with other municipalities, businesses, nonprofits, and other community entities to effectively implement these initiatives.

In this Action Plan, key implementation details such as lead personnel, departments or groups involved, potential stakeholders, anticipated timeframe of the initiative completion, and recommended

actions or next steps. To successfully implement each initiative, resources from the State of New Jersey and other agencies or organizations are provided.

STRATEGY 1: Reduce Energy Consumption and Emissions from the Transportation Sector

According to NJDEP's 2020 New Jersey Scientific Report on Climate Change[14], in 2018, the State's net greenhouse gas emissions were estimated to reach a low of 97.0 million metric tons of carbon dioxide equivalent. The transportation sector in the State was also identified as the largest source of greenhouse gas emissions. In the nation, along with industrial sectors, transportation is driving the trend of greenhouse gas emission increase, particularly the acceleration between 2017 and 2018 due to economic growth. The contribution of greenhouse gas emission from the transportation sector has been the most significant since 1990, primarily due to on-road transportation, resulting in continued dependence on gas and diesel fuel and increased vehicle miles traveled.

The State's Energy Master Plan (EMP)[15] envisions to electrify the transportation sector almost entirely by 2050. Accordingly, the State will continue to encourage electric vehicle (EV) adoption and deployment of charging infrastructure. Concurrently, efforts to reduce vehicle miles traveled and port and air emissions through electrification or decarbonized fuels are also identified within this strategy of the EMP.

1.1 Adopt Supportive Zoning and Regulations for EV Infrastructure

This initiative directs the municipality to facilitate the adoption of electric vehicles (EVs) by reducing barriers to charging infrastructure installation on zoning ordinances and site plan development regulations.[16]

[14] 2020 New Jersey Scientific Report on Climate Change, June 30, 2020, https://www.nj.gov/dep/climatechange/docs/nj-scientific-report-2020.pdf#page=34

[15] New Jersey Energy Master Plan, https://www.nj.gov/emp/

[16] Sustainable Jersey, Make Your Town Electric Vehicle Friendly, January 2022, sustainablejersey.com/actions/?type=1336777436&tx_sjcert_action%5BactionObject%5D=520&tx_sjcert_action%

The Department of Community Affairs (DCA) published a Model Statewide Municipal Electric Vehicle (EV) Ordinance[17] on September 1, 2021 to comply with P.L. 2021, c. 171, which Governor Phil Murphy signed into law on July 9, 2021. The model ordinance was written with support from the New Jersey Department of Environmental Protection (DEP) and Board of Public Utilities (BPU). The intent of the model statewide ordinance is to ensure that municipalities are requiring installation of EVSE and Make-Ready parking spaces in a consistent manner and to provide an ordinance that can be easily adopted by every municipality with no or minimal amendments by the municipality.

The model statewide ordinance is mandatory and becomes effective in all municipalities upon DCA publication. As noted in the model ordinance, municipalities can make changes to the "Reasonable Standards" sections of the ordinance through the normal ordinance amendment process but may not change the parts of the ordinance that were required by the legislation, such as the installation and parking requirements.

Level of Priority: High

Initiative Lead/Departments Involved: Planning/Zoning Board, Governing Body, Municipal Staff (Planning/Zoning, Board Secretary, Township Clerk), Consultant(s) (if any).

Anticipated Timeframe: The municipality should plan to complete the adoption of the Model Statewide Municipal Electric Vehicle (EV) Ordinance between 2 to 3 months. Updating relevant land use code or ordinance sections should take between 1 to 2 months.

Anticipated Costs and Funding Resource: The primary cost for this initiative will consist of municipal staff time for the permitting and zoning professionals to undertake the streamlining and clarifying code review and for planning and legal professionals to adopt and amend the ordinance.

Recommended Actions/Next Steps:

Adopt the DCA Model Statewide Municipal EV Ordinance – As required by state law, the municipality must adopt the DCA model ordinance for EV/EVSE. If desired, the municipality may revise the "Reasonable Standards" section of the model ordinance to address design standards for EV charging stations related to health and safety, as well as establish local parking regulations for EV charging stations. The "Reasonable Standards" must address ADA accessibility, lighting, parking enforcement, safety (bollards, etc.), and signage.

This step may be completed by municipal staff or consultant. The ordinance shall be reviewed and adopted by the governing body.

5Baction%5D=getPDF&tx_sjcert_action%5Bcontroller%5D=Action&cHash=b2c1d6dc76e16591db0b9214d361b454

[17] DCA Model Statewide Municipal EV Ordinance, https://www.nj.gov/dca/dlps/home/modelEVordinance.shtml

Staff Training – This is an optional step or action for the municipality but is encouraged. Training and educational opportunities about Plug-in EVs and EV charging infrastructure for first responders should be provided (see Initiative 1.2 and 1.3). Code and building inspectors and zoning officials should be trained on EV infrastructure to help them enforce regulations and promote electric vehicles in their work. Popular training sources include the Electric Vehicle Infrastructure Training Program (EVITP)[18] and Department of Energy Clean Cities Coalition Program[19].

1.2 Train First Responders on EVs and EVSE

This initiative directs the municipality to train local first responders to deal with accidents involving EVs or Electric Vehicle Supply Equipment (EVSE). These types of vehicles differ from conventional vehicles. It is critical that first responders should know how to quickly identify an electric, hybrid, biofuel, natural gas, hydrogen, or propane vehicle, located the high-voltage cables in an electric drive vehicle, length of how long it takes for a high-voltage system to fully discharge once disabled, and what type of fire extinguisher should be used. If not properly trained on this technology, emergency response personnel could be at risk for severe shock, injury, or electrocution.[16]

Accordingly, education programs for first responders should be integrated into their training. Educational and training opportunities should be incorporated into department policies and procedures. Requiring training can instill public confidence and maintain emergency preparedness for the municipality.

Level of Priority: High

Initiative Lead/Departments Involved: Emergency Management, Police, and Fire

Anticipated Timeframe: First Responder Training can take between 1 to 2 months.

Anticipated Costs and Funding Resource: This initiative will require municipal staff time. Costs for participating in course training/program should be budgeted.

Recommended Actions/Next Steps:

EV/EVSE Safety Training – The municipality should provide training and educational opportunities for first responders. A policy should be established to address ongoing training for first responders in the community. The training programs by the National Fire Protection Association[20] and the New

[18] Electric Vehicle Infrastructure Training Program, https://evitp.org/

[19] Clean Cities Coalition Network, https://cleancities.energy.gov/

[20] National Fire Protection Association, https://www.nfpa.org/EV

Jersey Division of Fire Safety & Kean University Fire Safety Training[21] provide training and educational opportunities.

1.3 Train Non-Emergency Staff on EVs and EVSE

This initiative directs the municipality to provide electric vehicle cross-training for non-emergency staff such as code officials, automotive technicians, and electricians. Accordingly, a policy should be established to integrate such training within department policies and procedures.[16]

Level of Priority: Medium/Low

Initiative Lead/Departments Involved: Code Enforcement, Building/Zoning Staff, Other departments anticipated to utilize EV fleet.

Anticipated Timeframe: Training non-emergency staff can take between 1 to 2 months.

Anticipated Costs and Funding Resource: This initiative will require municipal staff time. Costs for participating in course training/program should be budgeted.

Recommended Actions/Next Steps:

EV/EVSE Safety Training - Hold training for each relevant department including code and building enforcement and zoning. Training should be held on safety, proper procedures, driving habits, diagnostics/maintenance/repair training to relevant departments. A policy should be established to address ongoing training for non-emergency staff.

Course training and workshops for local officials is offered by National Alternative Fuels Training Consortium (NAFTC)[22] and U.S. Department of Energy Alternative Fuel Data Center[23].

1.4 Purchase Alternative Fuel Vehicles

The EMP directs the State to transition its vehicle fleet to alternative fuels, in which the municipality can also implement on their own fleets. Within this initiative, the municipality should replace existing municipal fleet vehicles with plug-in hybrid, battery electric, or other sustainable alternative fuel

[21] New Jersey Division of Fire Safety & Kean University Fire Safety Training, https://www.keanfiresafety.com/

[22] National Alternative Fuels Training Consortium (NAFTC), https://naftc.wvu.edu/courses-and-workshops/

[23] U.S. Department of Energy Alternative Fuel Data Center, https://afdc.energy.gov/

vehicles (AFVs), using fleet analysis to inform purchases. These vehicles produce fewer emissions and, therefore, improve air and water quality. A strategic plan prioritizing the transition of municipal fleet to AFV should be established. The plan should include a plan to install charging stations and a goal to transition at least 6.5% (recommended by Sustainable Jersey) of municipal fleets to electric.

Within this initiative, it will be important for the municipality to determine the first vehicle or fleet to replace with AFV, which can be done through fleet inventory and assessment. To facilitate adoption of EV/AFVs and promote to its residents, it would be advantageous to select a vehicle that provides constant services to the public throughout the municipality. In addition to determining the type of AFV to replace the conventional vehicle fleets, selecting the type of chargers will also play an important role.[24]

Level of Priority: Medium/Low

Initiative Lead/Departments Involved: This initiative would typically involve representatives from departments involved in vehicle maintenance, transportation, public works, finance/budget, and police department.

Potential Stakeholders: Fleet management companies, municipal services contractors, school districts

Anticipated Timeframe: The timeframe for implementation will vary depending on the municipality's current level of organization, age and condition of municipal fleet, municipal goals, and budgetary constraints. For fleet inventory and assessment, it may take approximately 3 to 6 months. However, this will depend on the availability of staff and existing records.

Anticipated Costs and Funding Resources:

Cost Considerations

Plug-In Electric Vehicles (Cost Comparison to Conventional Vehicles) – At initial purchase, according to Sustainable Jersey, passenger class plug-in EV moves closer to price parity with comparable gas-powered cars each year. Projections suggest that price parity for initial purchase price will be realized in 2025. Reduced fueling and maintenance costs of today's electric vehicles may offset the price differences. To learn the options on how to reduce the cost of procuring electric vehicles, the SJ Alternative Fuel Vehicle Procurement Guide[25] should be consulted.

[24] Sustainable Jersey, Purchase Alternative Fuel Vehicles, January 2020, https://www.sustainablejersey.com/actions/?type=1336777436&tx_sjcert_action%5BactionObject%5D=86&tx_sjcert_action%5Baction%5D=getPDF&tx_sjcert_action%5Bcontroller%5D=Action&cHash=d6a1df321277eddea79608ee3eaf8ec6

[25] Sustainable Jersey, Alternative Fuel Vehicle Procurement Guide, March 2022, https://www.sustainablejersey.com/fileadmin/media/Actions_and_Certification/Actions/Energy/Sustainable_Jersey_Alternative_Fuel_Vehicle_Procurement_Guide.pdf

For fueling, it was reported in a 2018 study from the University of Michigan[26] that the average annual fueling cost for lightweight EV in New Jersey is 48.6% of the comparative cost of conventional vehicle. The battery life of EV has been estimated to have 12-to-15-year lifespan in a moderate climate, according to a 2014 study from the US Department of Energy's National Renewable Energy Laboratory (NREL)[27]. Most EVs now come with an 8 year/100,000-mile battery warranty. Maintenance costs for EVs compared to conventional vehicles can vary depending on the location of service and vehicle model.

Plug-in Hybrid Vehicles (Cost Comparison to Conventional Vehicles) - Cost comparisons for plug-in hybrid vehicles vary by model. The Department of Energy's Hybrid Cost Calculator[28] provide costs comparison on commonly available plug-in hybrids to their conventional counterparts.

Hybrid Pursuit Class Law Enforcement and Specialized Emergency Response Vehicles – Hybrid law enforcement and specialized emergency response vehicles now come with built-in idle reduction technology, reducing fuel costs and emissions from long idle times.

Compressed Natural Gas (CNG) Vehicles – CNG vehicles create 10% less GHG emissions and half of particulate emissions compared to older diesel vehicles. A new natural gas vehicle costs roughly $4,000-$8,000 more than a conventional model. However, fuel is relatively stable and generally lower than diesel and gasoline. The average cost for a CNG refueling system is $10,000 plus installation.

Alternative Fuel – alternative to purchasing AFV, the municipality may opt to convert a vehicle to operate on an alternative fuel.

- Conversion to CNG can range from about $10,000 to $22,500 depending on the age of the vehicle, engine, size of CNG tanks needed, and who performs the conversion.
- Converting to electric vehicles can cost between $10,000 and $20,000 depending on the cost of labor and the complexity of the power system.

Procurement

There are four (4) methods the municipality should consider for procuring Alternative Fuel Vehicles. These methods are outlined below[25]:

New Jersey State Purchasing Contract and Purchasing Cooperatives - Vehicles within cooperative purchase or contract program are selected through a competitive bidding process, eliminating the need for each individual government unit to go out to bid. The municipality's Qualified Purchasing Agent or Business Administrator should be consulted to learn about the specific rules within the municipality regarding purchasing cooperatives. Below outlines the available purchasing contract and cooperatives:

[26] Natural Resources Defense Council (NRDC), Electric vs. Gas Cars: Is It Cheaper to Drive an EV?, May 25, 20223, https://www.nrdc.org/stories/electric-vs-gas-cars-it-cheaper-drive-ev

[27] Predictive Models of Li-ion Battery Lifetime, September 2014, https://www.nrel.gov/docs/fy14osti/62813.pdf

[28] Department of Energy's Hybrid Cost Calculator, https://www.fueleconomy.gov/feg/hybridCompare.jsp

- The New Jersey State Purchasing Contract[29]
- New Jersey County and Local Purchasing Cooperatives
  - Morris County Cooperative Pricing Council[30]
  - Hunterdon County Educational Services Commission[31]
  - Essex County Co-Ops[32]
  - Educational Services Commission of NJ[33] (Formerly known as the Middlesex Regional Educational Services Commission)
- National Purchasing Cooperatives
  - Climate Mayors Electric Vehicle Purchasing Collaborative[34]
  - Sourcewell[35]

Fleet Vehicle Leasing – the most common method for localities to procure AFVs. There are two basic fleet leasing contract models[25]:

- Lease to Own – higher monthly payment but paying into principal for eventual ownership. Also allows installation of aftermarket products for specialized vehicles. Used for the full range of fleet vehicle types, but this option is almost always used for heavy duty vehicles.

- Set Term/Mileage Lease – a lease contract where a set time frame and mileage are laid out in the contract. Car is turned in to dealer at end of term. Mostly used for passenger class vehicles. The advantage of the lower monthly leasing price and the limited term allows municipality/school district to "pilot" electric and plug-in hybrid vehicles.

Direct Purchase – the municipality or its school district can create their own RFPs for direct purchase of fleet vehicles. Bidders can be encouraged to apply for the tax credit via IRS form 8936[36] and pass the savings along as part of the bid. EV Smart Fleets provides a guideline for best practices for RFPs for the purchasing of Plug-in Vehicles – Capturing the Federal EV Tax Credit for Public Fleets[37].

[29] New Jersey Division of Purchase and Property, https://www.nj.gov/treasury/purchase/

[30] Morris County Cooperative Pricing Council, http://www.mccpc.org/

[31] Hunterdon County Educational Services Commission, https://www.hunterdonesc.org/hcesc/Co-Op%20Purchasing/CURRENT%20BIDS%20DOCUMENTS/Bids%20and%20Approved%20Vendors/

[32] County of Essex, Office of Purchasing, https://www.essexcountynjprocure.org/procure/

[33] Educational Services Commission of New Jersey, https://www.escnj.us/domain/316

[34] Climate Mayors Electric Vehicle Purchasing Collaborative, https://driveevfleets.org/

[35] Sourcewell, https://www.sourcewell-mn.gov/register

[36] About Form 8936, Qualified Plug-In Electric Drive Motor Vehicle Credit, https://www.irs.gov/forms-pubs/about-form-8936

[37] Capturing the Federal EV Tax Credit for Public Fleets, https://www.sustainablejersey.com/fileadmin/media/Actions_and_Certification/Actions/Energy/EV_Smart_Fleets_Capturing_the_Federal_EV_Tax_Credit_for_Public_Fleets.pdf

Service Contracting/Shared Services – another way for the municipality to reduce fleet emission is to specify within its shared services agreement or contract to prefer haulers (such as school buses, refuse, recycling, and leaf collection) with AFV vehicles.

Funding and Incentive Programs

30C Alternative Fuel Infrastructure Tax Credit (Federal Tax Credit)[38]– Gives qualifying businesses a 30% tax credit, up to $30,000, for the purchase and installation of EV charging infrastructure.

NJBPU Clean Fleet Electric Vehicle Incentive Program[39]- Allows local and state government entities in New Jersey to apply for $4,000 grants toward the purchase of battery electric vehicles, $5,000 grants for public Level-Two chargers, and $4,000 grants toward the purchase of a fleet Level-Two EV charging station(s).

NJDEP It Pay$ to Plug-in Program[40] – Provides grants to offset the cost of purchasing and installing electric vehicle charging stations.

EV Tourism[41] - Locations ranging from boardwalks, parks, and other unique attractions, as well as overnight lodging establishments will have the opportunity to apply for up to six Level-Two chargers and two DC Fast Chargers.

EPA Diesel Emissions Reduction Act (DERA) Funding for Electric School Buses[42] – offer rebates in addition to grants to reduce harmful emissions from older, dirtier diesel vehicles.

Utility Programs – Certain EV charging stations that receive electric utility service from Atlantic City Electric Company (ACE)[43] , Public Service Electric and Gas Company (PSE&G)[44] or Jersey Central Power and Light (JCP&L)[45] may be eligible for additional EV charging incentives directly from the utility.

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[38] Alternative Fuel Infrastructure Tax Credit, https://afdc.energy.gov/laws/10513#:~:text=Beginning%20January%201%2C%202023%2C%20fueling,depreciation%2C%20not%20to%20exceed%20%24100%2C000.

[39] Clean Fleet Electric Vehicle Incentive Program, https://www.nj.gov/bpu/pdf/publicnotice/Updated_Application_Clean%20Fleet%20Electric%20Vehicle%20Incentive%20Program.pdf

[40] It Pay$ to Plug In, https://dep.nj.gov/drivegreen/it-pays-to-plug-in/

[41] Electric Vehicle Tourism Program Application, https://www.njcleanenergy.com/files/file/EV/FY23/EVs%20-%20EV%20Tourism%20Program%20-%20Application%20for%20FY23%20-%20Round%201%20-%20FINAL%207_22_22.pdf

[42] School Bus Rebates: Diesel Emissions Reduction Act (DERA), https://www.epa.gov/dera/rebates?fbclid=IwAR3GTR_RGTzf2D_85txYJlA3VLGftEPCD3V9FpcDECtXlpBDEYS71ktOOm0

[43] Atlantic City Electric's EVsmart Program, https://www.atlanticcityelectric.com/SmartEnergy/InnovationAndTechnology/Pages/ElectricVehicleProgram.aspx

[44] PSE&G Electric Vehicle Charging Program, https://nj.myaccount.pseg.com/myservicepublic/electricvehicles

[45] Jersey Central Power & Light EV Driven Program, https://www.firstenergycorp.com/help/electric-vehicles/nj-ev/new-jersey-ev/jcpl-ev-driven-program.html

Recommended Actions/Next Steps:

Fleet analysis and inventory - The municipality should begin with fleet analysis and inventory of its own existing vehicle fleet (this action coincides with Initiative 1.5 below). It will be important for the municipality to determine the first vehicle to replace with an AFV. The Delaware Valley Regional Planning Commission (DVRPC)[46] provides a guidance to how municipalities should approach this step:

1. Make a list of all passenger vehicles in the municipal fleet.
2. Identify those passenger vehicles that spend the most time in public view—that is, on streets and in neighborhoods rather than in municipal lots.
3. For each of those vehicles, note the maximum miles traveled in a typical day.
4. Also note the longest trip each of those vehicles has taken in the last year.
5. Identify those vehicles that are least "mission critical" or have a readily available backup.

Creation of a formal fleet committee that includes personnel from each department already responsible for the municipality's fleet (i.e., police, fire, public works, etc.) should be considered. Alternatively, fleet managers may be directed to independently provide data (such as vehicle duty cycles, vehicle miles traveled, and fuel usage) from their fleet and implementing recommendations that emerge from the inventory process.

Procurement - Explore the procurement methods and funding sources described above. These methods can be used separately or together. The municipality's Qualified Purchasing Agent or Business Administrator should be consulted to learn about the specific rules within the municipality regarding purchasing cooperatives.

Strategic Plan - Plan for AFV rollouts through collaborative work sessions to ensure synergy of efforts, supportability, and maintainability of AFVs. Development of a strategic plan should be considered to guide the procurement and replacement of municipal fleets. Within this plan, the following objectives should be considered:

- Establish goals that will provide a pathway to zero emissions – for example, the municipality can establish a goal to achieve a 100% procurement of EVs or AFVs by 2030, reduce vehicle emission by 50% by 2030, and ending procurement of conventional vehicles by 2030.
- Establish and integrate a clean fleet procurement policy
- To support the goal to transition to clean fleets, the municipality should establish a policy limiting the procurement of vehicles in the short term.
- Conduct EV suitability assessment – to support EV and AFV deployment, it is crucial to complete a suitability assessment in order to understand the scale of EV/AFV roll-out and the required infrastructure.
- Establish a designated committee to support infrastructure coordination and to track goals established in the strategic plan.

