The City of Newark
Conservation Advisory Commission
Annual Report for 2017

The City of Newark Conservation Advisory Commission (CAC) Annual Report for 2017

Contents

Overview of CAC Accomplishments in 2017

This report summarizes the activities of the City of Newark's Conservation Advisory Commission in calendar year 2017. Key CAC accomplishments include:

1. The CAC revised its bylaws and procedures based on the recommendations of the City's Boards and Commissions Review Committee.

2. The CAC recommended to Council that the City revise its Green Energy Fund financial incentives for homeowners to install solar, wind and/or geothermal. The incentives needed to be altered due to the declining cost of solar panels. The CAC revised its initial recommendation based on feedback from Council, which then approved the revised recommendation.

3. The CAC helped the City's Department of Public Works identify and interview UD graduate students for an internship working with staff to create a Green Energy Dashboard for the City's website. The dashboard will help raise citizen awareness of the City's green energy initiatives for the benefit of the environment and the taxpayer. The City was not able to hire the intern for either the Fall 2017 or Spring 2018 semesters due to staff shortage in the Public Works department or high competition for UD graduate students.

4. The CAC hosted a booth at Community Day to raise awareness of the City's green energy and conservation programs. The CAC members promoted energy efficiency to citizens in a fun and engaging way, and polled citizens about their knowledge of and attitude toward Newark's anti-idling ordinance. *95% were in favor of the anti-idling ordinance.* The CAC also collected conservation suggestions from citizens. *The suggestion with the most interest from citizens was for the City to invest in more parks, more trees and more gardens.*

5. In response to citizen input, the CAC recommended to City Council that the City revise its current process of re-painting lead-painted water towers in order to diminish possible adverse health and environment impacts of improperly contained lead paint particles.

6. The CAC recommended to City Council that it approve the concept plan for the proposed storm water project for the Rodney Dorm property.

7. The CAC awarded the Better Newark Award to: 1) Catriona and Stuart Binder-Macleod for the alternative energy improvements they made to 401 Orchard Road (District 4). The CAC worked with the City Secretary's Office to reform a Better Newark Award advertising channels and award nomination process.

8. The CAC initiated a meeting with UD's Sustainable Newark director, Dr. Michael Chajes, to discuss possible UD and City cooperation to promote sustainable development.

9. The CAC provided guidance to Michael Fortner in the Planning Department on submission of the City's grant to DENREC for a Sustainable City Planning Grant, which was awarded to the City.

10. The CAC offered to provide quarterly content to the Newark Post about conservation issues facing the City. The Newark Post accepted and the CAC will provide short articles to the Post on a quarterly basis in 2018.

CAC Background

Ordinance 77-56 created the CAC in November 1977,

> "to advise in the development, management, and protection of its natural resources with appropriate consideration of Newark's human and economic resources. The Commission shall concern itself with conservation in its broadest sense and may, among its activities: (a) Recommend to City Council a program for ecologically suitable utilization of all wet lands, valley streams, and flood plains and other land areas, the condition and use of which will affect the environmental quality of life in the City of Newark; (b) Shall file an annual report; (c) Maintain informal liaison with the Planning Commission, the Parks and Recreation Department, the City Manager, and the City Council, and cooperate with other public and private bodies organized for similar purposes: (d) In addition to the foregoing, carry out any other duties, tasks, or responsibilities, consistent with the objectives of this Commission assigned to it by resolution of City Council."

Ordinance 77-56 gave examples of programs that may be considered by the Commission, such as street tree replacement; improved recycling; beautification plans for volunteer groups; guidelines for multiple use of open space and public areas; community gardens; energy conservation; and review of Zoning Code amendments to encourage conservation, and also stated that "the above list shall not, however, limit the program which the Commission may undertake or be requested to undertake."

CAC Membership

The CAC has 9 members when all positions are filled.