[46] Delaware Valley Regional Planning Commission (DVRPC), Determining the First Vehicle to Replace with a PEV, https://www.dvrpc.org/energyclimate/alternativefuelvehicles/evmuniresource/firstev/

1.5 Improve Municipal Fleet Efficiency

Within this initiative, the municipality can make their fleets more efficient through various strategies, including driving training, tracking and management, and replacing conventional vehicles with AFVs. Accordingly, the municipality can coordinate the strategic replacement (or retirement) of vehicles, schedule of preventative maintenance, and improvement of driver efficiency to reduce the GHG footprint of all municipal fleets.[47]

Tracking fleet data such as fleet composition, vehicle maintenance, driver behavior, age of vehicles, duty cycle, and use patterns are critical in helping improve municipal fleet efficiency. Gathering these data can inform emission-reducing initiatives such as preventative maintenance, fleet size reduction, training drivers to reduce fuel use, and retrofitting vehicles idle frequently (i.e., police cruisers) with idle-reduction technology. Maintenance or replacement of low-efficient and/or high-mileage vehicles should be prioritized under this initiative. Initiative 1.4 discussed above regarding the opportunity and process in purchasing of AFVs for the municipality can help with the transition and transformation to a more efficient fleet.[47]

Transition of school buses also presents a major opportunity for the municipality. While electric school buses are more costly upfront, there are incentive programs available to help with the additional cost, such as the Mid-Atlantic Electric School Bus Experience Project[48]. Furthermore, the lower fuel cost and maintenance costs may result in an overall lower cost of ownership compared to the conventional school buses.

Improving a fleet's fuel efficiency and reducing overall emissions will result in long-term energy and cost savings, healthier air, and lower greenhouse gas emissions. An annual fleet inventory process should be established, as well as annual driver training. A goal stating the percentage reduction of fleet emission within a specific period should be established.

Before outfitting vehicle fleet with additional technologies or implementing strategies to conserve fuel, fleet managers should assess available options. The Alternative Fuels Data Center offers a collection of tools[49] to assist fleets in evaluating energy-efficient vehicle technologies. For example, the Alternative Fuel Life-Cycle Environmental and Economic Transportation (AFLEET)

[47] Sustainable Jersey, Fleet Inventory, April 2022, https://www.sustainablejersey.com/actions/?type=1336777436&tx_sjcert_action%5BactionObject%5D=84&tx_sjcert_action%5Baction%5D=getPDF&tx_sjcert_action%5Bcontroller%5D=Action&cHash=e43b1b5facf552824468ecdc1a52dad7

[48] New Jersey Clean Cities, Mid-Atlantic Electric School Bus Experience Project (MEEP), https://njcleancities.org/Electric_School_Bus_Initiative

[49] Alternative Fuels Data Center, Tools, https://afdc.energy.gov/tools

Tool[50] allows fleet managers to estimate the environmental and economic costs and benefits of alternative fuel and advanced vehicles, as well as idle reduction equipment.

At a minimum, the municipality should consider providing driver training programs that will provide knowledge on how to save fuel, while reducing emissions, increasing driver skills, improving driver performance, and increasing driver safety. This action may be coupled with incentive programs, such as recognition or special privileges, that reward driving behaviors. Fuel-tracking devices and telematics systems are also techniques/systems to consider. These provide feedback to help drivers reduce their fuel use but providing real-time alerts on driving behavior.

Level of Priority: Medium

Initiative Lead/ Departments Involved: This initiative would typically involve representatives from departments involved in vehicle maintenance, transportation, public works, finance/budget, and police department.

Potential Stakeholders: Fleet management companies and municipal services contractors

Anticipated Timeframe: Depending on the availability of municipal staff and existing records, creating a fleet inventory and fuel efficiency audit takes approximately 3 to 6 months, according to Sustainable Jersey. However, preventative maintenance and driving efficiency practices should be an on-going effort by the municipality.

Anticipated Costs and Funding Resources: Developing the fleet inventory and fuel efficiency audit will require municipal staff time. Alternatively, a fleet management system can also be utilized to complete this action. Each fleet management system varies widely in features and pricing to collect the necessary data.

Switching to biodiesel for diesel-powered vehicles, for example, can also be implemented and is typically low-cost. Implementing driver training program should also be considered and this is typically low-cost as well. However, EV/AFV purchases and conversions will require larger upfront costs, in which funding and incentives programs, discussed in Initiative 1.4, can help offset the costs.

Recommended Actions/Next Steps:

Form a fleet committee and conduct fleet inventory and fuel efficiency audit – The municipality should consider forming a formal fleet committee that may include personnel from each department responsible for the municipality's fleet. The committee may be directed to conduct a fleet inventory, which should include data on total fleet vehicles, vehicle miles traveled (VMT), fuel usage, VIN, vehicle type, year, mileage, purpose of usage, frequency of use, annual vehicle cost, etc. The

[50] Department of Energy, Alternative Fuel Life-Cycle Environmental and Economic Transportation (AFLEET) Tool, https://afleet.es.anl.gov/home/

municipality may utilize the Sustainable Jersey Fleet Inventory Spreadsheet[51] or similar tool to complete a fleet inventory. Accordingly, a fuel efficiency audit should also be completed.

Prepare a Report – A report summarizing fleet composition, fleet maintenance practices for fuel efficiency, potential for upgrades, maintenance plan, and discussion of opportunities to reduce GHG emissions should be prepared after conducting a fleet inventory and audit. The report should also illustrate goals and objectives to transition to a greener fleet. Strategies to consider are the following:

- maintenance programs to keep vehicles running efficiently
- driver training for using less energy
- improving fuel efficiency of current fleet
- removing unnecessary vehicles from the fleet
- purchasing new vehicles

Fleet tracking and management – If not implemented already, the municipality should consider utilizing software that can manage and track preventative maintenance of municipal fleet.

Fleet Efficiency Policy – Identify areas where the municipality can improve vehicle fleet efficiency and develop policies. Within the policy, a maintenance plan should be developed, if none is already in place, as well as best practices on municipal fleet operation. It is encouraged that the municipality should first assess its options by utilizing the collection of tools[49] provided by Alternative Fuels Data. At a minimum, the policy should cover driver training programs, route optimization technology, vehicle maintenance, fuel management and operation, and incentives. The following strategies should also be considered:

- Adopt a no-idling policy to further improve efficiency and reduce emissions.
- Utilize anti-idling technology.
- Ensure appropriate vehicle types and sizes for maximum efficiency for the duty performed. This includes utilizing alternatives to standard vehicles (e.g., use bicycles for parking meters or police patrols).
- Ensure proper use, storage, disposal, and recycling of old parts and hazardous materials.
- Use environmentally responsible materials for maintenance (e.g., alternative hydraulic fluids, recycled anti-freeze, eco-friendly cleaners, etc.).
- Maintain accurate, organized, current records to establish a "baseline" as well as to measure success from actions that are taken to reduce fuel use, costs, and emissions.
- Require that contractors used for municipal projects implement emissions reduction strategies.

[51] Sustainable Jersey, Fleet Inventory, https://www.sustainablejersey.com/actions/?type=1336777436&tx_sjcert_action%5BactionObject%5D=84&tx_sjcert_action%5Baction%5D=getPDF&tx_sjcert_action%5Bcontroller%5D=Action&cHash=e43b1b5facf552824468ecdc1a52dad7

- Eliminate older vehicles or those that are not used frequently.
- Purchase or lease plug-in electric vehicles, as new fleet vehicles are needed.

1.6 Install Public EV Charging Infrastructure

Municipalities have an opportunity to increase Plug-in Electric Vehicles (PEVs) adoption by increasing the availability of public chargers, thereby reducing consumer concerns about "range anxiety." Range anxiety refers to the concern consumers have in "running out of charge" and finding themselves stranded.

The role of public charging infrastructure is to support those motorists that have traveled outside their normal routine, to provide an emergency resource, and to reduce the associated range anxiety. There is significant evidence that as the density of publicly available charging stations increases PEV adoption increases as a result. Installation of electric vehicle charging infrastructure also includes other features such as signage and safety and accessibility features.

The key challenge for this initiative will be covering the costs of charger equipment purchase and installation. Several options are available for municipalities to either own the equipment or let others pay for it through a "sponsorship" or third-party ownership structure. Funding for electric vehicle charging infrastructure may be offered by state and federal programs.

Municipal involvement is crucial in the initiation and implementation of this effort. Promotion of EV charging infrastructure for public use through advertisement and public outreach is crucial. This effort can significantly impact the facilitation of EV/AFV adoption within the community. [51] [52]

Level of Priority: High/Medium

Initiative Lead/Departments Involved: This initiative would typically involve representatives from departments involved in planning/zoning, planning board, governing body, finance/budget, fire, and other appropriate municipal staff/official. It may be necessary for the initiative lead to meet with the governing body to discuss this initiative and garner support.

Potential Stakeholders: Electric utility, Transportation Management Associations (TMAs), car dealerships, car share providers

[52] Sustainable Jersey, Public Electric Vehicle Charging Infrastructure, June 2017, https://www.sustainablejersey.com/actions/?type=1336777436&tx_sjcert_action%5BactionObject%5D=521&tx_sjcert_action%5Baction%5D=getPDF&tx_sjcert_action%5Bcontroller%5D=Action&cHash=b0db97a5a8f135512fdb2a8b5db0b93c

Anticipated Timeframe: Sustainable Jersey expects that these projects will typically take 8-12 months. Time will be required to (1) educate, discuss, and make decisions; (2) follow the required procurement procedures (if applicable) and (3) install the signage.

Anticipated Costs and Funding Sources:

Ownership or Sponsorship Structure

Below are some options for the municipality to consider about how the charging infrastructure's cost be covered:

Direct purchase and ownership – The municipality owns and operates the EV Charging Station(s) and deploys it on municipal property, such as public parking lots. Such projects would be funded through the capital budget. Cost can typically be recovered through charging/fueling fees. Alternatively, the municipality may view this purchase as part of a public service provided by the municipality.

Sponsoring Partner – This approach funds the purchase and installation of a charger. The partner is allowed to recover costs by charging a fee for the fueling service or the provision of other services. In some cases, the sponsoring partner may justify the costs as part of a public relations strategy, a customer retention strategy, or providing a public service. This approach will require municipal staff to be involved in the recruiting process to find sponsoring partners.

Third-party Ownership – Within this approach, the municipality would provide land for a third party to own and operate an EV Charging Station. The equipment could be owned and operated by the equipment provider, or an independent third party.

Private Sector/Not-for-Profit – This requires that municipality works with private sector or not-for-profit entity for the installation of EV charging station for public use. This approach does not involve any of the municipality's assets. Therefore, procurement rules would typically not apply.

Types and costs for charging equipment

There are various types of charging stations. Level 2 Chargers are typically appropriate for publicly accessible systems. The DC Fast Charge, considerably more expensive, has been placed predominantly near interstate roadways.

Level 1 Charge: 120 volt - a standard outlet similar to those used for a toaster. Assuming a fully depleted battery (unusual in most cases) it will typically take 3 to 16 hours to fully charge a Plug-in Hybrid Electric Vehicle (PHEV) and 20+ hours to fully charge a Battery Electric Vehicle (BEV) with a Level 1 Charge. Range of Cost: $300-$1,500.

Level 2 Charge Basic: 240 volt - an outlet similar to those used for household electric dryers. Assuming a fully depleted battery (unusual in most cases), it will typically take 1.5 hours to 6 hours to fully charge a PHEV and 4 to 7 hours to charge a BEV with a Level 2 Charge. Range of Cost: $500-$2,600.

Level 2 Smart Chargers: Smart Chargers are offered in Levels 1, 2, and 3 commercial duty qualities and are generally more expensive than basic chargers. Smart Chargers offer differing levels of communication with the user, site host, utility grid, and the Internet, depending on model and manufacturer. They also offer the option of collecting fees for the charging session and a high level of reporting capabilities. Smart Chargers generally connect with the Internet using cellular connections, Wi-Fi, or phone lines. Range of Cost: $4,500 - $17,000.

DC Fast Charge: This level of charge is only available for some electric vehicle models and will recharge a car to about 80% in about 30 minutes. Range of Cost: $19,000-40,000.

Costs for Installation and Infrastructure: To accurately estimate infrastructure costs, an experienced electrician or electrical engineer should be contacted, a design established, and the costs estimated through a formal quote. These costs are in in addition to the cost of the equipment itself, as enumerated above:

Parking Garages:

- Level 1 Charge: Simple installation at existing wiring: $200-$400 per charge station.
- Level 1 Charge: Moderately complex installation: $4,000-$8,000 per charge station.
- Level 2 Charger (basic): Simple installation at existing wiring: $300-$500 per charge station.
- Level 2 Charger (basic): Moderately complex installation: $5,000-$10,000 per charge station.
- Level 2 Smart Charger: Simple installation at existing wiring; $400-$600 per charge station.
- Level 2 Smart Charger: Moderately complex installation: $6,000-$10,000 per charge station.

Surface Parking Lots:

- Level 2 charge basic and smart: $10,000-$15,000 per charge station.
- DC Fast Charge: $100,000-$200,000 per charge station.

Public Charger Promotion: $500 - $1000, mostly for signage.

There may be minimal cost to the municipality for implementing this initiative if a sponsoring partner or a third party finances the equipment.

Potential Funding Sources: (See Initiative 1.4 above)

Recommended Actions/Next Steps:

Form a Team and Determine Ownership Structure – Form a formal team or committee (optional) to initiate this effort. The Governing Body should be involved. The team should then determine how to implement this initiative, as described above. Either through direct ownership, sponsoring partnership, third party, or private sector/not-for-profit. The municipality should follow the proper procedure for whichever approach is chosen.

Procurement - Explore the procurement methods and funding sources described under Initiative 1.4. These methods can be used separately or together. The municipality's Qualified Purchasing Agent or

Business Administrator should be consulted to learn about the specific rules within the municipality regarding purchasing cooperatives.

Site Selection – As the municipality determines which approach to undertake, potential locations for the public EV charging stations should be identified. The charging stations should be located at destinations that are easily visible and accessible to the public and strategic locations such as in municipal parking areas. The location of the charger relative to the electrical interconnection point should be carefully considered, as it can significantly impact the project costs.

The municipality should assess the feasibility of public charging stations at municipal parking lots or street parking, commercial shopping areas or corridors, residential developments, near public transportation, public libraries, community centers, parks and recreational facilities, schools, and other high-foot traffic areas with high public visibility. While assessing the feasibility of charging sites, the municipality should also consider the impact of the site selection to the demographic within the selected area, the surrounding environment, and land use. The following factors should be carefully considered:

- Consider already existing carpool areas for charging sites.
- Prioritize the placement of charging infrastructure where warehouses and other truck-attracting facilities are located.
- Prioritize the placement of charging infrastructure where trucks are parking, idling, or traveling slowly on local roads and arterials.
- Prioritize the placement of charging infrastructure where residents are visiting the emergency room or being hospitalized for asthma, or children are being diagnosed with asthma at a higher rate than the State average.
- Locate charging infrastructure in areas with high-density housing and without access to a private driveway or garage.

Regulation Update – Use regulations for charging stations should be reevaluated to allow for accessibility and convenience for EV users. For example, removing time restrictions or allowing for a longer parking time for EVs to park while charging. Install appropriate signage directing drivers to any publicly available chargers in the municipality.

1.7 Encourage Non-Municipal Fleets to Improve Efficiency

GHG emission reduction can also be tackled by encouraging local fleet managers or commercial vehicle owners to improve their fleet efficiency. Particularly encourage them to strategically replace (or retire) vehicles and improve driver efficiency to reduce their fleet's GHG footprint. The municipality should offer resources to ease the process, such as procurement tools and incentive

information. Additionally, the municipality may also consider requesting or requiring its own vendors, such as waste management and recycling companies, arborists trucks, etc. to use AFVs for delivery of goods and services.

Municipal involvement is crucial in the initiation and implementation of this effort. Promotion of EV charging infrastructure for public use through advertisement and public outreach is crucial. This effort can significantly impact the facilitation of EV/AFV adoption within the community. The municipality should lead the outreach campaign and consider partnering with neighboring municipalities or the county.[25]

Level of Priority: Medium/Low

Initiative Lead/Departments Involved: Green Team/Municipal Staff, Communications Staff

Potential Stakeholders: Private transit companies, business associations, fleet management companies (i.e., transportation analytics firms), transportation-related nonprofits, local auto dealerships, local fleet operators

Anticipated Timeframe: Outreach is crucial in tackling this initiative and should be an ongoing effort for the municipality.

Anticipated Costs and Funding Sources: The funding required for this action depends on the type of outreach or medium used. The cost can be very minimal if the municipality utilizes its existing website and newsletters to reach the public. Other outreach initiatives may create new costs, such as putting together promotional videos or banners.

Recommended Actions/Next Steps:

Community outreach campaign – Reach out to commercial property owners, multifamily property owners, commercial fleet operators, local workplaces, auto dealerships, etc., using email distribution lists or social media. Educate the potential stakeholders about the cost and benefits to the environment and to the company -- i.e., recruit/retain employees, increase company's "green" image, appeal to investors, tax incentives etc. Explore incentives, tax incentives, density bonuses, parking space minimums, provisions to encourage businesses to install EV charging stations.[53]

[53] Sustainable Jersey, Electric Vehicle Community Outreach, March 2023, https://www.sustainablejersey.com/actions/?type=1336777436&tx_sjcert_action%5BactionObject%5D=598&tx_sjcert_action%5Baction%5D=getPDF&tx_sjcert_action%5Bcontroller%5D=Action&cHash=ba8f4707e52394f35240659d747113e9

1.8 Encourage Workplace EV Charging Infrastructure

EV chargers at the workplace enable employees to comfortably commute to work and home by EV. For some, the availability of workplace EV charging is critical to justify purchasing EV. EV charging community outreach campaign should be implemented by the municipality to help encourage workplace EV charging. The municipality can directly engage local businesses to promote workplace charging. Businesses should be informed of funding availability and resources like the NYSERDA's Workplace Electric Vehicle Charging Policies: Best Practices Guide[54] . If possible, offer incentives such as promotion in municipal communications, a "ribbon cutting" event with public officials, and/or a fast-tracked permitting process. Employers may elect to offer free charging or not. The option to charge fee for charging can offer some return on investment.

As part of the community outreach campaign, municipal staff should device a plan to meet with several local employers. A target of number of workplaces that will provide EV charging should be established to serve as a measure of success for this initiative.

Level of Priority: Medium/Low

Initiative Lead/Departments Involved: Green Team/Municipal Staff, Communications Staff

Potential Stakeholders: Electric vehicle charging infrastructure companies, Local business associations, Local charging station installers (e.g., electricians)

Anticipated Timeframe: Ongoing

Anticipated Costs and Funding Resources: The funding required for this action depends on the type of outreach or medium used. The cost can be very minimal if the municipality utilizes its existing website and newsletters to reach the public. Other outreach initiatives may create new costs, such as putting together promotional videos or banners.

Recommended Actions/Next Steps:

DCA Model Statewide Municipal EV Ordinance Adoption – Begin with the adoption of the EV infrastructure ordinance - DCA Model Statewide Municipal EV Ordinance that will require or incentivize businesses to incorporate EV or make-ready spaces.

Community outreach campaign – Reach out to commercial property owners, multifamily property owners, commercial fleet operators, local workplaces, auto dealerships, etc., using email distribution lists or social media. Educate the potential stakeholders about the cost and benefits to the environment and to the company -- i.e., recruit/retain employees, increase company's "green" image, appeal to

[54] New York State Energy Research and Development Authority, (NYSERDA), Workplace Electric Vehicle Charging Policies Best Practices Guide, December 2015, https://www.sustainablejersey.com/fileadmin/media/Actions_and_Certification/Actions/Energy/NYSERDA_2015_Workplace_EV_Charging_Policies_Best_Practices.pdf

investors, tax incentives etc. Explore incentives, tax incentives, density bonuses, parking space minimums, provisions to encourage businesses to install EV charging stations.

Strategy 2: Accelerate Deployment of Renewable Energy and Distributed Energy Resources

Mitigating our contribution to climate change will require rapid transformation of the energy supply of fossil fuel to renewable energy resources and distributed energy resources (DER). This strategy can help reduce the state's climate emissions and meet the goal of clean energy.

As defined in the EMP, distributed energy resources (DER) are on-site systems, equipment, or processes that are appropriately sized, modular, and decentralized, as compared to larger, centralized power plants, that also include transmission and distribution systems. DER can be either grid-connected or off-grid energy systems located in or near the place where energy is used. DER can provide more local control and resiliency for consumers in the energy system.

2.1 Adopt Supportive Zoning and Permitting for Private Solar

Zoning and permitting regulations can influence how quickly solar power is adopted in the municipality. Providing clear guidance and standards for solar developers and limit barriers to solar adoption such as lengthy permitting and multiple reviews can support this initiative.

As part of the permitting process, municipal staff such as zoning, code, and inspection officials should be provided with training to make the administrative processes easier and streamlined. As discussed below, the municipality should adopt a solar-friendly ordinance that sets standards for height setbacks, and aesthetics for solar installations. Arbitrary standards such as color and glare should be avoided. Permitting processes should also be evaluated to ensure consistency and compliance with the ordinance. Simplifying and lowering the permitting fees should also be visited. Updates to permitting processes should be posted online (see Initiative 2.2).

The municipality should also consider requiring pre-wiring for photovoltaic solar panels in new construction in order to enable future building owners to easily install the panels – this would serve as cost savings and less hassle for future owners and developers.

Adoption of solar friendly ordinance will need to be compatible with the master plan. It may be necessary to make amendment to the master plan to strengthen the policy foundation for the proposed solar ordinance.[55] [56]

Level of Priority: High

Initiative Lead/Departments Involved: Planning Board, Governing Body, Municipal Staff (Planning/Zoning, Board Secretary, Township Clerk), Consultant(s) (if any).

Potential Stakeholders: Resident organizations (HOAs), Solar Developers, Local businesses/business associations

Anticipated Timeframe: Drafting the ordinance is estimated to take about 4 to 6 months and another 4 to 6 months to establish and streamline the permitting process. These two efforts can be pursued simultaneously, and each will involve staff in multiple departments.

Anticipated Costs and Funding Resources: Adopting a supportive solar ordinance and an amending permitting fees ordinance requires minimal costs for the municipality. The primary cost will be the time of the professional staff required to draft and implement the ordinance. Limited staff time, attorney review, and professional consulting may be necessary for the drafting of the ordinance. Small costs may also be incurred to print and distribute informational materials about the new ordinance. Code enforcement may require an increase in staff time to ensure compliance.

Recommended Actions/Next Steps:

Solar and Fee Ordinance – a solar and fee ordinance by utilizing the Sustainable Jersey's Guidance for Creating a Solar Friendly Zoning Ordinance[56] as a template. This step will involve appointing a team, municipal staff, or hiring a consultant to evaluate the existing zoning ordinance and regulations and draft the solar ordinance. The following items should be carefully considered when adopting a solar ordinance:

- Clear definitions of solar components
- Permit small solar arrays in all land-use zones and consider them accessory usage
- Remove aesthetic restrictions
- Reduce permitting fees and requirements (while maintaining adopted construction and safety codes)

[55] Sustainable Jersey, Make Your Town Solar Friendly, June 2017, https://www.sustainablejersey.com/actions/?type=1336777436&tx_sjcert_action%5BactionObject%5D=559&tx_sjcert_action%5Baction%5D=getPDF&tx_sjcert_action%5Bcontroller%5D=Action&cHash=822bb5ce17093b2bcc3478e04fab4104

[56] Sustainable Jersey, Guidance For Creating a Solar Friendly Ordinance, April 2017, https://www.sustainablejersey.com/fileadmin/media/Actions_and_Certification/Actions/Make_Your_Town_Solar_Friendly/Guidance_for_Creating_a_Solar_Friendly_Ordinance_V.1_April_2017.pdf

- Account for changing technologies by regulating installations based on impact and size rather than kilowatt production.

It is recommended that the solar ordinance be adopted as its own rather than try to fit it into the existing ordinance. The new ordinance can include supplemental regulations, such as height, setbacks, impervious coverage, that would apply just to solar energy systems while providing site standards to ensure compatibility with adjacent land uses. The ordinance should not simply designate solar energy systems as accessory use, as existing regulations for accessory uses may be restrictive.

Master Plan Review – Review municipal master plan to ensure compliance between proposed solar ordinance and existing planning goals and policies.

Permitting requirements and checklist – Post permit requirements and checklist for solar installation online (see Initiative 2.2).

2.2 Post Solar Permitting Checklist

Permitting checklist and standards for solar developers (for both residential and commercial solar) should also be developed when adopting supportive zoning ordinance. These standards and permitting checklist should be easily found on the municipality's website. Making permitting online available can make it more convenient, easily accessible, and minimize the number of trips to drop off applications in person. At the inception of establishing permitting processes and checklist for solar, the municipality should solicit feedback from users and revise checklists based on comments. This initiative may be completed concurrently with Initiative 2.1.[55]

As part of the permitting process, municipal staff such as zoning, code, and inspection officials should be provided with training to make the administrative processes easier and streamlined.

Level of Priority: High

Initiative Lead/Departments Involved: Zoning/planning department, code/building officials

Potential Stakeholders: Resident Organizations (HOAs), solar developers, local businesses/business associations

Anticipated Timeframe: Drafting the ordinance is estimated to take about 4 to 6 months (see Initiative 2.1) and another 4 to 6 months to establish and streamline the permitting process. These two efforts can be pursued simultaneously, and each will involve staff in multiple departments.

Anticipated Costs and Funding Resources: Adopting or amending permitting checklist requires minimal costs for the municipality, as existing resources, such as the municipality's website, can be

utilized. If the municipality intends to hire a consultant to both draft the solar ordinance and checklist, there will be some costs incurred for such an approach, as previously described in Initiative 2.1.

Recommended Actions/Next Steps: An online solar permit checklist should be developed. The Solar Permitting Checklist by Interstate Renewable Energy Council (IREC)[57] may be used as a template to develop the checklist. Such checklists should detail all the plans and forms required for approval and system design requirements, and sequential steps of the permitting process and inspections that follow. Solicit feedback on how to improve the permit checklist after a few weeks or months and make improvements as needed.

2.3 Adopt Zoning and Permitting for Community Solar

Community solar is another tool that the municipality can bring to its residents. This tool provides an opportunity for those who cannot install solar panels on their own building or residence that may be due to site issues, cost, or other issues. Community solar projects offer benefits to the municipality such as workforce development and potential development of difficult sites like landfills.

In a community solar project, any utility customer can sign up as a participant to a solar installation sited elsewhere (such as on a landfill, municipal building, church, recreation center, commercial building, warehouse, etc.). These customers can then receive credit on their utility bill for the electricity created by the solar panels. Community solar can benefit the whole community in numerous ways, including:

- Expanding access to solar in the community, including for low- and moderate-income (LMI) residents
- Reducing energy costs for residents, businesses, and/or for government operations
- Increasing municipal income by leasing available rooftop, parking lot, or landfill space for solar installations
- Producing clean energy locally
- Creating local jobs and/or providing local workforce development
- Creating positive development on difficult sites, such as brownfields and landfills

Municipal support for community solar projects not only makes the community more attractive to community solar developers, but also enables the municipality to set project parameters so that there are clear benefits to LMI residents.

[57] Interstate Renewable Energy Council (IREC), March 2013, A Guide to Preparing Solar Permitting Checklists, https://irecusa.org/resources/a-guide-to-preparing-solar-permitting-checklists/ d

An update to the municipal zoning ordinance to specifically allow large-scale solar projects is necessary and designation of future community solar sites as redevelopment zones should also be considered. Offering direct assistance with permitting, expediting the permitting process, and/or reducing permitting fees for community solar should be considered. The municipality may consider appointing a municipal staff point-of-contact regarding this initiative.[58]

Level of Priority: High

Initiative Lead/Departments Involved: Planning Board, Governing Body, Municipal Staff (Planning/Zoning, Board Secretary, Township Clerk), Consultant(s) (if any).

Potential Stakeholders: Community solar developers, community solar site hosts, LMI housing developers/managers

Anticipated Timeframe: Drafting the ordinance is estimated to take about 4 to 6 months and another 4 to 6 months to establish and streamline the permitting process. These two efforts can be pursued simultaneously, and each will involve staff in multiple departments.

Developing criteria in a community solar project will involve soliciting input from community organizations or stakeholder meetings. This process can take several weeks. Community outreach and educational campaigns can take between 4 to 6 months.

Anticipated Costs and Funding Resources: Adopting a supportive ordinance for community solar may require minimal costs for the municipality. The primary cost will be the time of the professional staff required to draft and implement the ordinance. Limited staff time, attorney review, and professional consulting may be necessary for the drafting of the ordinance. Small costs may also be incurred to print and distribute informational materials about the new ordinance. Code enforcement may require an increase in staff time to ensure compliance.

The cost of doing a community outreach campaign/program can be minimal if strategic use of existing resources is made such as municipal leaders, email distribution lists, municipal website, and social media outlets. If the municipality decides to issue a solicitation for proposals, such as RFPs, project costs will include the administrative costs associated with that process.

Recommended Actions/Next Steps: The municipality must start with an assessment of its own local regulations. The zoning ordinances may need to be updated to specifically allow for large scale solar projects, including ground mount arrays and commercial rooftop installations. This initiative to adopt a zoning ordinance and permitting checklist for community solar coincides with Initiative 2.1.

[58] Sustainable Jersey, Municipally Supported Community Solar, March 2023, https://www.sustainablejersey.com/actions/?type=1336777436&tx_sjcert_action%5BactionObject%5D=580&tx_sjcert_action%5Baction%5D=getPDF&tx_sjcert_action%5Bcontroller%5D=Action&cHash=ef11253f61f0f0c7f9d2b9cbbff22eeb

Therefore, Sustainable Jersey's Guidance for Creating a Solar Friendly Ordinance[59] should be utilized here as well. The municipality should consider the following when drafting the ordinance:

- Clear definitions of solar components
- Permit small solar arrays in all land-use zones and consider them accessory usage
- Remove aesthetic restrictions
- Reduce permitting fees and requirements (while maintaining adopted construction and safety codes)
- Account for changing technologies by regulating installations based on impact and size rather than kilowatt production.

Additionally, the municipality may ease project development time and costs by designating the site of a community solar project as a redevelopment zone. Areas feasible for community solar projects can be outlined in the zoning ordinance or regulations, along with identifying/qualifying criteria for community solar projects.

2.4 Train First Responders on Solar

To further public confidence and maintain emergency preparedness, training on solar infrastructure for first responders should be required. Firefighters need training to respond swiftly and safely to a fire where solar technology is present.

Regular solar PV training, at least every few years, is a best practice to ensure firefighters and first responders are up to date on new procedures, codes, and products within the solar industry. While fires caused by rooftop solar PV systems are rare, firefighters responding to fires caused by other means need to take special precautions when a solar PV system is present. Training fire safety staff on how to identify and avoid potential hazards can help ensure the safety of first responders and reduce misconceptions or discomfort around increased solar deployment.

Level of Priority: High

Initiative Lead/Departments Involved: Emergency Management, Police, and Fire

Anticipated Timeframe: First Responder Training can take between 1 to 2 months.

[59] Sustainable Jersey, Community Solar: Sustainable Jersey, How-to Guide, https://www.sustainablejersey.com/fileadmin/media/Actions_and_Certification/Actions/Municipally_Supported_Community_Solar/Sustainable_Jersey_Community_Solar_Guidebook.pdf

Anticipated Costs and Funding Resources: This initiative will require municipal staff time. Costs for participating in course training/program should be budgeted.

Recommended Actions/Next Steps: Online training courses should be considered. The Interstate Renewable Energy Council (IREC)[60] provides online training courses for firefighters, such as the "Solar PV Safety for Fire Fighters". Kean University's Fire Safety Training Program[21] also offer courses to firefighters on handling solar systems.

Train fire and safety staff on specific plans and procedures for responding to an emergency at a large-scale solar PV system within the jurisdiction. This may include a walk-through of the site, coordinated with the project's owner/operator.

It may also benefit the municipality to share site specific solar PV and/or solar and storage permit data, such as location, with first responders and their departments. This would allow first responders advanced knowledge about homes or businesses that have on-site solar and allows them to develop a plan before arriving on site.

2.5 Train Non-Emergency Staff on Solar

To ensure municipal staff can efficiently and effectively inspect, review, and permit solar installations in the community, training on solar infrastructure, including new procedures, codes, and products, for all relevant staff should be established. Well-trained staff and completed permit applications can reduce staff time needed to review permits, which allows them to focus on other priorities. Regular solar training should be considered to ensure field inspectors are up to date on new procedures, codes, and products within the solar system industry. Increased and maintained staff knowledge can improve inspection efficiency.

Cross-training between building, zoning, inspection, and permitting staff should be considered to wholistically increase the understanding for the technology, its installation, and safety issues. Training for other relevant departments should be considered.

Level of Priority: Medium/Low

Initiative Lead/Departments Involved: Code Enforcement, Inspection Officials, Building/Zoning Staff

Potential Stakeholders: Neighboring municipalities, local unions

Anticipated Timeframe: Training non-emergency staff can take between 1 to 2 months.

[60] Interstate Renewable Energy Council (IREC), https://www.irecusa.org/

Anticipated Costs and Funding Sources: This initiative will require municipal staff time. Costs for participating in course training/program should be budgeted.

Recommended Actions/Next Steps: Require staff to attend workshops or training (in-person or online) and provide resources designed to help keep staff informed about advances in solar and storage technologies. Develop a policy for ongoing staff training that outlines the permitting processes and requirements, including changes or updates thereof, as well updates to state-level policies and building and electrical codes.

Programs within SolSmart [61], a national designation and technical assistance program, can be utilized for staff training and workshops. Other training resources and programs are also available, including the IREC Online Interactive Solar Training Course for Local Code Officials[62], NJDCA Division of Codes and Standards[63], Kean University Fire Safety Training Program[21], Rutgers Center for Government Services Continuing Education Seminars[64], and Solar Simplified Solar PV Code Trainings and Resources[65].

2.6 Install On-site Municipal Renewable Generation

Within this initiative, the municipality has the option to install its own renewable energy generation on-site. These projects can be leased from a developer or purchased and owned outright. The benefit for the municipality is that it can offset facility electricity consumption. Many municipalities hire an energy consultant to explore opportunities for siting a solar system. Municipalities' roles are to lead by example. Installation of on-site renewable energy projects can serve as demonstration to neighboring municipalities and counties.

The municipality should establish a contract with a developer to buy or lease a renewable energy (solar, wind, or geothermal) installation on municipal property. The benefits of renewable energy to the community should be demonstrated through an outreach campaign.[66]

Level of Priority: Medium/Low

[61] SolSmart, https://solsmart.org/our-communities

[62] IREC Online Interactive Solar Training Course for Local Code Officials, https://irecusa.org/blog/irec/new-online-interactive-solar-training-for-local-code-officials/

[63] NJDCA Division of Codes and Standards, https://www.nj.gov/dca/divisions/codes/

[64] Rutgers Center for Government Services, https://cgs.rutgers.edu/

[65] SolSmart, National Simplified Solar Permitting Guide, https://solsmart.org/solar-permitting

[66] Sustainable Jersey, Municipal Onsite Solar System, March 2022, https://www.sustainablejersey.com/actions/?type=1336777436&tx_sjcert_action%5BactionObject%5D=108&tx_sjcert_action%5Baction%5D=getPDF&tx_sjcert_action%5Bcontroller%5D=Action&cHash=16913a7bb55efb97159fb18f70a7d6f2

Initiative Lead/Departments Involved: This initiative would typically involve representatives from departments involved zoning/planning, engineering, and finance/budget, as well as the governing body and consultants (if any).

Potential Stakeholders: Renewable energy developers, local media, public school districts, neighboring municipalities/counties,

Anticipated Timeframe:

Solar System – The planning, approval, and procurement process for municipal solar PV project can take about a year. The installation will take additional weeks, depending on project size. Inspections and interconnection approval by the NJBPU and electric utility will typically require another few weeks. Installing solar thermal is generally a quicker process than installing solar PV, as it is less complex with regard to interconnecting with the grid and obtaining financing. Such projects can be completed in less than 2 months.

Wind Energy System – A wind energy project will take approximately between 2 to 3 years. This timeline will include site assessment, which will take at least about a year, as a study to monitor wind speeds must be completed. Design and construction will take another year (at least). Lead time for purchasing turbines may be necessary.

Geothermal Energy System – geothermal projects can take at least 6 months for site planning and contracting bidding and several weeks for installation. Significant lead time should be dedicated to secure financing.

Anticipated Costs and Funding Sources:

Solar Energy System – As of October 2022, the average solar panel cost in New Jersey was $2.89 per watt (W) or $2,870 per kilowatt (kW). Given a solar panel system size of 5 kilowatts (kW), an average solar installation in New Jersey ranges between $12,282 to $16,618, with the average gross price for solar in New Jersey at $14,450.

Other significant cost factors include the system type (roof, ground, or canopy) and the size of the system. Typically, solar canopies are more expensive than ground or roof mounted solar arrays of identical capacity. For all system types, cost effectiveness typically scales with project size, wherein large projects on municipal property are likely cheaper per watt than small residential projects. In general, prices range from $110,000 for a small, roof mounted array to upwards of $4 million for a large car canopy. In contrast to solar PV systems, solar thermal systems generally cost less than $10,000. Due to its efficiency, a few solar thermal panels can be sufficient for a municipal.

Wind Energy System – For a small wind system, it will cost between $3,000 and $5,000 per kilowatt of capacity. A 100-kW system could provide enough energy for a medium sized building for approximately $400,000.

Geothermal Energy System – Pricing for a geothermal heat pump can vary depending on the building size and design of the energy system. Unlike conventional HVAC systems, while it requires larger upfront costs, geothermal heat pumps have lower lifetime costs.

The New Jersey Clean Energy Programs, such as Local Government Energy Audit, Direct Install, and Pay for Performance programs, can provide funding for whole-building energy improvements, which could include the installation of geothermal systems. NJ SmartStart Buildings[67] is another Clean Energy Program that offers an equipment incentive for Ground Source Heat Pumps of $450-750 per ton. Financial assistance may also be available from the local electric utility.

Alternative to expending capital budget, municipalities can participate in the Energy Savings Improvement Programs (ESIPs)[68], which is a program that allows municipalities to undertake facility upgrades with minimal up-front expenditures. The ESIP finances building improvements through energy savings obligations either through refunding bonds or lease-purchase agreement. Using either mechanism, the municipality does not pay the installation costs up front but instead budgets the energy savings to pay off the bond debt or to make lease payments. Under this program, the facility upgrade process can be managed directly by municipal staff or through an Energy Service Company (ESCO)[69].

Recommended Actions/Next Steps:

Create a Project Team – The first step will be to determine whether to hire an energy consultant to explore opportunities for siting a renewable energy project on-site and identify purchasing or leasing options. Hiring a consultant will require minimal work from the municipality. However, the municipality should provide support by gathering support from municipal leaders and obtaining necessary reviews and approvals, as well as understanding the process for procurement and construction for such projects. Alternatively, the municipality can appoint a staff member to coordinate the initial planning.

Site selection – The project team should identify potential hosting sites for the on-site renewable energy system by conducting a site assessment. Below are some things to consider:

For solar, roof mounting is generally the cheapest option, but it can also be installed on a suitable open space (i.e., ground-mounted array) or on a parking lot shade structure. Optimal locations are areas that receive direct sunlight with little to no shading, with southern exposure and are near a point of interconnection (i.e., near a utility meter). Consider visibility as well to help promote this initiative and facilitate adoption. Solar thermal system is most feasible in buildings with high hot water usage, such as fire stations and community recreation centers.

[67] New Jersey Board of Public Utilities: Clean Energy Program, SmartStart Buildings, https://www.njcleanenergy.com/commercial-industrial/programs/nj-smartstart-buildings/nj-smartstart-buildings

[68] New Jersey Board of Public Utilities: Clean Energy Program, Energy Savings Improvement Program (ESIP), https://www.njcleanenergy.com/ESIP

[69] Department of Energy: Federal Energy Management Program, Energy Service Companies, https://www.energy.gov/femp/energy-service-companies

For geothermal systems, the municipality should consider incorporating geothermal technology into new construction. A geothermal heat pump can also be retrofitted to existing buildings.

For wind energy systems, consider sites with regular winds and at least 30 feet of clearance above structures or treetops. Sustainable Jersey recommends that a one-year study of potential hosting sites be conducted to determine the energy system's feasibility.

In partnership with Rowan and Rutgers Universities, the NJ Office of Clean Energy offers free measurement tools to assess the wind potential prior to installing small wind generating equipment through the New Jersey State Based Anemometer Loan Program[70], a program funded by the Department of Energy Wind Powering America Program.

Select Ownership Model – The municipality should determine whether to purchase the on-site renewable energy system outright, similar to a capital improvement project, or finance the project through power purchase agreement (PPA)[71].

Outreach and Educational Programming – The municipality should use the on-site renewable energy systems as an opportunity to educate the community about energy efficiency and clean energy, while simultaneously promoting the municipality's investment to reduce energy costs and GHG emissions. The following outreach initiatives should be considered:

- Educational signage in the facility.
- Incorporate renewable energy systems technology in local school curriculum.
- Tours, lectures, or training workshops about renewable energy systems.
- Provide renewable energy systems information and resources on the municipality's website.
- Renewable energy systems brochures and newsletters for homeowners or businesses.
- Outreach partnerships with renewable energy systems professionals.
- Incorporate renewable energy systems into a green job training program.

[70] New Jersey Board of Public Utilities: Clean Energy Program, Anemometer Loan Program, https://www.njcleanenergy.com/renewable-energy/technologies/wind/small-wind-systems/anemometer-loan-program

[71] According to the US Department of Energy (DOE), "Power Purchase Agreement (PPA) is an arrangement in which a third-party developer installs, owns, and operates an energy system on a customer's property. The customer then purchases the system's electric output for a predetermined period. A PPA allows the customer to receive stable and often low-cost electricity with no upfront cost, while also enabling the owner of the system to take advantage of tax credits and receive income from the sale of electricity. Though most commonly used for renewable energy systems, PPAs can also be applied to other energy technologies such as combined heat and power (CHP).";
https://betterbuildingssolutioncenter.energy.gov/financing-navigator/option/power-purchase-agreement

2.7 Buy Renewable Electricity for Municipal Facilities

Purchasing renewable energy, such as solar, wind or geothermal, for public facilities or school districts can further increase the demand for renewable energy. The municipality can purchase renewable energy directly from an energy supplier or participate in a buying pool that has renewable energy. Buying pools are typically offered by commercial entities and local cooperatives and does not typically involve additional work for municipal staff. Some of the most popular options in the state are the New Jersey Sustainable Energy Joint Meeting (NJSEM)[72] and Alliance for Competitive Energy Services (ACES)[73].

This initiative encourages the municipality to purchase clean energy if on-site renewable generation constraints are present. Additionally, this initiative can also be considered when the on-site renewable generation provides only a fraction of total electricity needed, and the balance is provided through a third-party supply purchase that includes renewable energy as well.[74]

Level of Priority: Medium

Initiative Lead/Department Involved: This initiative would typically involve representatives from departments involved zoning/planning, engineering, and finance/budget, as well as the governing body and consultants (if any).

Potential Stakeholders: Energy consultants, energy buying pool (i.e., NJSEM, ACES)

Anticipated Timeframe: Purchasing renewable energy can vary widely, depending on leadership support or if any obstacles are present. With no obstacles and support, it can take between 1 and 3 months. With little to no support or where public contracting may be required, it can take as long as a year.

Anticipated Funding Sources: Other than staff expenses associated with the procurement and contracting, there are typically no costs to join an aggregation buying pool, or to contract directly with a third-party supplier.