Appointment Type	**CAC Member**	**Term Expiration Date**
Mayor's Appointment	John Hornor	3/15/18
Mayor's Appointment	Kismet Hazelwood	3/15/20
Mayor's Appointment	Katherine Sheedy	3/15/19
District 1	Ajay Prasad, Ph.D.	3/15/19
District 2	John Wessells	3/15/20
District 3	Bob McDowell	3/15/18
District 4	Sheila Smith	3/15/20
District 5	George Irvine (Chair as of May 2015)	3/15/18
District 6	Jason Kramer	3/15/19
Staff Representative (ex officio)	Tim Filasky, Acting Director, Public Works & Water Resources	NA
Staff Secretary	Tara Schiano & Sarah Campanelli, City Secretary's Office	NA

An updated CAC roster is maintained on the City's web site at www.cityofnewarkde.us/DocumentCenter/Home/View/620 (pdf format).

Boards and Commissions Review Committee Recommendations for CAC

The CAC followed the recommendations of the Boards and Commissions Review Committee and made the following changes to its bylaws and processes:

1. CAC will make quarterly, verbal reports to Council rather than written reports;
2. The position of CAC Secretary has been removed from the bylaws since City staff perform this function;
3. The election of CAC officers (chair and co-chair) will be done in person at the December meeting each year;
4. The bylaws include an orientation process for new members of the CAC;
5. The CAC will receive FOIA training at some point in 2018, working in coordination with the City Secretary's office;
6. The CAC will enhance its public outreach efforts via improved Better Newark Award advertising and nomination processing; attending Community Day and other appropriate events to raise awareness; offering periodic commentary on conservation issues affecting the City to the Newark Post.

A Better Newark Award

The CAC worked with City staff in the public relations and city secretary's departments to make citizens more aware of the Better Newark Award through the City's website and routine public awareness campaigns.

In July, the CAC awarded the BNA to Catriona and Stuart Binder-Macleod for the alternative energy improvements they made to 401 Orchard Road. The property has solar panels and a huge variety of plantings, and a water permeable driveway.

Rodney Complex

In November, The made the following recommendation to City Council:

> "The CAC recommends that city council approve the concept plan for the Rodney Stormwater Park Project. The CAC has reviewed the project's environmental benefits and judged them worthy of city investment. The project will enhance our urban environment, stormwater management, quality of life, and public education opportunities."

Green Energy

In 2017, the CAC continued to focus on supporting and stimulating Green Energy initiatives in the City, continuing its 2014 through 2016 efforts in this regard. The three focus areas include: 1) Promoting citizen use of green energy; 2) creating a Green Energy Dashboard to educate citizens about the City's green energy efforts and the cost savings thereof; and 3) using Newark Community Day to both promote green energy to citizens and learn about citizen conservation concerns.

Energy Efficiency Programs

Scott Lynch of DEMEC gave a presentation in March highlighting a program that municipalities could increase energy efficiency at their utilities. He highlighted that the programs could be undertaken by the city to increase efficiency by 0.25%. These programs will be paid for out of existing money which originally would go to Green Energy reserve funds but instead fund this endeavor. After a lengthy discussion with Mr. Lynch, representatives of American Municipal Power and VEIC who would carry out the programs, and City of Newark Finance Director Mr. DelGrande, the CAC recommended:

"The CAC Recommends that City Council give direction to its representative to the DEMEC board to support DEMEC's energy efficiency program known as Efficiency Smart. We believe the program is an adequate starting point for increased energy efficiency for residents and businesses in the city. We also believe that more aggressive energy efficiency targets are warranted in future years beyond the targets in the DEMEC energy efficiency program. The program should benefit the whole Newark community, foster economic development and raise citizen awareness of the merits and cost savings of energy efficiency."

Updated Incentives for City of Newark's Green Energy Programs

The money in the Green Energy Fund is based on the amount of electricity sold by the city. Each resident pays a certain percentage of their bill into the Green Energy Fund that can then be distributed to support sustainable energy or energy conservation projects. At present, Green Energy funds are trifurcated along the following three categories:

1. Private projects (PV, Wind Turbine, Fuel Cell, Geothermal, and Solar Water Heater)
2. Public renewable energy installations (solar parks, wind turbines, etc.)
3. Municipal energy conservation projects

There was concern that the reimbursement rates under Trifurcation 1 above (Private Projects) were based on total installed costs which could be subjective or variable by vendor. A better approach would be to base the reimbursement on the actual wattage of the installed system. Accordingly, the reimbursement rates for PV, geothermal and solar hot water have now been tied to wattage (or system size). In general, max payout levels have been either maintained or increased. In addition, some reimbursement rates have been modified to make them consistent with the state's incentives.

The table below shows the final new Green Energy Fund Incentive Levels for Private Projects recommended for implementation by the CAC and subsequently approved by City Council in October 2017. This process began in spring 2017 and took several months to complete as City Council raised important points that had to be discussed back-and-forth before they were finally resolved.

Green Energy Fund Incentive Levels for Private Projects (Trifurcation 1)

	Current Incentive Details	**Proposed Incentive Details**		
		Residential	**Non-Residential**	**Non-Profit**
PV	33.33% of installation costs up to NTE* caps for residential and business ($7500/$15,000)	• $1.0 per watt for first 5kW • $0.50 per watt over 5kW • Max grant $7500	• $1.0 per watt for first 5kW • $0.50 per watt over 5kW • Max grant $15,000	• $1.25 per watt • Max grant $10,000
Wind	33.33% of installation costs up to NTE caps for residential and business ($7500/$15,000)	• 33.33% of installation costs • Max grant $7500	• 33.33% of installation costs • Max grant $15,000	• 33.33% of installation costs • Max grant $10,000

Fuel Cells	50% of installation costs up to NTE set caps for residential and business ($7500/$15,000)	• 33.33% of installation costs • Max grant $7500	• 33.33% of installation costs • Max grant $15,000	• 33.33% of installation costs • Max grant $10,000
Geothermal	50% of installation costs up to NTE caps for residential and business ($3,000/$20,000) OR $500/ton whichever is lower	• $800 per ton for first 2 tons • $700 per ton over 2 tons • Max grant $4400	• None - SEU already provides a geothermal grant to Non-Residential customers	• None - SEU already provides a geothermal grant to Non-Profit customers
Solar Hot Water	50% of DHW installation costs up to NTE caps for residential and business ($3,000/$10,000 or $5,000/$10,000 for radiant systems)	• $1.00/OG300 or Licensed DE Professional Engineer Calculated kWh Saved • Max grant $3000 or $5000 for radiant systems	• None - SEU already provides a solar hot water grant to Non-Residential customers	• None - SEU already provides a solar hot water grant to Non-Profit customers

*Not to Exceed

Notes:

PV: In the proposed incentives, PV system size maxes out at 10 kW for residential, 25 kW for non-residential, and 8 kW for non-profit. Non-profits typically have less funding to pay for a system so a higher $/watt incentive is more meaningful. However, a non-profit would not be excluded from applying for a non-residential grant, which provides a lower incentive per watt but incentivizes more watts. Assuming an installed cost of $3/W, the rebates for residential/non-residential 5 kW, 10 kW, and 25 kW PV systems are 33%, 25%, and 20%, respectively. For non-profits, the rebate is 42%.

Wind and Fuel Cells: There has been zero interest in wind and fuel cells so far. Nevertheless, the CAC does not wish to preclude future applications. The payout for fuel cells has been reduced to 33.33%. The reason for not tying wind and fuel cell rebates to wattage is that the capital cost of these units is large compared to the labor cost for installation leaving less room for variability. Furthermore, there are many designs of wind turbines (horizontal axis vs. vertical axis) and types of fuel cells (PEM vs. SOFC) whose lifetimes, and therefore costs, can vary widely.

Geothermal: The incentive has been made consistent with the state incentive. The max payout for residential has been increased to $4400 to allow a max size of 6 tons, which is the upper end for residential systems. Incentives for non-residential and non-profit have been removed as the Sustainable Energy Utility already provides grants to those entities.

Solar Hot Water: The incentive has been made consistent with the state incentive. The max payouts are the same as before. Incentives for non-residential and non-profit have been removed as the Sustainable Energy Utility already provides grants to those entities.

In recent years, the Green Energy Fund has not received many applications: one in 2015, 2 in 2016 and 1 in 2017, all for PV. In contrast, 23 applications were approved for PV under the leasing option in 2017. One way to increase GEF applications would be to advertise it better. For example, the City's Electric Department could insert a flyer advertising the program with the electric bill, say twice every year.