Recommended Actions/Next Steps: The municipality will need to determine whether to directly purchase green energy from third party suppliers or join an aggregation pool. With third party supply contracts, the municipality should consider a renewable content that is higher than the current Renewable Portfolio Standard (RPS)[75], at the time the energy contract is executed. In many cases,

[72] New Jersey Sustainable Energy Joint Meeting (NJSEM), https://www.njsem.org/HOME

[73] Alliance for Competitive Energy Services (ACES), https://www.aces-nj.com/

[74] Sustainable Jersey, Buy Electricity From A Renewable Source, March 2019, https://www.sustainablejersey.com/actions/?type=1336777436&tx_sjcert_action%5BactionObject%5D=535&tx_sjcert_action%5Baction%5D=getPDF&tx_sjcert_action%5Bcontroller%5D=Action&cHash=26191e652dfff8b6026607021abb166d

[75] According to the US Energy Information Administration "renewable portfolio standards (RPS), also referred to as renewable electricity standards (RES), are policies designed to increase the use of renewable energy sources for electricity generation. These policies require or encourage electricity suppliers to provide their customers with a

municipalities prefer to participate in an aggregated energy buying pool, rather than procuring independently. The approach of participating in a buying pool reduces the amount of work required by the municipality. Buying from a buying pool will typically involve forming a project team that will promote and work on this project, including engaging municipal staff and leadership and executing the procurement process.

2.8 Institute a Community-Wide Solar Purchasing Program

Solar purchasing program, also referred to as *Solarize campaign*, can further support the use of solar in the municipality. Within this program, the municipality can partner with solar installers or a solar marketplace to offer special pricing on solar installations to residents and/or businesses for a limited time. Establish the partner solar installer(s) and special pricing via an RFP process, then advertise the offering to the community. Alternatively, partner with a competitive online solar marketplace to offer residents a custom online webpage to receive quotes.[76]

While the solar purchasing program is typically led by the municipality, community volunteers oftentimes organize the efforts in marketing, administration, and outreach for this program. In this case, the municipality would provide support and participate in the campaign.

Outreach and education campaigns are a crucial component of this initiative. Community-wide outreach campaigns should be conducted through multiple marketing channels or social media outlets. Local leadership support for this campaign is significant and lends credibility to the program.

Level of Priority: Medium/Low

Initiative Lead/Departments Involved: This initiative should involve representatives from communications, finance/budget,

Potential Stakeholders: Resident organizations (HOAs), local businesses/business associations, local solar developers, local media, service organizations, financial institutions, affordable housing advocates, job training centers, and other community organizations

Anticipated Timeframe: Developing an outreach strategy and gathering support for the program will typically take 2 to 3 months. Public education and outreach should be an ongoing effort during the span of the program. An additional 2 to 3 months prior to the launch of the public outreach

stated minimum share of electricity from eligible renewable resources.”; https://www.eia.gov/energyexplained/renewable-sources/portfolio-standards.php#:~:text=Renewable%20portfolio%20standards%20(RPS)%2C,energy%20sources%20for%20electricity%20generation.

[76] US Department of Energy, The Solarize Guidebook: A community guide to collective purchasing of residential PV systems, May 2012, https://www.nrel.gov/docs/fy12osti/54738.pdf

campaign will be required if the municipality is selecting one or more installers for the program through an RFP process.

Anticipated Costs and Funding Resource: Related costs will include the time required for professionals to manage the RFP process. Administrative time will also be required for the tracking of contacts from interested residents and businesses and following each customer's lead throughout the process. However, the cost of outreach and educational campaigns can be minimal if existing resources are used such as social media, email distribution lists, the municipal website, and newsletters. Creation of signs, banners or flyers may need to be budgeted. If providing incentives, such as waiving permitting fees, can also incur some costs to the municipality.

Recommended Actions/Next Steps:

Select Solar Installer(s) - The municipality should consider developing a local community committee or project team who will be responsible for selecting solar installers. The process of selecting installers may require legal and technical expertise. Local solar installers should be considered.

Community outreach – The outreach campaign can be tailored to specific community stakeholders, such as HOAs, developers, solar installers, financial institutions, business associations, affordable housing advocates, job training centers, and other community organizations. Workshops and informational sessions should be made part of the outreach campaign. It would be beneficial for the municipality to create a webpage to promote this campaign. The webpage should include solar-related information, including solar job training opportunities and benefits of solar.

2.9 Implement Renewable Government Energy Aggregation (R-GEA)

Renewable energy procurement can be difficult for individual consumers. It can also be very costly, complicated, and comes with uncertain risks, resulting in less consumers participation. Municipal aggregation programs can address these issues and make renewable energy available to the community through large-scale purchase. Within Renewable Government Energy Aggregation (R-GEA), the municipality makes a large-scale purchase of electricity for the entire community, allowing for easier consumer access.

With the creation of the R-GEA program, the municipality can make renewable energy available to residents or businesses at a lower cost through simplified purchasing arrangements. In many cases, both cost savings and increased renewable content can be realized simultaneously. R-GEA can be an efficient and convenient way to encourage renewable energy adoption within the community; it can also reduce energy cost through large-scale purchasing; it can build community trust, as this large-scale purchasing is made through an open and transparent process; and increases the demand for renewable energy and reduces GHG emission and dependency on fossil fuel energy.

Community outreach will be an important part of R-GEA implementation, especially during the initial stages. The Sustainable Jersey R-GEA Guidebook should be used as a resource for community outreach. The municipality should be aware that including renewable energy content within a GEA is more challenging. Strong community and leadership support and engagement is necessary for a successful R-GEA program within the community. Hiring an energy consultant for this project is strongly encouraged, as they can advise on renewable energy specifications, carry out the RFP process, and complete most of the work associated with the R-GEA implementation.

It is obligatory for the municipality to negotiate the third-party contract on behalf of the residents. The municipality should negotiate for a supply with content that is more sustainable, which is often less costly, with better and more secure terms.[77] [78]

Level of Priority: Low

Initiative Lead/Departments Involved: This initiative should involve representatives from the green team (if any), municipal leadership, business administrator, procurement/finance/budget, and the governing body. An R-GEA consultant should be engaged for this process.

Potential Stakeholders: Community groups, resident and community organizations, business owners, local businesses/business associations, energy consultants, neighboring municipalities, local media

Anticipated Timeframe: Passing the R-GEA ordinance and engaging the consultant can vary, but the typical timeline is between 3 to 6 months but can be longer if there is significant public discussion or if more public support is needed. Of course, if the municipality has completed its research with significant public support, passing the ordinance, selecting a consultant, and consultant contracting work, this portion can conclude quickly. Once a consultant is hired, it will take approximately 6 months to complete the implementation portion of this action. Completion of this project is deemed when a third-party supply contract has been awarded.

The municipality should keep in mind that it is possible for the timeframe to run longer if there is volatility in the energy markets. The R-GEA consultant may decide to postpone going into the market for a supply contract to maximize savings.

Anticipated Costs and Funding Resource:

Other than the administrative time with the ordinance and staff time to engage the energy consultant, the costs for the municipality for implementing an R-GEA is typically low. According to Sustainable

[77] Sustainable Jersey, How-To Guide: Renewable Government Energy Aggregation, August 2019, https://www.sustainablejersey.com/fileadmin/media/Actions_and_Certification/Actions/Energy/SJ_Guidebook_RGEA_V2.pdf

[78] Sustainable Jersey, Renewable Government Energy Aggregation, April 2022, https://www.sustainablejersey.com/actions/?type=1336777436&tx_sjcert_action%5BactionObject%5D=517&tx_sjcert_action%5Baction%5D=getPDF&tx_sjcert_action%5Bcontroller%5D=Action&cHash=a97b09f5ddf81ba62b4e3c3040e52e2d

Jersey, the energy consultant's fees are typically reflected in a kilowatt-hour (kWh) based fee added to the winning supplier's price. The fee is paid by the supplier directly to the energy consultant. The municipality, therefore, does not spend money to make use of the energy consultant's services.

Municipal staff time will also be required when approving the consultant's work plan and schedule. Their presence at public outreach sessions that will typically be run by the consultant is encouraged. The municipality should also consider creating a page within the municipal website to inform the public about the municipality's plan for an R-GE and its implementation processes, as well as gather feedback and public comments.

Recommended Actions/Next Steps:

The governing body must initiate the first step of the process, including directing the appropriate staff to hire an energy consultant. Once the energy consultant is selected, the municipal governing body must pass an authorizing ordinance. The municipality may use the template ordinance (see Appendix) for establishing the R-GEA program and RFP template developed (see Appendix) by Sustainable Jersey. Once the energy consultant is selected, they will be expected to complete the following work related to implementing the program:

- Conducting outreach to residents and businesses
- Assisting in passing the required ordinances to create an aggregation entity (this may happen before an energy consultant is hired)
- Interfacing with the local utility including collecting all utility usage information
- Designing and creating bid documents for prospective energy suppliers
- Reviewing all required documents with BPU and Ratepayer
- Running an RFP process to solicit bids, evaluating bids
- Analyzing and making recommendations, and awarding of bids
- Providing customer support for the term of the contract (i.e., answering questions, managing subsequent opt-ins and opt-outs, and resolving billing issues).

The municipality should consider a renewable energy content that is higher than the current Renewable Portfolio Standard (RPS)[75] at the time the supply contract is procured.

Municipal staff should keep the public informed on this program by making information available on the municipality's website.

2.10 Host a Community Solar Project on Municipal Property

Within this initiative, the municipality hosts a community solar project on municipal properties, such as parking lots, garages, or landfills. Most municipalities lease the site to the developer or enter into a power purchase agreement (PPA) with the developer to buy the electricity at a reduced rate. Community solar provides an opportunity for residents who are interested in renewable energy but cannot install solar panels on their own property. This approach also provides low- and moderate-income (LMI) residents access to the benefits of solar energy while reducing energy costs.

The municipality should establish a community criterion for municipally supported community solar projects, which can be done through resolution or solicitation for proposals.

Level of Priority: Medium/Low

Initiative Lead/Departments Involved: This initiative would typically involve representatives from zoning/planning, engineering, and finance/budget, as well as the governing body and consultants (if any).

Potential Stakeholders: Community solar energy developers, local media, public school districts, neighboring municipalities/counties, neighborhood/resident/community associations

Anticipated Timeframe: Developing criteria for a community solar project can take several weeks, as it involves soliciting input from community organizations and professionals. This timeframe also includes presenting to the governing body to adopt the criteria.

Education and outreach should take place before launching this program, which can take between 4 to 6 months. The duration of the program should be at least 6 months. As part of the outreach, all information should be uploaded to the municipality's website to inform the public, this can take some additional time. Once the program has launched, the webpage should be maintained regularly to ensure up-to-date information is available to the public and increase participation.

If the municipality chooses to select a project/partner for a specific community solar project through RFP, it will generally take at least 2 or 3 months.

Anticipated Costs and Funding Resource:

The cost of outreach and educational campaigns can be minimal if existing resources are used such as social media, email distribution lists, municipal websites, and newsletters. Creation of signs, banners or flyers may need to be budgeted. Reaching out to local media to promote the program and its benefits should be considered.

If the municipality decides to issue an RFP, the project costs will include the administrative costs associated with that process. There will also be associated costs for engineering site assessment of municipal properties for suitability of solar installation projects.

Recommended Actions/Next Steps:

Identify goals and project criteria – The municipality should begin with identifying community goals for the community solar project and develop criteria that will be utilized to evaluate proposals. The criteria can be used as a guidance on whether the municipality will endorse a specific community solar project. Criteria may include how the project would benefit the community, such as benefit to the local workforce development, development of difficult sites such as landfill or brownfields; how the project would encourage participation by LMI residents such as funding incentives; costs and benefits; responsibilities by the municipality; revenue, etc.

Outreach and Educational Programming – The municipality should use this program as an opportunity to educate the community about energy efficiency and clean energy, while simultaneously promoting the municipality's investment to reduce energy costs and GHG emissions. The following outreach initiatives should be considered:

- Educational signage in the facility.
- Incorporate solar energy systems technology in local school curriculum.
- Tours, lectures, or training workshops about solar energy systems.
- Provide solar energy systems information and resources on the municipality's website.
- Solar energy systems brochures and newsletters for homeowners or businesses.
- Outreach partnerships with solar energy systems professionals.
- Incorporate solar energy systems into a green job training program.

Strategy 3: Maximize Energy Efficiency and Conservation and Reduce Peak Demand

To accelerate the transition of our energy system to a 100% renewable energy system, while simultaneously mitigating GHG emissions, energy demand must be reduced through energy efficiency and conservation. The state aims to increase efficiency and accessibility for all residents through outreach and educational campaigns, streamlined procedures, and equitable financing tools. In order to reduce energy demand and maximize efficiency and conservation, facility improvements, technology upgrades, energy benchmarking, and energy management must all be considered.

3.1 Upgrade Energy Efficiency in Municipal Facilities

This initiative directs the municipality to upgrade municipal facilities to be more energy efficient. Making municipal buildings more energy efficient saves taxpayers money while mitigating GHG emission associated with building energy usage. Savings realized from energy efficiency can be utilized to provide more services to the residents.

Installation of more energy efficient technology can also improve the overall wellbeing of the users. For example, upgrading to more efficient lighting and optimized lighting levels can help reduce employee fatigue. Installation of energy efficient heating, ventilation, and air conditioning (HVAC) systems can improve indoor air quality and, thereby, employee productivity. In this case, a survey should be conducted for the municipal staff to understand about the current environment of the municipal facility in question. The survey results should guide the municipality on the type of efficiency upgrades that need to be taken.

New Jersey's Clean Energy Program and electric and natural gas utilities offers incentive programs that guide municipalities through the upgrade process, starting with free audits to establish the most effective measures to reduce energy use. The building efficiency process will typically begin with energy audits. Following implementation, the municipality should showcase the facility energy

upgrades into the community. There are 3 types of energy audits, as defined by the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE):[79] [80]

An ASHRAE Level 1 audit – A site assessment or walk-through audit, which includes a cursory analysis of energy bills and other operational costs related to energy usage and a brief inspection of the building/equipment. This audit will also identify low-cost energy conservation measures (ECMs) that can help facility managers prioritize energy efficiency.

An ASHRAE Level 2 audit – Includes all measures of the Level 1 but with greater detail and goes more in depth on the financial analysis, energy usage, and building/equipment. This is often called an energy survey and engineering analysis audit. Level 2 audit can also identify efficiency measures that are more costly, such as energy management system and HVAC system replacement. An ASHRAE Level 2 audit, such as a Local Government Energy Audit[81], is required to apply for NJCEP's Energy Savings Improvement Program (ESIP)[68]. The ESIP process itself will include an ASHRAE Level 3 or investment grade audit.

An ASHRAE Level 3 audit – This is often referred to as "investment grade" audit, which is a detailed analysis of capital-intensive modifications. It includes all measures of Level 2 and in-depth energy use modeling, recommendations for large-scale energy efficiency improvements, building envelope improvements, and installation of renewable energy system.

The municipality should consider establishing a goal to achieve a 20% annual energy savings for one building and 20% annual energy savings across the municipality's building portfolio.

Level of Priority: High/Medium

Initiative Lead/Departments Involved: Green team, facility managers, procurement/finance/budget, solicitor, governing body, green team,

Potential Stakeholders: Public school district, neighboring municipalities

Anticipated Timeframe: The time required to implement building efficiency measures depends on the size of the municipal building portfolio, the scope and associated procurement requirements, and accessibility of utility data and building information. Energy audits of municipal facilities can range from 2 weeks but can also take up to a year especially when gathering data is difficult. Implementation of energy conservation measures ranges from several months to several years depending on the

[79] CleanBC Better Buildings, What are ASHRAE Energy Audits? https://www.betterbuildingsbc.ca/faqs/what-are-ashrae-energy-audits/#:~:text=ASHRAE%20Level%201%20%E2%80%93%20The%20Level,to%20identify%20glaring%20energy%20problems.

[80] Sustainable Jersey, Energy Efficiency for Municipal Facilities, February 2022, https://www.sustainablejersey.com/actions/?type=1336777436&tx_sjcert_action%5BactionObject%5D=556&tx_sjcert_action%5Baction%5D=getPDF&tx_sjcert_action%5Bcontroller%5D=Action&cHash=a3a54c71e5bd69d8d93cfbcc39be40f4

[81] New Jersey Board of Public Utilities: Clean Energy Program, Local Government Energy Audit, https://www.njcleanenergy.com/lgea

method of implementation and amount and types of measures taken. However, often time the actual construction or installation of the energy efficient system or technology takes up the least amount of time compared to the actual planning, procurement, financing, and approvals process of the project, which will take up majority of the project timeline.

Anticipated Costs and Funding Resource: Municipal staff time will be required to gather data such as building inventory and current energy usage and type. Incentive programs are offered by utility companies and by the New Jersey Clean Energy Program (NJCEP), as described below. These programs can help offset most or all the costs of energy audits. Private energy audit can range from several thousands to tens of thousands of dollars.

The cost of implementation of the energy upgrades can vary widely, depending on the scope and scale of the project. Most municipal energy efficiency projects are eligible for state and utility incentives and financing that can cover most or all of expenses. Some utilities offer 'on-bill' financing, so that the costs of the upgrades can be covered over time on the customer's utility bill. Immediate energy savings often provide cash-neutral or cash-flow positive return while the balance is paid on the utility bill.

Utility Incentive Programs for Existing Buildings:

Direct Install - Provides turnkey energy efficiency solutions for small commercial customers, including local government facilities for municipalities and schools. Includes a free on-site energy assessment, energy efficiency upgrade recommendations, and an incentive of up to 80% of installed cost for completing those recommendations.

Prescriptive Equipment - Offers simple rebates on a wide range of pre-qualified "standard" energy efficiency measures.

Custom Equipment - Offers incentives for energy efficiency measures that do not fall under the Prescriptive Program.

Engineered Solutions - Provides tailored energy efficiency assistance to larger public entities. Includes an investment grade (ASHRAE Level 3) energy audit, engineering design, bid-ready document development, installation vendor selection assistance, construction administration, commissioning, and maintenance and verification services to support the implementation of cost-effective and comprehensive efficiency projects.

Energy Management - Helps identify and implement no and low-cost energy efficiency measures via equipment tune-ups and commissioning.

New Jersey's Clean Energy Program (NJCEP) Incentive Programs

NJCEP incentives for existing buildings:

Local Government Energy Audit (LGEA)[81] – Provides an ASHRAE Level 2 energy audit of local government, New Jersey Colleges and Universities, and 501(c)(3) non-profit entities with buildings that have a peak electricity demand of at least 200 kW.

Energy Savings Improvement Program (ESIP)[68] – Allows government entities to finance extensive energy efficiency retrofits, using the projected savings from the upgrades identified in an LGEA to leverage favorable rates and keep bond debt officially off the books.

Combined Heat and Power (CHP)[82] – Provides incentives for Combined Heat & Power and Waste Heat to Power (WHP) projects with an annual system efficiency of at least 60%, as well as Fuel Cell projects with an annual system efficiency of at least 40%. CHP is particularly effective for high energy use facilities such as wastewater treatment plants and larger school facilities.

NJCEP incentives for new construction, gut rehab, and building addition projects include:

SmartStart New Construction Buildings[83] – Offers fixed, savings-based incentives for energy efficiency equipment.

Customer Tailored Energy Efficiency Pilot (CTEEP)[84] – Offers streamlined process for multiple SmartStart measures (including custom measures) at one or more project locations.

Pay for Performance (P4P)[85] - Offers variable incentives per square foot for commercial and industrial buildings with 50,000 ft^2 or more of planned conditioned space that implement a comprehensive set of energy efficiency measures developed with a program partner. The energy reduction plan must be capable of achieving energy costs below the current energy code (5% below for commercial and industrial and 15% for multifamily).

Recommended Actions/Next Steps:

Conduct an energy audit – The municipality should start with an energy audit of its building portfolio. See the different types of energy audits above.

Energy efficiency implementation – The energy audit will inform the municipality of the types of energy efficiency measures to implement. The incentives mentioned above should be explored to help with the implementation of these measures. The municipality should consult NJCEP or utility staff to determine which program is best suited to their needs.

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[82] New Jersey Board of Public Utilities: Clean Energy Program, Combined Heat & Power, https://njcleanenergy.com/chp

[83] New Jersey Board of Public Utilities: Clean Energy Program, SmartStart New Construction Buildings, https://njcleanenergy.com/smartstart-new-construction-buildings

[84] New Jersey Board of Public Utilities: Clean Energy Program, Customer Tailored Energy Efficiency Pilot (CTEEP), https://njcleanenergy.com/commercial-industrial/programs/cteep

[85] New Jersey Board of Public Utilities: Clean Energy Program, Pay for Performance – New Construction, https://njcleanenergy.com/commercial-industrial/programs/pay-performance/new-construction/new-construction

Outreach and Education – Undertaking municipal building energy efficiency upgrades provides an opportunity for the municipality to trach and promote energy efficiency in the community. The municipality should take this opportunity to describe the process and the results of the energy efficiency upgrades to residents and businesses. Educational signage on the facility, training workshops or tours about the facility upgrade, outreach partnership with neighboring municipalities and energy professionals, and posting the implementation efforts on the municipality's website or newsletters are some examples of outreach initiatives to consider.

3.2 Conduct Energy Efficiency Outreach to Large Energy Users

This initiative directs the municipality to identify and contact large energy users in the community to prompt interest in managing energy use, including participating in utility commercial energy efficiency incentive programs like Engineered Solutions and PJM's Demand Response program.

To generate interest and increase awareness and participation in energy efficiency, the municipality should utilize multiple community-wide means of outreach, including mailings, municipal website posts, social media posts, and public events.

Level of Priority: Medium

Initiative Lead/Departments Involved: Municipal staff, appointed official(s) (i.e., Economic Development Commission member, chamber of commerce, governing body, etc.), communications/marketing, Township clerk

Potential Stakeholders: Chamber of commerce, local businesses/business associations, natural gas/electric utilities, Rutgers University Center for Green Building

Anticipated Timeframe: The planning and execution of the local outreach and education effort can take between 2 to 6 months. However, this will depend on the size of the local business base and the time it takes to get organized.

Anticipated Costs and Funding Resource: Municipal staff time will be required to plan and execute the outreach and education campaign.

Recommended Actions/Next Steps:

Outreach Coordinator – the Borough should establish a position for commercial energy efficiency outreach coordinator. The coordinator will be responsible for putting together workshops to engage and educate about the utility incentive programs. Representatives from NJBPU and other utility companies should be present at the workshop. The coordinator, with support from the Borough, needs to identify the large energy users in the Borough and request their participation in the energy benchmarking program.

Strategy 4: Reduce Energy Consumption and Emissions from the Building Sector

The EMP places special emphasis on reducing GHG emission and improving energy efficiency on the building sector by 2050. Addressing the energy inefficiencies of existing buildings and establishing green standards for new construction, significant reduction on GHG emission and improvement on energy efficiency can be realized.

The primary goals of this state strategy are to (1) start the transition for new construction to be net zero carbon and (2) start the transition to electrify existing oil- and propane-fueled buildings[15]. The established local objectives, as described below, support these state goals.

4.1 Encourage Benchmarking and Commissioning for Existing Buildings

This initiative directs the municipality to educate local building managers about benchmarking and commissioning. Inform building managers of utility building management programs that include benchmarking and/or commissioning.

Energy benchmarking is the process of comparing a building's energy use over time relative to other similar buildings. This process helps building managers prioritize energy efficiency improvement. Energy benchmarking on private buildings can guide outreach campaigns on energy efficiency in the community. As an example, the municipality can utilize benchmarking data to show that particular buildings, i.e., multifamily buildings, in the community are not as efficient as they could be compared to other similar multifamily buildings in other municipalities.

In New Jersey, benchmarking for large commercial buildings (25,000 square feet) is required by law, as the energy efficiency of these buildings has major emissions implications. However, benchmarking is useful for all building types and sizes. Therefore, the municipality can require benchmarking for certain building types and size or encourage voluntary benchmarking. Building owners can use

NJCEP's free Energy Benchmarking[86] program or ENERGY STAR Portfolio Manager[87] to benchmark their buildings.

Commissioning is the process of checking a building's current systems and operations and making non-capital changes that bolster efficiency and performance. Changes such as adjusting temperature settings, modifying HVAC controls to reflect hours of operations, and repairing HVAC equipment. Commissioning is ideally performed prior to initial occupancy of a building, then on an ongoing basis. However, many municipalities may choose to re-commission a building every 5-10 years, as this process requires significant commitment, and it may not be feasible at all times. While in practice commissioning is rarely used, municipalities should make building owners aware of the benefits of commissioning. Energy costs savings from retro-commissioning (commissioning an in-use building for the first time) can provide an average of 16% average reduction.

Municipalities are positioned to encourage or require benchmarking and commissioning and performance information disclosure in their own portfolio of buildings and in private real estate markets.

Level of Priority: Medium

Initiative Lead/Departments Involved: Facility/building managers, communications/marketing,

Potential Stakeholders: Public and private building owners and managers, property managers, real Estate Professionals, Tenants, energy service providers, utility companies, energy and/or environmental departments/boards/commissions

Anticipated Timeframe: The planning and execution of the local outreach and education effort can take between 2 to 6 months. However, this will depend on the size of the local business base and the time it takes to get organized.

Anticipated Costs and Funding Resource:

Municipal staff time will be required to plan and execute the outreach and education campaign. The cost of outreach and educational campaigns can be minimal if existing resources are used such as social media, email distribution lists, municipal websites, and newsletters. Creation of signs, banners or flyers may need to be budgeted. If providing incentives, such as waiving permitting fees, can also incur some costs to the municipality.

According to the Los Alamos National Laboratory Sustainable Design Guide[88], the cost of commissioning depends on several factors, such as building size and complexity, and whether the project consists of new construction or building renovation. In general, the cost of commissioning a

[86] New Jersey Board of Public Utilities: Clean Energy Program, Energy Benchmarking, https://njcleanenergy.com/benchmarking

[87] Energy Star, Portfolio Manager, https://portfoliomanager.energystar.gov/pm/login?testEnv=false

[88] Los Alamos National Laboratory Sustainable Design Guide, Chapter 9: Commissioning the Building, https://www.energy.gov/sites/prod/files/2013/12/f5/sustainable_guide_ch9.pdf

new building range from 0.5–1.5% of the total construction cost. For existing buildings that have not been commissioned, the cost of retro-commissioning can range from 3–5% of total operating cost.

Recommended Actions/Next Steps: Consider implementing benchmarking and commissioning policies, both for public buildings and private buildings, within the municipality's zoning ordinance and regulations.

Public Buildings – The municipality should consider benchmarking its own facilities to track their energy performance over time. It can start with a sample of building(s) that are suspected or known to be large energy users or with poor energy performance or that reflects the municipality's building portfolio. Data collected should include the age, gross floor area, percentage of gross floor area that is heated and cooled, presence of a garage, operating hours, number of computers, and energy and water usage. EPA offers a Portfolio Manager Data Collection Worksheet[89] to help gather necessary data inputs.

Based on the results of the sample of benchmarked building(s), the municipality should develop a policy or a plan to benchmark all public buildings annually. The municipality should consider utilizing a program or software that can automatically transfer utility billing data to the benchmarking software for convenience. The municipality can also elect to make the benchmarking results public to build public awareness and trust. Utilize a benchmarking tool, such as EPA's Portfolio Manager, that can illustrate how the municipality can prioritize the type of energy efficiency measures within its portfolio, including operating efficiency and cost-effective investment opportunities. The cost-benefit data should be documented to determine the return-on-investment on this effort.

Private buildings – The municipality can also influence the private real estate market by adopting mandatory benchmarking regulations. To begin, the municipality should determine whether there is active support in the public and private sectors for this effort. This effort will require engaging key stakeholders such as real estate owners and managers, real estate brokers, tenant organizations, electric and gas utilities, utility regulators, and energy services experts.

In the policy, the type of building, ownership type, and size criteria should be clearly defined, along with the frequency of commission and benchmarking. To have effective and successful results, the municipality will need to have outreach and educational opportunities, as well as provide technical assistance in the processes.

[89] Energy Star Portfolio Manager, Data Collection Worksheet, https://portfoliomanager.energystar.gov/pm/dataCollectionWorksheet

4.2 Require Developers to Complete Green Development Checklist

This initiative directs the municipality to pass a Green Building Policy or Resolution that requires developers to submit a completed Green Development Checklist with Site Plan Applications. Green Building Policy can encourage commercial and residential developers to use green design.

Green design can help manage environmental obligations for the municipality, including the reduction of loadings on stormwater systems and reduction of construction wastes and solid wastes disposal associated with the building's operations and tenants. Green design programs can also promote pedestrian access, community connectivity, wildlife preservation, and green and open space. According to the U.S Environmental Protection Agency (EPA), green design can provide environmental benefits, such as enhancing and protecting ecosystems and biodiversity, improving air and water quality, reducing solid waste, and conservation of natural resources. The economic benefits include the reduction of operating costs, enhancement of asset value and profits, improve employee productivity and satisfaction, and optimization of life-cycle economic performance. The health and community benefits include improving the air, thermal, and acoustic environments, enhance occupant comfort and health, minimize strain on local infrastructure, and contribute to overall quality of life

A Model Green Development Checklist (see Appendix)[90], developed by Sustainable Jersey, can serve as a template in developing the municipality's green development checklist. Adoption of this checklist will also require amending the municipality's ordinance that outlines site plan application submission. The checklist can provide a comprehensive understanding of green design efforts that can increase a site's sustainability and awareness of its impact to the surrounding environment and community.

Level of Priority: High/Medium

Initiative Lead/Who to involve: Governing body, planning board, sustainable committee, environmental Commission, municipal staff (zoning official, construction code official, planner)

Potential Stakeholders: Building trade associations (i.e., USGBC), architects and developers, financial institutions

Anticipated Timeframe: Development and adoption of a Green Development Checklist and enabling ordinance to use in the Planning/Zoning Board application process can take up to 3 months.

Anticipated Costs and Funding Resource: In addition to municipal staff time, additional review fees from legal and planning consultants may be required during the ordinance adoption phase.

Recommended Actions/Next Steps:

[90] Sustainable Jersey, Green Development Checklist, August 2015, https://www.sustainablejersey.com/fileadmin/media/Actions_and_Certification/Actions/Green_Development_Checklist/Model_Checklist_Final_Upload_2015_10_09-final.pdf

Green Building Policy/Resolution – To begin, the municipality should initiate the adoption of Green Building Policy/Resolution for municipal buildings and commercial and residential buildings. See Appendix for a sample resolution developed by Sustainable Jersey.

Model Green Development Checklist – As a component of the Green Building Policy, the municipality should adopt a Model Green Development Checklist. Sustainable Jersey provides a Green Development Checklist guideline to implement this action.

Both the ordinance and checklist should be reviewed by the established project team (if any) or appropriate staff or bords, such as the green team, environmental commission, and review committees for the planning, zoning, and historic boards, and/or planning staff. Gather comments and revise the ordinance and checklist as needed. The resolution should be presented accordingly to the planning board and the governing body for adoption. The adopted policy and checklist should be posted in the municipal website.

4.3 Conduct Outreach Targeting New Construction in the Community

This initiative directs the municipality to reach out to developers to encourage participation in NJCEP's Commercial and Residential New Construction Energy Efficiency programs.

The Residential New Construction[91] program offers incentives and technical assistance to builders of new residential structures (and homes undergoing a complete rehabilitation) that achieve certifications such as ENERGY STAR and Zero Energy Ready (ZER)[92]. Independent third-party inspectors work with the builders to test the home's performance and verify high efficiency.

The Commercial New Construction[93] program consists of three programs with varying scope and potential for savings. The SmartStart Buildings program provides prescriptive and custom incentives for single energy efficiency measures. Developers can submit one application for several eligible measures via the Custom-Tailored Energy Efficiency Program (CTEEP). For construction of buildings with 50,000+ square feet of planned conditioned space, NJCEP offers a comprehensive Pay for Performance program

Level of Priority: Medium

[91] New Jersey Board of Public Utilities: Clean Energy Program, Residential New Construction Residential New Construction, https://www.njcleanenergy.com/residential/programs/residential-new-construction

[92] Energy.gov, Zero Energy Ready Home Program, https://www.energy.gov/eere/buildings/zero-energy-ready-home-program

[93] New Jersey Board of Public Utilities: Clean Energy Program, New Construction Energy Efficiency, https://www.njcleanenergy.com/commercial-industrial/new-construction-buildings

Initiative Lead/Who to involve: This initiative should involve representatives from communications, finance/budget, planning/zoning

Potential Stakeholders: Building trade associations (i.e., USGBC), architects and developers, financial institutions

Anticipated Timeframe: The planning and execution of local outreach effort can take between 1 to 2 months for gathering and compiling information and uploading them into the municipality's website. After establishing information to the public, the municipality should provide ongoing support and outreach efforts to make building owners, designers, architects, and developers aware of the available incentive programs.

Anticipated Costs and Funding Resource: The cost of outreach and educational campaign can be minimal if existing resources are used such as social media, email distribution lists, municipal website, and newsletters. Creation of signs, banners or flyers may need to be budgeted. Reaching out to local media to promote the program and its benefits should be considered.

NJCEP's New Construction Energy Efficiency program provides incentives that support cost-effective, energy efficient design for new construction and substantial renovation (gut rehab) projects. The program offers the following program incentives:

Whole building/Comprehensive: Pay for Performance Program – designed for commercial and industrial, and multifamily buildings with 50,000 square feet or more of planned conditioned space.

Multi-Measure: Customer Tailored Energy Efficiency Program - allows customers to bundle multiple prescriptive and custom measures into a single application without enrolling in a whole-building program. In addition to measure incentives, customers are eligible for technical assistance incentives to help offset soft costs associated with custom measure development.

Single Measure: SmartStart Buildings Program – offers prescriptive and custom incentives for projects addressing individual building systems. Includes fixed dollar amounts for installations of popular technologies with well-established savings, such as gas heating and HVAC, and Custom incentives based on energy savings for non-standard equipment that performs beyond code requirements.

Other Programs: Combined Heat and Power – NJBPU provides financial incentive for combined heat and power (CHP) and fuel cell (FC) installations. This program helps achieve a state goal of enhancing energy efficiency through on-site power generation with recovery and productive use of waste heat and reducing existing and new energy demand.

Recommended Actions/Next Steps: Undertake an outreach campaign to developers, architects, designers, financial institutions, and other professionals in the commercial and residential construction field. The campaign should include providing information on the state's programs and incentives for new construction and the benefits to the community as a whole. The municipality should take this opportunity to describe the processes and benefits of the program. Information should be made available to the municipality's website and promoted in social media and newsletters.

Strategy 5: Decarbonize and Modernize New Jersey's Energy System

NOTE: Strategy 5 is not included as municipalities do not have jurisdiction over grid regulatory issues. Thus, this CEP does not provide any information or actions specific to this strategy.

Strategy 6: Support Community Energy Planning and Action with an Emphasis on Encouraging and Supporting Participation by Low- and Moderate-Income and Environmental Justice Communities

It is important for municipalities to implement policies and procedures that will provide opportunities for low- and moderate income (LMI) residents and communities when planning and implementing transition to renewable energy. Certain sustainable energy initiatives such as home efficiency improvements can be costly. Thereby, providing assistance to LMI residents, along with environmental justice communities, with these efforts will be critical. Municipalities have the responsibility of ensuring a community-wide participation in the community energy planning and implementation to achieve a just sustainable energy future.

Cadmus and USDN's Guidebook on Equitable Clean Energy Program Design[94] identifies economic inequity as a key limitation to household access to clean energy, while still emphasizing the role of social and racial inequities play. The Guidebook introduces 12 key principles that support municipalities and communities in designing and implementing equitable clean energy planning. While implementing the initiatives identified within this Action Plan, the municipality should bear in mind these 12 principles throughout the process:

1. **Listen and respond** – Local governments should first listen to the communities they seek to serve. Program design should be as responsive as possible to the needs expressed by community members, and local government staff should be transparent about their resources. Ideally, this would build from preexisting community connections and engagement, and help define program goals.
2. **Partner with trusted community organizations** – Local governments should work with community organizations to design and deliver programs, and where applicable, help build the capacity of community organizations through the partnership.

[94] CADMUS, A Guidebook on Equitable Clean Energy Program Design for Local Governments and Partners, September 2018, https://cadmusgroup.com/wp-content/uploads/2018/09/Cadmus-USDN-Equitable-Clean-Energy-Guidebook.pdf?hsCtaTracking=e6fb884f-79d2-4cf9-ba28-63c8d5b64bc5%7C0271547b-346d-49a4-83f5-186b13702d8d

3. **Recognize structural racism** – Programs targeting LMI households will not necessarily serve all disadvantaged populations. Racial analysis and baseline data must be part of an inclusive program design process to understand and address structural barriers that exist beyond income.
4. **Efficiency first** – Programs should ensure LMI households can access energy efficiency benefits as a key step to reducing energy burdens and increasing household health and comfort.
5. **Reduce financial burdens** – Programs should not add financial burdens for LMI households and should aim to reduce financial and other burdens.
6. **Increase benefits** – Programs should seek to deliver services beyond clean energy technologies and capitalize on cobenefits, such as job creation or community resilience for people of color, indigenous communities, and other historically underserved and underrepresented populations.
7. **Make it easy** - Program participation should be as easy as possible for any household with effective, efficient, and culturally competent program design, outreach, and delivery.
8. **Integrate with other services** – Wherever possible, programs should align with other services for LMI households.
9. **Protect consumers and workers** – Programs should have carefully considered consumer and workforce protection elements and consumer education to avoid unintended consequences.
10. **Beyond carve-outs** – Programs should do more than set aside a small portion of benefits for LMI households, and where possible, center the needs of LMI households and other historically underserved communities in program design and delivery.
11. **Track progress** – Programs should establish and assess baseline equity data —both quantitative and qualitative —to inform program design, establish metrics, and track progress.
12. **Long-term commitment** – Programs should provide support for LMI households beyond installing clean energy technology, and include structures for helping with technology service, upkeep, and repair.

6.1 Make Community Energy Planning Inclusive

This initiative directs the municipality to ensure low- and moderate-income (LMI) residents or other underserved groups are represented in the energy planning and implementation processes. These groups often lack access to clean energy technologies due to high costs, lack access to credit, and unawareness of available resources or programs.

In addition to notifying underserved communities about the Community Energy Planning process, the municipality should ensure these communities have influence in the process as well – this includes

appointing a representative for these communities to join the project team or group when implementing the initiatives within this Community Energy Plan.

Methods include scheduling meetings at convenient times (varying meeting time if needed), engaging with community organizations that can elevate underrepresented voices, and advertising planning meetings in a variety of media (i.e., social media, newsletters, utility bill notices, newspapers, local media, public meeting announcements, bulletin board announcements, etc.)

Level of Priority: High/Medium

Initiative Lead/Who to involve: Governing body, planning/zoning board, planning/zoning, communications,

Potential Stakeholders: Local media, school district, resident/community organizations, local institutions and businesses, community-serving institutions (faith-based and youth organizations), and housing providers (property owners or managers)

Anticipated Timeframe: It can take between 4 to 6 months to set up all components necessary to make a public engagement meeting successful, such as digitizing appropriate records and materials and posted online, researching appropriate meeting or communication platforms, and identifying appropriate platform(s) or techniques to gather public input.

Anticipated Costs and Funding Resource: The cost of outreach and educational campaign can be minimal if existing resources are used such as social media, email distribution lists, municipal website, and newsletters. The creation of signs, banners or flyers and local media promotion may need to be budgeted.

Recommended Actions/Next Steps:

Begin to identify community needs and gather input about local issues. This can easily be done by attending existing local forums or regular community meetings at environmental justice organizations, community development corporations, tenant associations, or faith-based groups. Accordingly, partner with these community organizations. Communicating and tailoring messages on equity and clean energy will be a critical aspect of engaging the community.

The Guidebook on Equitable Clean Energy Program Design[94] introduces a process and principles for local governments and their partners to use to design equitable clean energy programs in their communities. The Guidebook identifies the following items that can help municipalities structure an equitable clean energy program within their community:

- **Goals:** What municipal sustainability and equity goals does the program seek to achieve?
- **Eligibility:** What target population will the program serve, and how can targeted universalism be a key part of the design? Is the program for homeowners or renters, or both?

- **Context:** What contextual factors should be part of the program design? These include the municipality's utility, geographic, and economic context.
- **Technology:** Which clean energy technologies will be included in the program? This guide discusses household-level access to rooftop and community solar PV, solar+storage, ASHPs, and EVs.
- **Program partners:** What partner organizations are needed to run the program? These organizations may include the utility, community development corporations, financial institutions, nonprofit partners, advocacy organizations, or others.
- **Financing:** What financing mechanisms will the program use?
- **Funding:** What level of funding is needed, and where will the program funding come from?
- **Administrator:** Who will administer the program? Will the local government lead or be in a supporting role to a partner organization?
- **Customer interaction:** How will people access the program? How many households will the program serve? How long will the program last? Will the program support long-term commitments to the community?
- **Supply chain:** In what ways can this program advance equity in the supply chain via workforce development, procurement, or other measures?
- **Consumer protection:** What program elements will be added to ensure protection for LMI households from potential harm or unintended consequences from the program?

After developing an equitable clean energy program, the municipality should establish a program implementation timeline, determine roles and responsibilities and recruit program participants and begin administering the program. The municipality may also consider a pilot program to test the concept and incorporate feedback without expending the full resources required for full-scale implementation.

Potential roles and responsibilities needed for the program include outreach, marketing, finance delivery, home visits and installations, technical assistance, program evaluation, and program management. When recruiting program participants, it is important to consider the following conditions to ensure program participation:

- Residents and/or housing providers are aware of the program – consider time of day for the meetings and location of the meetings (near public transportation, in low- and moderate-income (LMI) communities, centers/facilities where community usually gathers)
- Residents and/or housing providers can envision themselves as part of the program – consider using images in presentations to demonstrate potential visions

- Residents and/or housing providers believe the program's benefit to be worthwhile – consider the spoken language of an area, choice of words, accessibility, and relevancy
- Cost, time, and other barriers to participation are minimal – consider offering different modes of contact

The Guidebook on Equitable Clean Energy Program Design provides for program design/procedural checklist that municipalities can utilize as a guide to developing and implementing equity-oriented clean energy programs. This checklist can be found in pages 73 to 76 of the guidebook.

6.2 Conduct Energy Efficiency Outreach to Low- and Moderate-Income Residents

This initiative directs the municipality to promote state and utility energy efficiency programs for low- and moderate-income (LMI) residents using community-serving institutions as messengers, using non-English promotional materials where appropriate, and emphasizing co-benefits of energy efficiency upgrades (health, safety, and comfort).

According to Sustainable Jersey, homes are significant consumers of energy in New Jersey, accounting for approximately 24% of the annual statewide energy usage. Energy efficiency upgrades can make a home more energy efficient and comfortable. However, energy efficiency upgrades can be costly, which LMI residents may not be able to afford. This action should outline ways for the municipality to help lower energy costs for LMI residents. Doing so will require partnering with community organizations and multiple media to reach the residents and community organizations that serve them. Ensuring LMI residents have access to, and awareness of available programs is a step towards addressing environmental inequities relating to energy and health justice. The municipality will need to include targeted outreach in its campaign to specific entities or organizations serving LMI communities, as, oftentimes, they are not aware of available rebate and incentive programs.

Level of Priority: High/Medium

Initiative Lead/Departments Involved: Municipal coordinator/staff volunteer, elected officials, community members/groups

Potential Stakeholders: NJCEP, Comfort Partners contractors, local utilities, affordable housing owners/managers (public or private), local media, school district, resident/community organizations, local institutions and businesses, community-serving institutions (faith-based and youth organizations), civic associations, food banks, shelters,

Anticipated Timeframe: The preparation to launch a campaign program can take between 4 to 6 months, this includes forming a project team and engaging the community. Forming a project team, including reaching out to NJCEP and utility representatives can take between 1 to 2 months. Engaging

key stakeholders and the residents should take between 4 to 6 months. Once launched, the program should run for at least 6 to 12 months. Preparation should include the time to post information on the municipality's website, which should remain active indefinitely to be most effective at increasing participation rates.