During the July 10, 2017 Council meeting, Council asked if a builder incorporating solar in new construction would be considered residential or non-residential. According to the definitions in the Green Energy Fund Regulations:

> Residential means the class or classes of customers purchasing electric power for household uses. When used as an adjective with respect to Qualified Systems or Green Energy Program Grants, such term refers to systems owned by, or leased to, or grants awarded to Residential persons.
>
> Nonresidential means all classes of customer purchasing electric power for uses other than for individual households. These groups of customers generally purchase electric power for commercial and industrial purposes. When used as an adjective with respect to Qualified Systems or Green Energy Program Grants, such term refers to systems owned by, or leased to, or grants awarded to Nonresidential persons.

According to these definitions, single-family homes and townhouses where each resident owns a home would be classified as residential. In this case, the builder may complete/help the homeowner through the grant application process and the grant may be received by the homeowner or signed over to the builder. Rental apartment buildings would be considered commercial, and therefore non-residential.

The CAC also discovered that contractors and citizens has misinterpreted the Green Energy Fund's requirements for the orientation of a residence. The house does NOT need to be oriented due south but rather any orientation in an 180 degree arc between just South of due East and just South of due West is permitted.

New Green Energy Ideas

Two new ideas for green energy in the City were discussed during the latter part of 2017. The first idea was to install charging stations for electric cars both at the Municipal building for use by city vehicles, and also some spots possibly Downtown where locals could charge their cars while shopping/eating. DNREC has issued a call for proposals to fund such charging stations, so it may not cost a lot of money for the city to do this. CAC is committed to continuing research and discussion into this idea in 2018.

The second idea was to allocate green energy funding to install solar security lighting around the city. An immediate opportunity to do this would be to fund the illuminated portion of the Fairfield Trail, which runs from Fairfield Crest down to the Pomeroy Trail. There are obviously other places where security lighting can be deployed, including the future bridge over White Clay Creek near Paper Mill Rd. CAC will continue to also look into other solar lighting opportunities in 2018.

LED lights

The table below illustrates the cost savings the City has benefitted from since it installed LED street lights. These savings are tangible benefits of sustainable development and are included in this report to illustrate the positive fiscal and environmental impact City Council action on Green Energy initiatives can have for the citizens of Newark.

The CAC would like to highlight that by installing LED lights Newark avoided 582 metric tons of CO2 emissions avoided.

Total Annual and Lifetime Savings with Simple Payback and Benefit Cost Ratio								
Muni	Annual Savings (kwh)	Annual Avoided Energy ($)	Annual Avoided O&M ($)	Total Annual Savings ($)	Lifetime Savings ($)	Total Project Cost ($)	SPB (yrs)	BCR
Lewes	25,285	$ 1,735	$ 4,100	$ 5,835	$ 105,026	$ 33,450	5.73	3.1 : 1
Newark	829,029	$ 56,880	$ 78,023	$ 134,903	$ 2,428,248	$ 574,773	4.26	4.2 : 1
Seaford	110,525	$ 7,583	$ 11,603	$ 19,186	$ 345,350	$ 88,947	4.64	3.8 : 1
Smyrna	98,114	$ 6,732	$ 5,453	$ 12,185	$ 219,323	$ 74,118	6.08	2.9 : 1
Dover	30,376	$ 2,084	$ 1,558	$ 3,642	$ 65,558	$ 41,130	11.29	1.6 : 1
Total	1,093,329	$ 75,013	$100,737	$ 175,750	$ 3,163,505	812,418	4.62	3.8 : 1

Table 3.6 Simple Payback and Benefit Cost Analysis by Community

Source: Delaware Municipal Electric Corporation (DEMEC). (2017). *LED Street Lighting Conversion Project, 2016 M&V Report*

Green Energy Dashboard

The CAC is currently searching for a suitable UD graduate student to intern in the City's Public Works department to construct a Green Energy Dashboard to share with citizens the environmental and financial benefits of the City's investments in green energy. The information contained in the illustrative table above is exactly the kind of information that the Green Energy Dashboard could share with citizens.