Anticipated Costs and Funding Resource: The cost of outreach and educational campaign can be minimal if existing resources are used such as social media, email distribution lists, municipal website, and newsletters. The creation of signs, banners or flyers and local media promotion may need to be budgeted. The time investment can be significant for this initiative due to the level of engagement it requires to reach a diverse group of residents. Funds for mailings, signage, or other resources needed may be provided by the Comfort Partners contractor.

Assistance Programs for LMI

Utility program resources for residents

- New Jersey Comfort Partners Program[95] – a free energy savings and education program for income-qualified residents.
- Home Weatherization Program for Income Qualified Customers (Moderate Income) – Free energy efficiency assessment for income qualified residents that includes installation of basic energy-saving measures such as air sealing, insulation, and smart thermostats at no charge. These programs are available to households that do not qualify for Comfort Partners but are below 400% of the poverty level.
    - PSE&G
    - Rockland Electric
    - South Jersey Gas
    - Elizabethtown Gas
- The SAVEGREEN Project (New Jersey Natural Gas)[96] – Rebates up to $5,000 and financing up to $15,000 on upgrades to high-efficiency equipment with additional rebates and financing options available to income-eligible customers.
- Gift of Warmth (New Jersey Natural Gas)[97] – a one-time per program year assistance grant sponsored energy assistance program by NJ Natural Gas for LMI households in NJNG territory.

[95] New Jersey Comfort Partners Program, https://www.firstenergycorp.com/save_energy/save_energy_new_jersey/comfort-partners.html#:~:text=The%20New%20Jersey%20Comfort%20Partners,%2D800%2D915%2D8309.

[96] New Jersey Natural Gas, SAVEGREEN, https://savegreenproject.com/homeowners

[97] NJPowerOn.Org, Affordable Housing Alliance (AHA), https://njpoweron.org/

Additional assistance programs

- Lifeline Program[98] – Offers help with utility bills to qualifying disabled persons and senior citizens. To be eligible, customers must be a recipient of Pharmaceutical Assistance to the Aged and Disabled (PAAD) -or meet the PAAD eligibility requirements -or be a recipient of either Medical Assistance to the Aged (MAA), Medical Assistance Only (MAO), or New Jersey Care. There are three Lifeline programs:
    - Lifeline Credit Program: $225 annual benefit in the form of a credit on electric and gas utility bills
    - Tenants Lifeline Assistance Program: $225 annual benefit in the form of a check to customers who have the cost of gas and electric utilities included in their rent
    - Special Utility Supplement Program: supplement of up to $18.75 a month to recipients of Supplemental Security Income (SSI)
- Low Income Home Energy Assistance Program (LIHEAP)[99] – Provides federally funded assistance to households and families with energy costs associated with home energy bills, energy crises, weatherization, medically necessary cooling expenses, and energy-related minor home repairs. To be eligible for the program, applicants must be responsible for home heating or cooling costs and have a gross income at or below 200% of the federal poverty level.
- Universal Service Fund (USF)[100] – helps with energy bill affordability for low-income customers by lowering the amount paid for natural gas and electricity. Households with income at or below 175% of the Federal Poverty Level are eligible and the program has a year-round award period.
- NJ Shares[101] - a non-profit organization that helps with utility bill payments to low-income households. The organization provides payment assistance by providing grants of up to $700 per utility to maintain or restore service.
- Payment Assistance for Gas and Electric (PAGE)[102] – provides relief on gas and electric bills for LMI residents. To be eligible, applicants must have an overdue balance of at least $100 and not have more than $15,000 in liquid assets. Those interested should apply for USF and LIHEAP programs before seeking additional assistance from PAGE. This

[98] New Jersey Department of Human Services - Division of Aging Services, Lifeline Program Summary, https://www.state.nj.us/humanservices/doas/home/lifelinedetail.html

[99] U.S. Department of Health & Human Services, Low Income Home Energy Assistance Program (LIHEAP), https://www.acf.hhs.gov/ocs/programs/liheap

[100] New Jersey Department of Community Affairs (NJ DCA), Universal Service Fund (USF), https://www.nj.gov/dca/divisions/dhcr/faq/usf.html

[101] New Jersey Shares, https://njshares.org/

[102] NJPowerOn.Org, Affordable Housing Alliance (AHA), Payment Assistance for Gas and Electric (PAGE), https://njpoweron.org/page/

program is administered by the Affordable Housing Alliance of New Jersey and is funded by the NJBPU.

- Weatherization Assistance Program (WAP)[103] – a subset of LIHEAP and is designed to assist elderly, handicapped, and low-income residents with home weatherization by improving heating system efficiency and conserving energy through financial grants.
- Winter Termination Program[104] – administered by NJBPU, this program protects eligible customers from gas or electric shut offs between November 15 and March 15 of each year. Households enrolled in Supplemental Security Income, Temporary Assistance to Needy Families, USF, and Lifeline Programs are eligible to participate in the Winter Termination Program.

New Jersey's Clean Energy Program's (NJCEP) Home Performance with ENERGY STAR Program (HPwES)[105] offers generous rebates and low-interest loans for homeowners to upgrade their homes to more energy-efficient and comfortable dwellings. Approximately 40,000 homes in New Jersey have performed energy efficiency upgrades through participation in the program since 2006. HPwES not only saves energy and money, but it also addresses health and safety issues prior to making a home more energy efficient.

Recommended Actions/Next Steps: Form an outreach team to develop a comprehensive outreach plan targeting LMI residents. The team will need to work directly with leaders of community organizations to complete this plan. The campaign plan should include the municipality's strategy to notify, communicate, and gather input. Information about available energy resources and incentives should be provided. Individual meetings with community organizations should be considered or hold a larger meeting inviting several community organizations. The plan should also include a list of community organizations that may be willing to participate in the campaign.

The municipality should consider implementing the New Jersey Comfort Partners Outreach Toolkit[106] by New Jersey Comfort Partners, a free program that helps income-eligible customers reduce their utility bills through implementing cost effective measures to save energy and money while improving home safety and comfort at no cost. Funding for the Comfort Partners Program is apportioned throughout the state on an annual basis. Therefore, the municipality must coordinate with the Comfort Partners Utility Working Group to ensure that the timing and scale of the planned outreach campaign match the available funding.

[103] New Jersey Department of Community Affairs (NJ DCA), Weatherization Assistance Program (WAP), https://nj.gov/dca/dhcr/offices/wap.shtml

[104] New Jersey Department of Community Affairs (NJ DCA), Winter Termination Program, https://nj.gov/dca/dhcr/offices/wintertermination.shtml

[105] New Jersey Board of Public Utilities: Clean Energy Program, Home Performance with ENERGY STAR, https://www.njcleanenergy.com/HP

[106] Sustainable Jersey, New Jersey Comfort Partners Outreach Toolkit, https://www.sustainablejersey.com/fileadmin/media/Actions_and_Certification/Actions/Residential_Energy_Efficiency/Comfort_Partners_Outreach_Toolkit.pdf

Partnership with NJCEP staff, Comfort Partners contractors, and local utility companies is also possible to develop an outreach campaign that may include workshop sessions and educational events. Public engagement should be an ongoing effort by the municipality to encourage widespread participation in energy efficiency programs.

6.3 Support Shared Mobility Programs

This initiative directs the municipality to promote and develop shared transportation networks of cars, bicycles, and scooters with design features that particularly assist low- and moderate-income residents. Many low- and moderate- income families cannot afford their own private vehicles. For that reason, shared transportation programs can considerably improve their quality of life.

Bicycles and scooters have the potential to significantly reduce GHG emissions, while being an affordable alternative transportation. Therefore, municipalities are encouraged to promote these programs by adopting supportive regulations and developing partnerships with companies providing these services. Furthermore, municipalities can ensure that shared mobility programs are easily available and accessible to LMI neighborhoods.

Another mode of shared transportation is carsharing. In this initiative, an electric carsharing program should be considered. Similar to scooters, municipalities can partner with public-private electric carsharing programs that will provide accessibility to LMI and environmental justice neighborhoods. Carsharing programs provides underserved communities more transportation choices and mobility. There are two kinds of carsharing programs: roundtrip and one-way. Round trip allows users to access a vehicle at designated locations and typically pay by the hour or mile (or both). One-way would allow for more mobility, flexibility, and affordability, as a user can pick up a vehicle at one location and return at a different location.[107].

Examples of low-income carsharing programs are City CarShare, based in San Francisco, California and Buffalo CarShare, based in Buffalo, New York. Both are nonprofit entities. Another example is Philly CarShare (Enterprise CarShare) in Philadelphia, Pennsylvania and iGo Car Sharing in Chicago, Illinois. All-electric carsharing programs are in California, such as car2go in San Diego, DriveNow in San Francisco Bay Area, and City CarShare's DASH in Pleasanton.

Community outreach is crucial to successfully implement shared mobility programs in underserved communities. The municipality should consider educational opportunities about the programs and the technology and how to use the shared services; information on how to combine it with other modes of public transportation to increase mobility; provide support services to help facilitate reservations

[107] Greenlining Institute, Electric Carsharing In Underserved Communities: Considerations For Program Success, January 2015, https://www.sustainablejersey.com/fileadmin/media/Actions_and_Certification/Actions/Energy/Greenlining_Institute_2015_Electric_Carsharing_in_Underserved.pdf

and payment; visibility of docking stations; provide in-person workshops available in many languages; and partnership with community-based organizations.

For carsharing services, the costs for funding the vehicles and charging stations are significant. However, there are available tools such as incentive programs and public-private partnership that can help off-set the costs (see Initiative 1.6). For parking, the municipality may be able to find opportunities by negotiating with building owners of multifamily development, retail, or office development to secure parking.

Level of Priority: High/Medium

Initiative Lead/Who to involve: This initiative may involve representatives the Governing body, planning/zoning, communications, procurement/finance/budget, consultants, engineering,

Potential Stakeholders: shared mobility companies, affordable housing organizations, resident/community organizations, local institutions and businesses, community-serving institutions (faith-based and youth organizations), neighboring municipalities, transportation management associations

Anticipated Timeframe: I can take between 4 to 6 months to set up all components necessary to make a public engagement meeting successful, such as digitizing appropriate records and materials and posted online, researching appropriate meeting or communication platforms, and identifying appropriate platform(s) or techniques to gather public input.

Anticipated Costs and Funding Resource: The cost of outreach and educational campaign can be minimal if existing resources are used such as social media, email distribution lists, municipal website, and newsletters. The creation of signs, banners or flyers and local media promotion may need to be budgeted.

NJDEP eMobility[108] - NJDEP is seeking to fund proposals for electric car sharing and ride-hailing services ("eMobility") that will benefit low- or moderate-income communities disproportionately impacted by air pollution.

Shared Mobility FTA Grant Program[109] – shared mobility services may be eligible under Federal Transit Administration (FTA) programs.

Recommended Actions/Next Steps: The Texas Department of Transportation developed a guidebook, the Shared Mobility Programs Guidebook for Agencies[110], illustrating shared mobility programs for planning and mobility efforts. The Guidebook provided that to determine the potential

[108] New Jersey Department of Environmental Protection (NJ DEP), eMobility Grant Program, https://dep.nj.gov/drivegreen/emobility/

[109] Federal Transit Administration (FTA), Shared Mobility FAQs: Eligibility Under FTA grant programs, https://www.transit.dot.gov/regulations-and-guidance/shared-mobility-faqs-eligibility-under-fta-grant-programs

[110] Texas Department of Transportation, Shared Mobility Programs Guidebook for Agencies, https://communications.tti.tamu.edu/files/2016/10/Shared-Mobility-Guidebook-0-6818-P1.pdf

role of shared mobility programs within a municipality, desired goals, physical and social context, travel behavior, market demand, public perspective, political and agency involvement, and regulatory environment within the municipality should be identified and assessed.

Conduct a market analysis to answer the following questions:

- How do the demographic characteristics in the municipality compare to known shared mobility user characteristics?
- What geographic characteristics of the municipality would support a shared mobility program?
- For what purposes and trips would the shared mobility program be used?

Perform a stakeholder analysis – identify the individuals and groups that may be impacted by shared mobility program. Steps involved in this analysis are identifying potential stakeholders, engage with stakeholders, define the issues, and identify potential partners. Stakeholder support is critical in obtaining public and/or private funding, including sponsors and partners.

Review the Regulatory Environment – this involves analysis of existing planning regulations and municipal codes, or lack thereof, and the amount of support it is currently providing for the municipality to further this program.

Establish program goals – the municipality should develop a program with goals that reflects the needs and vision of the community, including the desired outcomes and benefits of the program and establishing performance metrics for monitoring and implementation.

6.4 Support Low- and Moderate-Income Community Solar Subscriptions

This initiative directs the municipality to ensure that some project capacity is reserved for low- and moderate-income (LMI) residents and/or a discount is offered for LMI subscribers.

Level of Priority: High/Medium

Initiative Lead/Departments Involved: This initiative may involve representatives from department planning/zoning, communications, procurement/finance/budget, consultants, engineering.

Potential Stakeholders: community solar developers, affordable housing organizations, resident/community organizations, local institutions and businesses, community-serving institutions (faith-based and youth organizations), neighboring municipalities

Anticipated Timeframe: As defined in Initiative 2.13, developing criteria for a community solar project can take several weeks, as it involves soliciting input from community organizations and professionals. This timeframe also includes presenting to the governing body to adopt the criteria.

I can take between 4 to 6 months to set up all components necessary to make a public engagement meeting successful, such as digitizing appropriate records and materials and posted online, researching appropriate meeting or communication platforms, and identifying appropriate platform(s) or techniques to gather public input.

Anticipated Costs and Funding Resource: The cost of outreach and educational campaign can be minimal if existing resources are used such as social media, email distribution lists, municipal website, and newsletters. The creation of signs, banners or flyers and local media promotion may need to be budgeted.

Recommended Actions/Next Steps:

Advisory Committee – The Borough should consider developing an advisory committee that includes the procurement department, municipal planner, public works, and community members. The committee would be responsible for creating a list of criteria for the municipality to endorse a community solar project that supports LMI residents. The Borough should adopt a resolution approving these criteria. Next steps would be for the committee to identify partnerships to develop community solar project.

Outreach and Educational Programming – The municipality should also use this program as an opportunity to educate the community about energy efficiency and clean energy, while simultaneously promoting the municipality's investment to reduce energy costs and GHG emissions. The following outreach initiatives should be considered:

- Educational signage in the facility.
- Incorporate solar energy systems technology in local school curriculum.
- Tours, lectures, or training workshops about solar energy systems.
- Provide solar energy systems information and resources on the municipality's website.
- Solar energy systems brochures and newsletters for homeowners or businesses.
- Outreach partnerships with solar energy systems professionals.
- Incorporate solar energy systems into a green job training program.

Strategy 7: Expand the Clean Energy Innovation Economy

Rapid acceleration of energy technology innovation has provided us affordable renewable energy sources. However, further innovation in power generation and storage can improve convenience and price parity of sustainable options and reduce the challenge of transitioning to a fossil-free energy system.

The primary goals of the state's Energy Master Plan (EMP) under this strategy are:

- Grow world-class R&D and supply chain clusters for clean energy sub-sectors;
- Establish clean energy workforce training programs;
- Provide innovative financing for clean energy projects and tech;
- Capitalize an offshore wind economic opportunity;
- Establish a Clean Energy New Technology Innovation Center and other resources; and
- Explore establishing a Clean Buildings Hub.

7.1 Adopt Energy Storage Policies

This initiative directs the municipality to adopt standards and requirements for permitting battery energy storage systems. Post information about energy storage regulations to the municipal website and ensure appropriate municipal staff are informed.

New York State developed a Battery Energy Storage System Guidebook[111] containing information, tools, and step-by-step instructions to support municipalities in managing battery energy storage system within their community. Permitting and inspection processes for battery energy storage system is also provided in the guidebook.

[111] New York State, Battery Energy Storage System Guidebook, December 2020, https://www.nyserda.ny.gov/All-Programs/Clean-Energy-Siting-Resources/Battery-Energy-Storage-Guidebook

Within the Guidebook, a Model Law is provided intended to help municipalities to adopt regulations relating to battery energy storage systems in their communities. It outlines procedural frameworks and substantive requirements for residential, commercial, and utility-scale battery energy storage systems.

A Battery Energy Storage System Model Permit is also provided within the Guidebook and is intended to help municipalities establish permit application requirements for electrical and structural plan review that are necessary when permitting residential and small commercial battery energy storage systems.

Level of Priority: Low

Initiative Lead/Departments Involved: This initiative would typically involve representatives from department involved in Planning/Zoning Board, Governing Body, Municipal Staff (Planning/Zoning, Board Secretary, Township Clerk), Consultant(s) (if any).

Potential Stakeholders: Electric utilities, energy storage companies

Anticipated Timeframe: approximately 3 months

Anticipated Costs and Funding Resource: The primary cost for this initiative will consist of municipal staff time or contracted professionals to undertake the code or policy research, review, and development of the policy and amend the ordinance to incorporate said policies.

Recommended Actions/Next Steps: Review the Model Law provided by the NYS Battery Energy Storage System Guidebook. The Model Law should be carefully considered and modified to suit the local conditions of the Borough, such as the zoning ordinance. After adoption of the ordinance, the Borough should consider providing training for first responders to learn about the technology of energy storage systems.

Lindenwold Municipal Building

APPENDIX

Renewable Government Energy Aggregation (R-GEA) Template Ordinance

Municipal Energy Aggregation Program Request For Proposals Template

Green Design – Municipal Building Resolution Sample

Model Green Development Checklist

ORDINANCE NO. _____

AN ORDINANCE OF THE TOWNSHIP OF TOWNSHIP NAME, COUNTY OF COUNTY NAME, STATE OF NEW JERSEY, AUTHORIZING THE ESTABLISHMENT OF A GOVERNMENT ENERGY AGGREGATION PROGRAM

WHEREAS, the Government Energy Aggregation Act, N.J.S.A. 48:3-93.1 *et seq.* governs the establishment of a government energy aggregation program, which is a government-operated purchasing cooperative through which multiple energy consumers purchase energy together under the auspices of a government aggregator; and

WHEREAS, the New Jersey Board of Public Utilities ("BPU") has promulgated rules (N.J.A.C. 14:4-6) for the implementation of government energy aggregation programs; and

WHEREAS, pursuant to the Government Energy Aggregation Act, N.J.S.A. 48:3-93.1 et seq., the Township seeks to establish a Government Energy Aggregation Program ("Program") for the provision of electricity within the Township, for the purpose of obtaining an increased renewable content in the power supply for residential customers (and commercial customers, optional) in the Township; and

WHEREAS, the TOWNSHIP NAME Council intends to serve as the lead agency conducting a Government Energy Aggregation Program in TOWNSHIP NAME and, in that capacity and consistent with applicable rules, to solicit proposals and enter into a contract for the provision of electric generation services on behalf of residential customers (and commercial customers, optional) within the boundaries of the Township, to the extent that such a contract will produce an increased renewable content in the power supply to residential customers (and commercial customers, optional); and

WHEREAS, and the New Jersey Board of Public Utilities ("BPU") has promulgated rules (N.J.A.C. 14:4-6.3) which state residential customers shall automatically be included in the program unless the customer chooses to opt-out. A residential customer may not be charged an exit fee for leaving an aggregation program at any time. Optional: Non-residential customers shall be included in an energy aggregation program only if the non-residential customer indicates its desire to participate in the program by opting-in; and

WHEREAS, the TOWNSHIP NAME Council will from time to time during the Effective Period as defined below solicit proposals from electric power suppliers for electric generation services through the Program in which the TOWNSHIP NAME Council will act as Lead Agency of the NAME OF AGGREGATION ENTITY ("XXXX"); and

WHEREAS, the TOWNSHIP NAME Council will from time to time during the Effective Period as defined below issue one or more Request for Proposals for electric generation services and energy aggregation services on behalf of the XXXX pursuant to the Local Public Contract Law Regulations, the Government Energy Aggregation Act and the Electric Discount and Energy Competition Act; and

WHEREAS, the TOWNSHIP NAME Council is interested in mandating that a fraction of the energy provided by XXXX come from renewable energy sources, and will therefore include provisions for the inclusion of renewable energy in the Request for Proposals for electric generation services and energy aggregation services on behalf of the XXXX; and

WHEREAS, the TOWNSHIP NAME Council will only award contracts for said electric generation service and energy aggregation services to electric power suppliers that are deemed qualified;

WHEREAS, pursuant to applicable BPU rules, the Township needs to enter into an Electric Distribution Company Aggregation Agreement with UTILITY NAME ("UTILITY_ABBREVIATION") Company; and

WHEREAS, N.J.S.A. 48:3-93.1 *et seq.* requires the Program to be established by ordinance.

NOW, THEREFORE, BE IT ORDAINED by the governing body of the TOWNSHIP NAME, COUNTY NAME, State of New Jersey as follows:

SECTION 1. The Township hereby establishes a Government Energy Aggregation Program, in accordance with the provisions of the Government Energy Aggregation Act, N.J.S.A. 48:3-93.1 *et seq.*

SECTION 2. The Mayor/Council President/Other is authorized to execute and the Clerk to attest to the execution of and Electric Distribution Aggregation Agreement, in a form acceptable to the Township, with UTILITY_ABBREVIATION.

SECTION 3. The TOWNSHIP NAME Council will act as Lead Agency of the XXXX and, in that capacity, and consistent with applicable rules, will solicit proposals for electric generation service and energy aggregation services on behalf of Township residents and businesses, and enter into a contract for such services provided that the lowest qualified bid containing renewable content in the power supply above the basic generation supply of the current default supplier.

SECTION 4. As Lead Agency the TOWNSHIP NAME Council will execute a master performance agreement that obligated the participants in the XXXX to purchase electricity at terms and conditions stated therein with a third party supplier who has been awarded the contract by the Lead Agency on behalf of participating members of the XXXX, and provided that such contract shall be at prices reasonably forecast and estimated by the TOWNSHIP NAME Council to provide increased renewable content in the power supply relative to the basic generation service by UTILITY_ABBREVIATION.

SECTION 5. The authorization provided to the Lead Agency shall be valid until _____ (the "Effective Period"), at which time the XXXX will be subject to renewal at the discretion of the TOWNSHIP NAME Council.

SECTION 6. All ordinances or parts of ordinances inconsistent herewith are hereby repealed.

SECTION 7. If any section, subsection, sentence, clause, phrase or portion of this ordinance is for any reason held to be invalid or unconstitutional by a court of competent jurisdiction, such portion shall be deemed a separate, distinct and independent provision, and such holding shall not affect the validity of the remaining portions hereof.

TOWNSHIP NAME

COUNTY NAME, NEW JERSEY

REQUEST FOR PROPOSALS
FOR TOWNSHIP NAME
MUNICIPAL ENERGY AGGREGATION PROGRAM

ENERGY-RELATED CONSULTANT SERVICES FOR
MANAGEMENT OF THE TOWNSHIP'S
MUNICIPAL ENERGY AGGREGATION PROGRAM

TOWNSHIP NAME

PUBLIC NOTICE OF REQUEST FOR PROPOSALS

NOTICE IS HEREBY GIVEN that sealed submissions of proposals will be received by the Administrator/Clerk, or his designated representative, for TOWNSHIP NAME, County of COUNTY, State of New Jersey until **_____, DATE** at **TIME** prevailing time, in the _____, LOCATION, ADDRESS then publicly opened and read aloud for the following:

MUNICIPAL ENERGY AGGREGATION PROGRAM

Submission packages may be obtained at the _____, (###) ###-####, ext. ## during regular business hours, 8:30AM to 4:30PM, Monday through Friday, excluding holidays. There is a $XX.XX fee for the proposal package.

These proposals are being solicited through a "fair and open process" in accordance with **N.J.S.A. 19:44A-20.5 et. seq.**

Professional service contractors are required to comply with the requirements of **N.J.S.A. 10:5-31 et seq.** and **N.J.A.C. 17:27 et seq.**

_____

Name

Title

TABLE OF CONTENTS

1 GENERAL INFORMATION AND SUBMISSION REQUIREMENTS

1.1 Pursuant to N.J.S.A. 40A:11-1 et seq., TOWNSHIP NAME hereby issues a Request for Qualifications ("RFP") seeking proposals from qualified consultants or companies to develop a program to aggregate the electrical load of electricity users within the Township, both residential users and, if so determined by the governing body, non-residential users, and, in consultation with the New Jersey Board of Public Utilities ("BPU"), develop, prepare, implement, secure regulatory approval, and perform all services related to administering the NAME OF Aggregation Program as defined by and in compliance with all applicable provisions of N.J.S.A. 48:3-93.1 et seq., as amended, and any other applicable statute or regulation related to this process, including N.J.A.C. 14:4-6.1 et seq., and the policies and procedures of the BPU.
The Township intends to select and enter into an agreement ("the Contract" or "this Agreement") with the most highly qualified Proposer for a term of three (3) years**,** with an option to renew for an additional two (2) years at the Township's sole discretion.

1.2 The **RFP package** is available at **_____, LOCATION, ADDRESS** as of **DATE,** and **separately sealed price and non-price (technical) proposals** will be accepted at the **LOCATION** until **TIME on DATE** at **the LOCATION, ADDRESS**, when a register of proposals will be made. Separately sealed proposals, including the Proposer's name and address in the upper left-hand corner of each envelope, shall be clearly identified in the lower left-hand corner of each envelope as **PRICE PROPOSAL: MUNICIPAL AGGREGATION CONSULTANT** and **NON-PRICE (TECHNICAL) PROPOSAL: MUNICIPAL AGGREGATION CONSULTANT**. The Township will not be responsible for the premature opening of any proposal not properly identified, and any such proposals will be rejected.

1.3 The Township endeavors to expedite the award and execution of the contract documents. The Contract is anticipated to be awarded within thirty (30) calendar days after the proposals are due. Within five (5) calendar days of the date of the award of contract, the Contract will be executed by the Township and the Proposer to whom the award of contract has been made. Said time deadline may be extended by mutual agreement. Services under the Contract will commence as soon as practical thereafter.

1.4 If any changes are made to this RFP, an addendum will be issued. Addenda will be e-mailed or faxed to all Proposers on record as having received the RFP. If the Township issues any addendum to this RFP, each Proposer shall acknowledge on the Proposal Form the receipt of each addendum-by-addendum number and date.

1.5 After the proposal due date, a Proposer may not change any provision of the proposal in a manner prejudicial to the interests of the Township or fair competition. Minor informalities will be waived or the bidder will be allowed to correct them. If a mistake and the intended proposal are clearly evident on the face of the proposal document, the mistake will be corrected to reflect the intended correct proposal, and the Proposer will be notified in writing; the Proposer may not withdraw the proposal. A Proposer may withdraw a proposal if a mistake is clearly evident on the face of the proposal document, but the intended correct proposal is not similarly evident.

1.6 There is no pre-proposal conference scheduled for this RFP.

1.7 The Township reserves the right to cancel this RFP or reject in whole or in part any and all proposals, if the Township determines that cancellation or rejection serves the best interests of the Township.

1.8 All proposal prices submitted in response to this RFP must remain firm for sixty (60) days following the proposal due date.

1.9 The following forms, incorporated herein and included elsewhere in the bid documents, must be submitted with the bid:

a) Price Proposal Form;
b) Non-Collusion Form;
c) Tax Compliance Form;
d) Certificate of Vote, if corporation;
e) Reference Form; and
f) Business Registration Certification

1.10 A proposal must be signed as follows:

a) if the Proposer is an individual, by him/her personally;
b) if the Proposer is a partnership, by the name of the partnership, followed by the signature of each general partner;
c) if the Proposer is a corporation, by the authorized officer, whose signature must be attested to by the Clerk/Secretary of the corporation and the corporate seal affixed.
d) if the Proposer is a limited liability company, by the managing member or an authorized member of the company.

1.11 No performance bond is required for this contract.

1.12 Proposals which are incomplete, conditional, not properly endorsed or signed, or which are otherwise contrary to these instructions may be rejected.

2 SCOPE OF SERVICES

2.1 LEGISLATIVE RESEARCH

In 1999, the State of New Jersey passed legislation relative to restructuring the electric utility industry. The Consultant selected by the Township will review any subsequent amendments to the legislation and conduct a review of any statutory changes pending at the Legislative Branch and any regulatory changes pending at the BPU. The Consultant will also be responsible for monitoring federal restructuring legislation and regulations and PJM activities for potential impacts to the Township's Municipal Aggregation Program or the Township.

2.2 MANAGEMENT OF MUNICIPAL AGGREGATION PROGRAM

The Township seeks a qualified Consultant possessing a thorough understanding of load profiling, power procurement, renewable energy procurement, and pricing issues to perform the essential functions of operating the Township's Municipal Aggregation Program approved pursuant to N.J.S.A. 48:3-93.1 et seq. The Consultant or firm will be responsible for all technical and legal aspects of analyzing load data, administering the RFP process, leading negotiations with Competitive Suppliers, and providing ongoing management and monitoring of any Electric Service Agreements ("ESA") executed on behalf of the Township's eligible consumers.

2.3 PREPARATION AND ISSUANCE OF RFPs FOR POWER SUPPLY

When necessary, the Consultant shall develop an RFP for power supply for review and approval by the Business Administrator and Township Attorney. In general, the procurement document shall include several components:

a) description of the load aggregation (potential size of the aggregated load and the number of eligible consumers and/or accounts);
b) services and features desired by the Township;
c) qualification criteria required in order to have a bid considered;
d) criteria used to select the Competitive Supplier;
e) essential provisions of the standard contract between the chosen Competitive Supplier and the Township on behalf of the participating consumers; and
f) term of service.

The Consultant shall ensure when accepting bids from Competitive Suppliers, that each bidder has included with their response a signed Business Registration Certificate, Non-Collusion Form, stating his/her bid is made freely without consultation with any other bidder, and a signed Tax Compliance Form, demonstrating compliance with the State of New Jersey tax laws.

The Consultant shall assist the Township with the review and analysis of all responsive and responsible bids from Competitive Suppliers and shall be responsible for recommending the bid that is in the best interests of the Township and meets the goals of the Township's Municipal Aggregation Program. Bids from Competitive Suppliers shall be evaluated based on price, Competitive Suppliers' proposed contract terms and conditions, reputation of Competitive Suppliers, quality of Competitive Suppliers' service, extent to which service meets Township's needs, Competitive Suppliers' past relationship with the Township, and previous work experience with governmental agencies. Nothing herein shall preclude the Township from having legal counsel review such a recommendation.

The Consultant shall obtain and verify references for similar power supply contracts, if available.

2.4 NEGOTIATIONS FOR POWER SUPPLY

The Consultant shall act as the Township's broker during the procurement process. The Consultant shall provide all technical and legal services during the negotiations and terms of any contract with prospective Competitive Suppliers.

Any negotiations shall include a requirement that billing for the provider shall be included in the bill from the local electric utility ("Local Distributor"), its successors and assigns. Nothing herein shall preclude the Township from having legal counsel review the terms and conditions of any negotiated contract.

2.5 CONSUMER ENROLLMENT / TRANSITION PROCESS

After approval of the price and term of the agreement by the Business Administrator and Township Attorney with a Competitive Supplier, the Consultant shall take all measures necessary to effectuate the transfer of participating consumer data from the Local Distributor to the Competitive Supplier. The Consultant shall have established procedures to respond to:

a) participating consumer queries and issues;
b) Competitive Supplier issues;
c) Local Distributor issues;
d) media queries; and
e) governmental shifts and proposed policy changes.

2.6 PUBLIC EDUCATION AND NOTIFICATION

The Consultant shall prepare or cause to be prepared all informational and educational materials for the general public and for the media, subject to the approval of the Business Administrator, including meetings with representatives from the media. The Consultant shall include a

recommended public education and information strategy to be used as part of the Township's Municipal Aggregation Program following commencement of the power supply contract.

2.7 LEGAL ASSISTANCE

The Consultant shall prepare all required filings for the BPU, or any other state agency, if applicable, for contracts executed by the Township on behalf of its residents.

2.8 ADMINISTRATION OF MUNICIPAL AGGREGATION PROGRAM

The Consultant will administer and provide technical oversight of the Township's Municipal Aggregation Program including:

a) monitoring and reporting on compliance by the Competitive Supplier with all contract terms and conditions;
b) resolution of contract issues;
c) transition administration of the opt-out process for participating residential consumers;
d) participation in negotiations with Competitive Suppliers and the Local Distributor as it relates to the procurement for the Municipal Aggregation Program;
e) preparation of written reports on the ongoing operations of the Township's Municipal Aggregation Program to be submitted on a semi-annual basis to the Township; and
f) routine updates and attendance at meetings with the Business Administrator and Township Council, as needed.

2.9 MAINTENANCE OF EFFORT

The Consultant, as the administrator of the power supply contract shall, after a contract is executed between the Township and a Competitive Supplier, ensure the Competitive Supplier's compliance with the contract, conduct ongoing power supply analyses, be the advocate for ratepayers, provide answers to questions from ratepayers, and provide a hotline and website where ratepayers can seek information related to the Township's Municipal Aggregation Program. The Consultant shall provide reports as directed by the Business Administrator in addition to any reporting requirements outlined in this RFP.

The Consultant shall provide a written report concerning the following issues and items to the Business Administrator on a semi-annual basis:

a) Competitive Supplier's compliance with all terms and conditions of contract;
b) contract issues and resolutions, if any;
c) whether Competitive Supplier's contract milestones have been met;

d) administration/customer service, defaults, litigation and penalties in order to ascertain compliance with BPU regulatory standards and procedures, as well as additional standards and procedures employed by the Competitive Supplier;
e) participating consumer review;
f) changes in the financial stability of the Competitive Supplier, if any; and
g) changes in the organizational structure of the Competitive Supplier, if any.

The Consultant shall provide a written report concerning the following issues and items to the Business Administrator prior to the expiration, extension or renewal of the contract:

a) assessment on achievement of contract milestones;
b) possible revision or upgrading of goals;
c) market assessment or new feasibility study if conditions in the service area or operations have changed significantly;
d) public process to affirm goals and evaluation;
e) bidding and negotiation process;
f) formulation of new contract; and
g) service transition process, if needed.

2.10 SUMMARY OF RESPONSIBILITIES

The Consultant shall, if not hereinbefore required, provide the following services:

a) obtain and analyze the electrical load data for all participating consumers in the Township;
b) provide broker services including preparing RFPs for Competitive Suppliers, if necessary;
c) prepare and implement a public education plan and eligible consumer outreach program;
d) prepare and submit, with the approval of the Township Attorney and Business Administrator, all filings with the BPU or any other state agency, if applicable;
e) prepare and negotiate agreements with Competitive Suppliers on terms favorable to the Township;
f) monitor all aspects of the Township's Municipal Aggregation Program and any resulting contractual agreements with Competitive Suppliers;
g) advise Township on maximizing renewable energy options in supplier contracts;
h) continually analyze the development of market and regulatory issues and advise the Township on any proposed changes in law or regulation, including those offered by the PJM Interconnection ("PJM") and any pending at the Federal Energy Regulatory Commission ("FERC") which may affect the Township's Municipal Aggregation Program or the Township.

Nothing herein shall preclude the Township from having its legal counsel review the terms and

conditions of any contract, agreement and/or filing; and/or performance under same.

2.11 MANAGEMENT FEE FOR CONSULTANT SERVICES

The Consultant shall offer a management fee per kilowatt hour (kWh) that the Township will consider in making an award for the Contract. The price per kWh shall be the complete price for all services provided by the Consultant, and the Consultant may also propose an allowance for recovery of expenses and both shall be paid directly to the Consultant by the Competitive Supplier. No proposal shall require payment by the Township of any costs, expenses or expenditures.

Any consultant agreement shall not impose an obligation upon the Township to execute any contract with any Competitive Supplier, or to operate, execute or maintain the Township's Municipal Aggregation Program. Compensation shall only be paid to the Consultant by a Competitive Supplier to the extent the Township elects, in the Township's sole discretion, to execute a power supply contract that is procured or negotiated on behalf of the Township, as part of a municipal aggregation program. The Business Administrator and Township Attorney will undertake a good faith review of any contract procured or negotiated on behalf of the Township.

3 MINIMUM QUALITY REQUIREMENTS

3.1 Proposers must provide all of the services described in Section 2 and comply with all Submission Requirements listed in Section 1.

3.2 Proposers must have previous experience in the energy industry in consulting on the development and implementation of a program for municipal aggregation for retail consumers and expertise in retail power markets and PJM wholesale markets.

3.3 Proposers must be equipped to undertake and commence the services specified upon the execution of the Contract. Proposers shall include a brief schedule for the completion of the above services and the deliverables, including the proposed start and end dates and intermediate delivery dates. Proposers must describe the projected resource availability for the anticipated duration of the project.

3.4 Proposers must possess the following qualifications to perform the services, and must attach information demonstrating such qualifications titled "Description of Proposer's Qualifications" to the Proposal Form:

a) office location from which the services will be managed;
b) detailed knowledge of N.J.S.A. 48:3-93.1 et seq.

c) detailed knowledge of N.J.A.C. 14:4-1 et seq.;
d) Energy Agent licensed by the BPU to do business in the area served by the Local Distributor for residential, commercial and industrial services.

3.5 Proposers must possess any necessary licenses and/or approvals required to act as the Township's agent for its Municipal Aggregation Program to be eligible to submit a proposal.

3.6 Proposer shall not be owned or be a subsidiary of the any Competitive Supplier.

4 COMPARATIVE EVALUATION CRITERIA

All responsive and responsible non-price (technical) proposals will be evaluated and rated on the basis of the following comparative criteria.

4.1 Relevant experience of Proposer and/or proposed staff:

a) **Highly Advantageous:** The Proposer has at least seven (7) years or more of experience consulting with government entities on energy aggregation services and Proposer has completed Municipal Aggregation Programs for municipal governments in New Jersey.
b) **Advantageous:** The Proposer has at least four (4) years but less than seven (7) of experience consulting with government entities on energy aggregation services.
c) **Non-Advantageous:** The Proposer has two (2) but less than four (4) years of experience consulting with government entities on energy aggregation services.

4.2 Proposer's demonstrated familiarity and experience with procurement of renewable electricity.

a) **Highly Advantageous:** The Proposer can demonstrate experience with procuring or arranging sale of renewable electricity consistent with the requirements of the New Jersey Renewable Portfolio Standard.
b) **Advantageous:** The Proposer can demonstrate knowledge of procuring or arranging sale of renewable electricity consistent with the requirements of the New Jersey Renewable Portfolio Standard.
c) **Not Advantageous:** The Proposer has partial or limited knowledge of procuring or arranging sale of renewable electricity consistent with the requirements of the New Jersey Renewable Portfolio Standard.

4.3 The Proposer's demonstrated ability to develop and complete an electrical or municipal aggregation process on a timely basis.

1. **Highly Advantageous:** All of the Proposer's references indicate that the process was completed on schedule or with minimal, insignificant delays.
2. **Advantageous:** Only one of the Proposer's references indicates that the process was completed with substantial delays attributable to the Proposer, and no current process or process completed in the last three (3) years experienced substantial delays attributable to the Proposer.
3. **Not Advantageous:** Two (2) of the Proposer's references indicate that the process was completed with substantial delays attributable to the Proposer, and no current process or process completed in the last year experienced substantial delays attributable to the Proposer.

4.4 Proposer has the qualifications and resources necessary to perform the service objectives stated in the RFP for administering and monitoring energy-related contracts for the Township's Aggregation Program.

a) **Highly Advantageous:** The Proposer possesses all of the qualifications necessary to meet all of the Township's objectives stated in the RFP and has demonstrated proficiency in those qualifications in completed municipal aggregation programs.
b) **Advantageous:** The Proposer possesses most of the qualifications necessary to meet all of the Township's objectives stated in the RFP.
c) **Non-Advantageous:** The Proposer possesses few of the qualifications necessary to meet all of the Township's objectives stated in the RFP.

5 REFERENCES

5.1 Proposers must submit a complete list of current New Jersey government clients and a separate list specifically of municipal government clients for which they provide services similar in size and scope to the services requested by the Township herein. References must include client names, contact persons and contact numbers.

5.2 Poor references may be a basis for a determination that the Proposer is not a responsible Proposer.

6 RULE FOR AWARD

6.1 The Contract will be awarded to the responsive and responsible Proposer offering the most advantageous proposal, taking into consideration all evaluation criteria.

6.2 The Contract price will remain firm for the term of the Contract, including any extension option term which is exercised by the Township in its sole discretion.

6.3 The award of the Contract will be made by the Township Council. To be eligible to receive a contract award, a Proposer must be equipped to undertake and perform all the services specified in the proposal documents and must satisfy all other requirements of this RFP.

6.4 The selected consultant will be required to execute a contract in substantially the same form as provided in Section 7.3 of this document.

7 SPECIAL NOTE

7.1 The Township reserves the right to utilize the selected consultant to expand the energy aggregation program to include natural gas at the sole discretion of the Township.

8 FORMS OF CONTRACT AND ADDITIONAL TERMS AND CONDITIONS

8.1 **General Laws Compliance:** The Consultant will comply with all federal, state and municipal laws, ordinances, rules and/or regulations as amended which are applicable to the Consultant's obligations pursuant to this contract for services.

8.2 **Fair Employment Practices:** The Consultant shall not discriminate against any qualified employee or applicant for employment because of race, color, national origin, ancestry, age, sex, religion or physical or mental handicap.

The Consultant agrees to comply with all applicable federal and state statutes, rules and regulations prohibiting discrimination in employment including Title VII of the Civil Rights Act of 1964; The Age Discrimination in Employment Act of 1967; The Americans with Disabilities Act of 1991; N.J.S.A. 10:5-36 et seq., and N.J.A.C. 17:27.

8.3 **Form of Contract and Standard Terms and Conditions as follows:**

TOWNSHIP NAME

CONSULTANT AGREEMENT

FOR MANAGEMENT OF THE TOWNSHIP'S MUNICIPAL AGGREGATION PROGRAM

AND ENERGY-RELATED SERVICES

This Consultant Agreement is made and entered into this _____ day of _____, 20XX, by and between TOWNSHIP NAME ("Township"), a municipal corporation having its principal place of business at LOCATION, ADDRESS and CONSULTANT NAME AND ADDRESS.

It is agreed between the parties hereto as follows:

SCOPE OF SERVICES, DELIVERABLES: (To be inserted as outlined in the specifications contained in the Request for Proposals.)

CONTRACTUAL RELATIONSHIP: The Consultant shall provide services described in the contract documents, which shall be as detailed in the specifications contained in the Request for Qualifications which are incorporated herein and made a part hereto, including all addenda issued prior to execution of this Agreement. While so performing the services under this Agreement, the Consultant and the Township agree, understand and recognize that pursuant to N.J.S.A. 40A:11-5(1)(a)(i), the Consultant is: (1) free from control and direction in connection with the performance of the service, both under this Agreement and in fact; and (2) the service is performed outside the usual course of the business of the Township; and, (3) the Consultant is customarily engaged in an independently established trade, occupation, profession or business of the same nature as that involved in the execution of the service.

APPLICABLE LAW: This Agreement shall be construed in accordance with the Uniform Procurement Act, N.J.S.A. 40A, and other laws of the State of New Jersey.

PAYMENT TERMS AND SCHEDULE: The Consultant shall receive a price of _____ per kilowatt hour (kWh). Said price per kWh shall be the complete price for all services provided by the Consultant and an allowance for expenses to be recovered from the Competitive Supplier and shall be paid directly to the Consultant by the Competitive Supplier.

TAX COMPLIANCE: The Consultant has provided certification of tax compliance in accordance with section 1 of P.L. 2001, c. 134 (N.J.S.A. 52:32-44 et seq.)