To date, finding the right graduate student has been hampered by high competition from other organizations. The CAC will continue to assist the City to find an intern for this useful project.

COMMUNITY DAY - September 17th, 2017

At this year's Community Day, the CAC focused on Newark's Anti-Idling Ordnance. We asked visitors to respond to the following questions:

1. Did you know that the City of Newark has an Anti-Idling Ordinance to improve air Quality?
    a. Yes 64 responses
    b. No 71 responses
2. Do you support enforcement of that ordinance?
    a. Yes 121 responses
    b. No 0 responses
    c. Not sure 3 responses

Those who responded to the questions received a translucent recycled bottle pen (of 250 pens purchased 200 were given out) inscribed "Conservation Advisory Commission, Recycle-Reuse-Repurpose. Keeping Newark Green".

Green T-Shirts (inscribed "Conservation Advisory Commission, Recycle-Reuse-Repurpose. Keeping Newark Green") were given to the first 80 visitors who wrote ideas and placed them in our **Suggestion Box**. In total we received 195 responses, of which, 13 were unintelligible. The results were as follows:

- More gardens, parks and trees
    - More Parks 12 responses
    - More Trees 12
    - More Natural Gardens 10

o Stop Cutting down trees	4	
o **Total**		38
• Recycling		
o Get businesses Involved	18	
o Increased Recycling at events	13	
o Advertise Benefits	4	
o Get kids involved	2	
o **Total**		37
• Transportation		
o Bike Lanes	8	
o Better bus routes	6	
o Parking for E vehicles	5	
o Divert trucks from Newark	3	
o **Total**		22
• Encourage Solar and Wind projects		18
• Better building designs (Aesthetic, sustainable)		14
• Better Pedestrian Design (cross walks, signs, light timing)		14
• Advertise Sustainability (signage, etc…)		12
• More Educational Events (Gardening, pesticides)		10
• Public water fountains, bottle filling stations		6
• More Social Programs (Community Day, Festivals)		6
• More Police		3
• No Taxes		2
Total Responses		**182**

CAC also had a bean bag toss game for children, everyone received a snack for participating. Each commissioner purchased a Kelly green short sleeve polo shirt embroidered in white "CAC working for a sustainable Newark". CAC expenses for Community Day totaled $1,044.29 ($455.71 under budget).

Repainting Water Towers in Newark

In June, the CAC recommended to City Council that the City improve its contractual requirements of vendors hired to repaint city water towers in order to ensure that health and environmental risks are mitigated. The CAC acted due to genuine citizen concern about the repainting of the Windy Hills water tower. Council decided to accept the CAC recommendation and to go one step further and consider writing new regulations to guide the City's water tower repainting process.

Future Goals for 2018

Throughout the year, the CAC continuously discusses new environmental conservation ideas. These ideas form the basis of future CAC recommendations to City Council. A list of the ideas for possible future CAC consideration is below:

- Create a program to incentivize the use of reusable bags at City businesses from year to year. It is still the opinion that something needs to be done to limit the use of plastic bags. The CAC will keep track of any state level bills which address this issue.

- Promote bike lanes in the City on roads such as Dallam Road, West Park Place and Casho Mill Road.
- Arbor Day in Newark activities to promote the planting of new trees in City parks and riparian zones. Get community organizations involved in the efforts to ensure civic engagement with tree planting. Choose areas that need revitalization and have plantings in those areas, assuming the citizens are interested in doing so.
- Wind Power – find a location to demonstrate how wind turbine works to the public. Ideal venues: Newark Night, Community Day. Could grant money be found to fund such ideas?
- Conduct an electronic survey asking City resident what they would like the CAC to accomplish in the future. Could a notice be included with electric bill mailings providing information to links (i.e. a survey) on the City website?
- Anti-Idling – what else should CAC do to decrease idling of motor vehicles in the City?
- Public Transport Network for Newark and in Newark? How can public transport best be supported by the CAC?
- Install an electric vehicle recharging stations at City Hall or other places in Newark.
- Contribute to the establishment of a Sustainable Partnership between the City of Newark and the University of Delaware.
- Consider recommendations of the State of Delaware Ecological Extinction Task Force in the future work of the CAC.