INDEMNIFICATION: The Consultant, at its expense, shall to the maximum extent permitted by law, indemnify and save harmless the Township, its officers, agents and employees from and against any and all damages, liabilities, actions, suits, proceedings, claims, demands, losses, costs,

and expenses (including reasonable attorney's fees) for any personal injury or property damage or other damages that the Township may sustain which arise out of or in connection with the Consultant's performance of a Contract, by the Consultant, its employees, or agents, including but not limited to negligence and/or reckless or intentional conduct of the Consultant, its agents, officers, employees, sub-consultants, or subcontractors. The existence of insurance shall in no way limit the scope of this indemnification. The Consultant further agrees to reimburse the Township for damage to the Township's property caused by the Consultant, its employees or agents, unless damage is caused by the Township's gross negligence or willful misconduct. After prompt notification of a claim by the Township, the Consultant shall have an opportunity to participate in the defense of such claim and any negotiated settlement agreement or judgment. The Township shall not be liable for any costs incurred by the Consultant arising under this paragraph.

ASSIGNMENT PROHIBITED: The Consultant agrees that it will not be permitted to assign or underlet the contract, nor assign either legally or equitably, any monies hereunder, or its claim thereto, without the previous written consent of the Township Committee.

AMENDMENTS OR CHANGES: Any amendments or changes to this Agreement must be in writing and signed by officials with authority to bind the Consultant and the Township.

ABANDONMENT OF WORK OR OTHER DEFAULT: The Consultant agrees that abandonment or delay of services, or the supply of reports after the date of execution of this Agreement, shall be a breach of this Agreement. The Township may, by whatever legal remedies are available to it, complete or cause to be complete, the work or services and the Consultant shall bear full responsibility of the entire cost of completing the terms of the Agreement and agrees to pay to the Township any losses, damages, costs and expenses, including attorney's fees, sustained or incurred by the Township by reason of any of the foregoing causes.

PROCUREMENT ERRORS: If errors in the procurement or bidding laws or regulations of the State, whether said errors were made by the Consultant or the Township, are found to exist by any agency of the State or by any court of competent jurisdiction, this Agreement shall become null and void.

TERMINATION: This Agreement shall terminate on the date specified in this Agreement, unless this date is properly amended in accordance with all applicable laws and regulations prior to this date, or unless terminated under this Section upon prior written notice to the Consultant; provided however, that it is further agreed by the Consultant that any breach by the Consultant of the provisions of this Agreement and its incorporated attachments shall be sufficient cause for the Township to terminate this Agreement five (5) calendar days after the date of a written notice to the Consultant. Excepting for termination for breach of this Agreement, any fees due Consultant from awarded power supply contracts shall survive termination.

SEVERABILITY: And it is further agreed by the Consultant and the Township that the provisions of this Agreement are severable. If any provision of this Agreement is held invalid or

if any court of competent jurisdiction holds any provision unlawful or not legal, the remaining provisions shall remain in effect.

ENTIRE AGREEMENT CLAUSE: The Township and the Consultant agree that this Agreement and its attachments constitute the entire Agreement between the Township and the Consultant, and no other binding agreement exists other than those incorporated herein.

DURATION OF CONTRACT: It is agreed the duration of this Agreement shall be three years, with an option to renew for one two-year period. This option is exercisable solely at the Township's discretion. It is understood and agreed that there is no financial contractual obligation of the Township municipality in this Agreement or in any years subsequent to the fiscal year in which this Agreement is executed.

IN WITNESS WHEREOF, the Consultant and the Township have caused their authorized officials to sign and seal this Agreement.

FOR THE CONSULTANT

BY:

_____

(INSERT NAME AND TITLE)

Date: _____

FOR THE TOWNSHIP NAME BY:

_____

INSERT NAME AND TITLE

_____

Attest:

_____

INSERT NAME AND TITLE

Date: _____

NAME OF TOWNSHIP

PRICE PROPOSAL FORM
CONSULTANT FEE
FOR MANAGEMENT OF THE TOWNSHIP'S MUNICIPAL ENERGY AGGREGATION PROGRAM
AND ENERGY-RELATED SERVICES

NAME OF CONSULTANT: _____

ADDRESS: _____

TOWNSHIP/STATE/ZIP: _____

TELEPHONE: _____ FAX: _____

EMAIL: _____

TOTAL FEE: $_____ per kWh of electricity used by those participating consumers enrolled in the Township's Municipal Energy Aggregation Program.

I acknowledge that NAME OF TOWNSHIP, as the Awarding Authority, reserves the right to reject in whole or in part any and all proposals, if the Township determines that rejection serves the best interests of the Township. Further, I acknowledge any contract will be awarded to the responsive and responsible Proposer offering the most advantageous proposal taking into consideration all evaluation criteria pursuant to this Request for Qualifications and the Township's decision is final to the extent allowed pursuant to N.J.S.A 40A, as amended.

I, the undersigned, do hereby certify:

a) that the certifications required by this Request For Qualifications are included with the Non-Price (Technical) Proposal, completed, and signed by an authorized official of the Proposer;

b) that all services for which the Proposer offered a proposal are available;

c) that the only parties interested in this Proposal as principals are named herein;

d) that I have carefully examined the proposed scope of services and all conditions existing so as to be fully informed and satisfied as to the intent and meaning of all contract documents and the proposed services to be rendered;

e) that the Proposer will enter into a contract with the Township to deliver all the services as required and specified in the contract, in the manner and time prescribed therein; and

f) that the Proposer will take in full payment for all services to be rendered hereunder the price applicable to the services as stated above and said payment shall be made to the Proposer as the selected Consultant for the Township by the Competitive Supplier, with no costs to the Township during any contract term.

AUTHORIZED SIGNATURE: _____

PRINT NAME: _____

DATE: _____

A proposal must be signed as follows:

a) if the Proposer is an individual, by her/him personally;

b) if the Proposer is a partnership, by the name of the partnership, followed by the signature of each general partner; or

c) if the Proposer is a corporation, by the authorized officer, whose signature must be attested to by the Clerk/Secretary of the corporation and the corporate seal affixed.

[THIS FORM IS TO BE SUBMITTED IN A SEPARATELY SEALED ENVELOPE.]

REQUIRED CERTIFICATIONS

1. Certification of Good Faith: I certify under penalties of perjury that this bid or proposal has been made and submitted in good faith and without collusion or fraud with any other person. As used in this certification, the word "person" shall mean any natural person, business, partnership, corporation, union, committee, club, or other organization, entity, or group of individuals.

Signature of Person Signing Bid or Proposal

Name and Title (Typed)

Company Name

Date: _____

2. Certification that State Taxes are Filed and Paid: I certify under the penalties of perjury that, to the best of my knowledge and belief, I am in compliance with all laws of the State relating to taxes, reporting of employees and contractors, and withholding and remitting child support.

Signature of Individual/Corporate Name (mandatory) or Corporate Officer (mandatory, if applicable)

Social Security Number (Voluntary) or Federal Identification Number

Date: _____

Approval of a contract or other agreement will not be granted unless this certification clause is signed by the applicant(s). Your Social Security Number will be furnished to the New Jersey Department of Treasury to determine whether you have met tax filing or tax payment obligations. Providers who fail to correct their non-filing or delinquency will not have a contract or other agreement issued, renewed, or extended.

CERTIFICATE OF VOTE

I, _____, Clerk of _____ hereby certify that, at a meeting of the Board of Directors of said Corporation duly held on _____ which date is earlier than the contract to which this certificate is incorporated by reference, at which a quorum was present and voting throughout, the following vote was duly passed and is now in full force and effect:

"Voted: That _____ [***Name of Officer Authorized to Sign for Corporation***] be and hereby is authorized, directed and empowered for, in the name of and on behalf of this corporation, to sign, seal with the corporate seal, execute, acknowledge and deliver other obligations of this Corporation; the execution of any such contract, bond or obligation by such _____ [***Name of Officer***] to be valid and binding upon this Corporation for all purposes, and that a certificate of the Clerk of this Corporation setting forth this vote shall be delivered to the Awarding Authority; and that this vote shall remain in full force and effect unless and until the same has been altered, amended or revoked by a subsequent vote of such directors and a certificate of such later vote attested by the Clerk of this Corporation is delivered to the Awarding Authority."

I, further certify that _____ is the duly elected _____ of said corporation.
[***Name of Officer***] [***Title***]

Signed: _____
[***Clerk-Secretary***]

Place of Business: _____ **Date of Contract:** _____

AFFIX CORPORATE SEAL

Countersignature: _____
[***Name and Title of Officer***]

[In the event that the Clerk or Secretary is the same person as the Officer authorized to sign that contract or other instrument for the Corporation, this Certificate must be counter signed by another officer of the Corporation.]

REFERENCE FORM

Submitter: _____

RFP Title: TOWN NAME MUNICIPAL ENERGY AGGREGATION PROGRAM
Submitter must provide references for CURRENT CONSUMERS, preferably municipalities.

Reference: _____ **Contact:** _____
Address: _____ **Phone:** _____
_____ **Fax:** _____

Description and Date(s) of Supplies or Services Provided:
_____
_____

Reference: _____ **Contact:** _____
Address: _____ **Phone:** _____
_____ **Fax:** _____

Description and Date(s) of Supplies or Services Provided:
_____
_____

Reference: _____ **Contact:** _____
Address: _____ **Phone:** _____
_____ **Fax:** _____

Description and Date(s) of Supplies or Services Provided:
_____
_____

[*make additional copies as necessary or submit in similar format.]*

EXHIBIT A

MANDATORY EQUAL EMPLOYMENT OPPORTUNITY LANGUAGE N.J.S.A. 10:5-31 et seq. (P.L.1975, c.127) N.J.A.C. 17:27 et seq.

GOODS, GENERAL SERVICES, AND PROFESSIONAL SERVICES CONTRACTS

[http://www.state.nj.us/treasury/purchase/forms/AA_Supplement-ExhibitA.pdf]

During the performance of this contract, the contractor agrees as follows:

The contractor or subcontractor, where applicable, will not discriminate against any employee or applicant for employment because of age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex. Except with respect to affectional or sexual orientation and gender identity or expression, the contractor will ensure that equal employment opportunity is afforded to such applicants in recruitment and employment, and that employees are treated during employment, without regard to their age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex. Such equal employment opportunity shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Public Agency Compliance Officer setting forth provisions of this nondiscrimination clause. The contractor or subcontractor, where applicable will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex.

The contractor or subcontractor will send to each labor union, with which it has a collective bargaining agreement, a notice, to be provided by the agency contracting officer, advising the labor union of the contractor's commitments under this chapter and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

The contractor or subcontractor, where applicable, agrees to comply with any regulations promulgated by the Treasurer pursuant to N.J.S.A. 10:5-31 et seq., as amended and supplemented from time to time and the Americans with Disabilities Act.

The contractor or subcontractor agrees to make good faith efforts to meet targeted county employment goals established in accordance with N.J.A.C. l7:27-5.2.

The contractor or subcontractor agrees to inform in writing its appropriate recruitment agencies including, but not limited to, employment agencies, placement bureaus, colleges, universities, and labor unions, that it does not discriminate on the basis of age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex, and that it will discontinue the use of any recruitment agency which engages in direct or indirect discriminatory practices.

The contractor or subcontractor agrees to revise any of its testing procedures, if necessary, to assure that all personnel testing conforms with the principles of job-related testing, as established by the statutes and court decisions of the State of New Jersey and as established by applicable Federal law and applicable Federal court decisions.

In conforming with the targeted employment goals, the contractor or subcontractor agrees to review all procedures relating to transfer, upgrading, downgrading and layoff to ensure that all such actions are taken without regard to age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex, consistent with the statutes and court decisions of the State of New Jersey, and applicable Federal law and applicable Federal court decisions.

The contractor shall submit to the public agency, after notification of award but prior to execution of a goods and services contract, one of the following three documents:

- Letter of Federal Affirmative Action Plan Approval;
- Certificate of Employee Information Report; or
- Employee Information Report Form AA-302 (electronically provided by the Division and distributed to the public agency through the Division's website at: http://www.state.nj.us/treasury/contract_compliance).

The contractor and its subcontractors shall furnish such reports or other documents to the Division of Purchase & Property, CCAU, EEO Monitoring Program as may be requested by the office from time to time in order to carry out the purposes of these regulations, and public agencies shall furnish such information as may be requested by the Division of Purchase & Property, CCAU, EEO Monitoring Program for conducting a compliance investigation pursuant to N.J.A.C. 17:27-1.1 et seq.

EXHIBIT B

STOCKHOLDER OR PARTNERSHIP DISCLOSURE CERTIFICATION

N.J.S.A. 52:25-24.2 (P.L. 1977 c33)

[https://law.justia.com/codes/new-jersey/2013/title-52/section-52-25-24.2/]

Vendors must comply with Chapter 33, Public Laws of 1977 (N.J.S.A. 52:25-24.2), requiring bidders for public contracts to submit a list of names and addresses of all stockholders owning ten percent (10%) or more of their stock of any class, or in the case of a partnership, the names and addresses of those partners owning ten percent (10%), or greater interest therein.

No corporation or partnership shall be awarded any contract nor shall any agreement be entered into for the performance of any work or the furnishing of any materials or supplies, the cost of which is to be paid with or out of any public funds, by the State, or any county, municipality or school district, or any subsidiary or agency of the State, or of any county, municipality or school district, or by any authority, board, or commission which exercises governmental functions, unless prior to the receipt of the bid or accompanying the bid, of said corporation or said partnership, there is submitted a statement setting forth the names and addresses of all stockholders in the corporation or partnership who own 10% or more of its stock, of any class or of all individual partners in the partnership who own a 10% or greater interest the rein, as the case may be. If one or more such stockholder or partner is itself a corporation or partnership, the stockholder holding 10% or more of that corporation's stock, or the individual partners owning 10% or greater interest in that partnership, as the case may be, shall also be listed. The disclosure shall be continued until the names and addresses of every non-corporate stockholder and individual partner, exceeding the 10% ownership criteria established in this act, have been listed.

FAILURE OF THE BIDDER/RESPONDENT TO SUBMIT THE REQUIRED INFORMATION IS CAUSE FOR AUTOMATIC REJECTION.

N.J.S.A. 40A: 11-23.2

☐ I certify that the list below contains the name and addresses of all stockholders holding 10% or more of the issued and outstanding stock of the undersigned.

☐ I certify that no one stockholder owns 10% or more of the issued and outstanding stock of the undersigned.

LEGAL NAME OF BIDDER: _____

Check which business entity applies:

☐ Partnership	☐ Corporation	☐ Sole Proprietorship
☐ Limited Partnership	☐ Subchapter S Corporation	☐ Other _____
☐ Limited Liability Partnership	☐ Limited Liability Corporation	

Complete if the bidder/respondent is one of the 3 types of Corporations:

_____ _____

Date Incorporated Where Incorporated

_____ _____

Name and Title Date

Green Design –Municipal Buildings Resolution

RESOLUTION ENDORSING THE ADOPTION OF GREEN BUILDING PRACTICES FOR CIVIC, COMMERCIAL AND RESIDENTIAL BUILDINGS

WHEREAS, buildings account for 39% of CO2 emissions – more than either the transportation or industrial sectors. In addition, buildings account for nearly 12% of potable water use, 65% of waste output, and 71% of electricity consumption in the U.S. (U.S. Green Building Council).

WHEREAS, green building – also referred to as sustainable or high-performance building -- is a collection of better design, construction, and operating practices that have the potential to reduce or eliminate the negative impacts of development on the environment and on human health. There are many examples of green building programs and guidelines that have been propagated at national, state, and municipal levels. They commonly address energy efficiency and carbon emissions reduction, water conservation, waste reduction, healthy and sustainably produced materials, indoor air quality, occupant productivity and health, and other components of green building and sustainable development.

WHEREAS, the purpose of this resolution is to enhance the public welfare and assure that commercial, residential and civic development is consistent with the (identify name of municipality) desire to create a more sustainable community by incorporating green building measures into the design, construction, operation and maintenance of buildings.

WHEREAS, the City desires to set a leadership example in the area of green building through the implementation of energy efficiency audits and upgrades to the municipal building stock, continued procurement practices…etc. (e.g. improve water conservation, reduce light pollution, increase construction waste recycling).

NOW, THEREFORE, BE IT RESOLVED that the (Name of Municipality) hereby implements a Green Building Policy that:

will consider opportunities to incorporate green building measures into the design, construction, operation and maintenance of municipal buildings and facilities.

BE IT FURTHER RESOLVED,

CERTIFICATION

I, _____, Clerk of the (Name of Municipality), in the County of (Name of County), do hereby certify that the foregoing is a true and correct copy of a resolution duly adopted by the Township Council at a regular meeting held on the __ day of ____ (year).

IN WITNESS WHEREOF I have hereunto set my hand and affixed the seal of said (Name of Municipality) this __ day of _____ (year).

MODEL GREEN DEVELOPMENT CHECKLIST

1. Context

Connectivity to existing neighborhoods may have many benefits to the health and safety of residents, the economy and diversity of the area, and the surrounding environment. To ensure a proposed development provides the optimum level of connectivity to existing neighborhoods, the following checklist questions are meant to:

1. Encourage development within and near existing communities and public transit infrastructure.
2. Encourage improvement and redevelopment of existing cities, suburbs, and towns while limiting the expansion of the development footprint in the region to appropriate circumstances.
3. Reduce vehicle trips and vehicle distance travelled.
4. Reduce the incidence of obesity, heart disease, and hypertension by encouraging daily physical activity associated with walking and bicycling.

CONTEXT	YES	NO	DESCRIPTION
Is the site a redevelopment, brownfield or infill location?			
Is the site served by public transit, pedestrian and bicycle networks?			
Is there train service within 1/2 mile or bus service within 1/4 mile?			
Are the roads within the development designed as "Complete Streets?"			
Does the development include historic preservation or adaptive reuse of existing facilities?			
Does the development include historic preservation, or adaptive reuse onsite? Does the site's location, scale or use support any historic building conditions off site within its context?			
Does the development provide or increase the following:			
A mix of land use types? Please list.			
Housing diversity by type and income?			
Civic and public spaces (or have proximity to them)?			
"Recreation facilities and green space/parks (or have proximity to them) and is it part of an integrated ecological network?"			

CONTEXT	YES	NO	DESCRIPTION
Land use densities greater than the current zoning or surrounding context?			
Alternative parking designs such as reduced parking ratios, a percentage of compact stalls, banked parking, shared parking, priority parking for low emission vehicles and provisions for bicycle storage?			
"Local food production, access to off-site facilities or opportunities			
for Community Supported Agriculture (CSA) or farmers' markets?"			
A plan for promoting and educating people on green features?			
Open space?			
Natural features?			
Regional stormwater management?			
Is the site part of a district energy or water infrastructure?			

2. Site Development

Green Design strategies for Site Development generally refer to how to "design with nature" or build on an individual site so that disturbance to the site is minimal to none. It is important that the design considers short term resiliency and long-term sustainability solutions. This can be accomplished using some or below all of the strategies.

In general, does the design provide for the following?

SITE DEVELOPMENT	YES	NO	DESCRIPTION
Minimum site disturbance during construction?			
Increased Erosion and Sedimentation Control (beyond county or municipal requirements)?			
Low Impact Design features?			
Bio-swales			
Rain gardens			
Green Roofs			
Pervious pavements			
Green Walls			
Trees			
Indigenous species (non-invasive species, low maintenance landscaping)?			
Onsite management of vegetative waste?			
Regenerative Design?			
Habitat, wetlands or water body conservation or conservation management strategies			
Habitat, wetlands or water body restoration			
Does the site minimize heat island effects through reduced paving, landscaping or other methods?			
Does the site provide alternatives to single occupancy vehicles such as van spaces, bike storage and changing facilities, and alternative energy vehicle parking?			
Does the development include historic preservation or adaptive reuse of existing facilities?			
Does the site include public art and opportunities for civic events?			
Does the site include Light Pollution Reduction and energy efficient			
site lighting and controls?			
Does the site consider landscape and stormwater maintenance specifications that employ integrated pest management post-bond to assure implementation for five years after occupancy?			

3. Green Building

Green buildings" utilize a sensitivity to the environment in their design by incorporating strategies like energy and water efficiency, high indoor air quality, and sustainably sourced (or recycled) materials. Green buildings are the foundation for a sustainable neighborhood and should be considered where new developments are planned.

This checklist lists important green building design aspects in the areas of Water Reduction, Energy, Indoor Air Quality, Materials, and Social features. Communities and developers should use this checklist to identify features to incorporate into their site plan or subdivision planning.

GREEN BUILDING	YES	NO	DESCRIPTION
Does the building(s) meet the criteria for a Certified Green Building?			
Is the building oriented to maximize benefits of daylighting, viewsheds and energy and to minimize detrimental impacts on surrounding sites?			
Does the building respect the scale of the context through its design?			
Water Reduction			
Does the building provide a 20% or greater reduction of water use beyond the minimum water efficiency standards set by the EPA or local government, whichever is greater?			
Does the building employ water conservation features – including low-flow fixtures, waterless urinals, and/or sensor-controlled faucets?			
Does the building incorporate rainwater, gray water + stormwater capture and re-use?			
Is wastewater treated on site and recharged to the ground?			
Energy			
Does the building reduce energy usage through efficient heating and cooling, geothermal technology, enhanced daylighting, efficient lighting, occupant controls and an efficient building envelope?			
Does the project incorporate Energy Star-labeled building products?			

GREEN BUILDING	YES	NO	DESCRIPTION
What is the anticipated energy savings?			
What are the anticipated carbon emission reductions?			
Indoor Air Quality			
Is natural ventilation and efficient use of outdoor air during heating and cooling periods utilized?			
Are other measures being used to improve indoor air quality? Please describe			
Materials			
Is an existing building being reused? 100%, 75%, 50%?			
Are there construction waste management plans in place?			
Are there solid waste management plans in place?			
Are building materials reused?			
Do building materials contain recycled content?			
Are building materials sourced within the region (within a 500-mile radius)			
Social			
Does the site implement indigenously inspired art in the landscape?			
(i.e. sculpture; garden; mural/ relief; artistic site furnishing, etc.) - one application per building or per 300 residential units.			