

Beautification and Energy Efficiency Board - 1st Annual Report

Revised with Feb 15, 2019 Input

The Beautification and Energy Efficiency Board (BEEB) was established in March 2018 [Ordinance No. 2017- 49] specifically to "... identify and make recommendations to the [Melbourne] City Council concerning affordable strategies associated with conservation, renewable energy, and energy efficiency", and more specifically "... to achieve clean, efficient, renewable and affordable energy in all operations by 2035".

This advisory board has met monthly since its inception and offers, as its 1st annual report, the following summary of energy efficiency opportunities deemed worth-a-closer-look based on learnings from City Department presentations, the City's 5-year Capital Improvement Plan (CIP), presentations from energy performance contracting experts, and board member discussions. A bulleted, unprioritized list of recommendations is followed by more details regarding each recommendation.

Recommendations

1. City Departments continue their current practice of identifying and pursuing readily doable / affordable energy efficiency alternatives in equipment, replaceable items and maintenance in all City operations. [aka "the low hanging fruit"]
2. The City actively consider the energy savings and clean energy alternatives in upcoming decisions on facility and equipment upgrades to incorporate roof-top solar panels, waste-to-energy conversion, and next generation hybrid police patrol cars and pickup trucks.
3. The City utilize its current 5-year CIP to consider, on a case by case basis, the 20+ identified opportunities for energy efficiency improvements. A top priority would be the new Police Department Headquarters Building.
4. The City create a log of all energy efficiency achievements undertaken as a result of City Departments and City Council actions; and to share this information with the public.
5. The City consider comprehensive energy conservation and savings performance contracting offered by Energy Service Companies (ESCOs). The BEEB stands ready to actively support this effort.
6. The City establish an energy management policy and an energy management team, and potentially an incentive program for employees who bring forward an action that is subsequently implemented.

Recommendation Details

Recommendation #1

The BEEB has received two presentations from City Departments to date - Utilities (water and wastewater) on July 20, and Fleet on August 17. Both covered energy efficiency goals, plans and accomplishments having to do with energy utilizing items / equipment / practices. Both departments appear to be focused on and successfully tackling important low hanging fruit; for example,

- replacing lighting, pumps, motors, blowers, mixers, production well drivers, treatment membranes, trickling filters (at the Grant Street Water Reclamation Facility), etc. with more energy efficient components and technologies at the water and wastewater treatment plants;
- replacing gasoline powered vehicles with electric or hybrid vehicles based on lifetime cost comparisons;
- optimizing maintenance schedules and use of materials (e.g., synthetic oils) to lower energy usage/cost.

Recommendation #2

Beyond the low hanging fruit and current City Department practices, several additional opportunities were identified by BEEB members based on the Department presentations that merit further consideration. They include both energy utilization and energy generating opportunities to achieve the stated goals of immediate energy savings as well as a move toward clean energy. These are:

- Installing solar panels on the roof at the Lake Washington water treatment facility, or another cost-effective solar project(s).
- New or expanded water reuse projects to take full advantage of the energy and cost currently being expended to treat wastewater to reuse standards.
- Moving from land disposal of treated wastewater solids (biosolids) and municipal trash to renewable energy production from those solids; for example:
 - biosolids waste processing using the Janicki Omni Processor, or
 - co-mingled incineration to produce heat and/or electricity, or
 - sludge digestion to produce methane for use as an energy source including compressed natural gas or other forms to power City facilities and/or fleets.The City is encouraged to evaluate the cost and benefits of these technologies, particularly in advance of upcoming major modifications to the city's two wastewater treatment plants.

- Promote and encourage, through data gathering and education, the utilization of next generation hybrid police patrol cars and pickup trucks. This could significantly expand the City's opportunity to use hybrid vehicle technology across its fleet that now includes more than 150 gasoline-powered patrol cars and pickup trucks. (For example, see <https://www.government-fleet.com/279703/the-next-generation-of-patrol-vehicles> and <http://m.policemag.com/article/3304/the-hybrid-patrol-car>)

Recommendation #3

Based on department briefings on energy efficiency efforts, it is apparent that City of Melbourne employees are considering energy efficiency in their planning for their departments. That led the BEEB to review the City's 5-year CIP, looking for energy efficiency opportunities. No fewer than 20 potential upcoming opportunities were identified including, for example, solar energy, no-flush toilets, and waste-to-energy, hardware upgrades, and the new police building (*see attached list*). City staff should be encouraged to consider the feasibility of each, on a case by case basis, and make the determination whether there are cost effective energy efficiency options. A top priority would be the new Police Department Headquarters Building.

Recommendation #4

The BEEB also recommends the creation of a single source of information to document those energy efficiencies considered and those implemented in all Departments. Documentation of past and ongoing energy saving efforts might well be of value for seeking matching funds for upcoming projects, and would also provide welcome periodic information for the taxpaying public to recognize the efforts of the City on their behalf.

Recommendation #5

Consider energy conservation and savings performance contracting offered by Energy Service Companies (ESCOs). The BEEB received the following information (in presentations and in writing) in its pursuit of ESCO examples that could be relevant to the City of Melbourne.

- In a January 2019 presentation, Mr. Alexander Mack, the Program Administrator of the Florida Department of Agriculture and Consumer Services, Office of Energy provided an overview of the five steps of energy performance contracting. He noted several Florida cities (e.g., Jacksonville, Miami, Orlando and Tallahassee) that have undertaken ESCOs. Melbourne's Publics Works & Utilities Department director indicated the City looked at ESCOs five or so years ago, but it might be prudent to revisit.

The state of Florida's website provides details to navigate the ESCO process <http://fl.energyservicescoalition.org/resources/documents>, and <https://energyservicescoalition.org/model-instruments>

At that BEEB meeting, two offers to conduct no-cost preliminary assessments/audits of the City's facilities and CIP were made during public comment. Both came from entities on the vetted NAESCO list of providers. They were:

- i. Ken Harden with Energy Systems Group
- ii. Madonna Rykken with FPL Energy Services

The BEEB recommends the City consider accepting both of these offers of free preliminary ESCO assessments which would then allow the Departments and City

Manager to determine whether an ESCO would be worth pursuing. The BEEB would be available to provide support as necessary.

- In a geographically relevant ESCO, it was also learned that in 2012, the Brevard Board of County Commissioners entered an energy services contract with ConEdison. The service began with a thorough audit of the County's facilities. The energy and cost savings analysis included an annual utility savings of \$1.249 million. The project's cost was financed with a Non-Ad Valorem Revenue Note which is being re-paid with utility bill savings over 20 years. The cost savings are guaranteed. Details are available through the Director of the Brevard County Central Services Department (teresa.camarata@brevardfl.gov).

Attachment for Recommendation #3

CIP Energy Efficiency Opportunities in the City's 5-Year Capital Improvement Plan

Parks and Recreation

- FY20-FY23 lighting at Fee Ave Tennis Courts and 5+ ballfields
 - Solar Energy
- FY21 Fee Ave and Jimmy Moore Pro Shops & Restrooms
 - Solar energy AND no flush toilets
- FY20 new deck lighting at Fee Ave Pool
 - Solar Energy
- FY19 Carver Park lighting
 - Solar Energy
- FY21 Front Street Park Restroom Replacement
 - Solar energy for lighting, No flush toilets

Facilities Management

- FY19 AC Unit for Data Center at City Hall
 - Energy Efficient model
- FY22-FY23 roof replacements at Fleet Management Building and Melbourne Auditorium
 - Solar energy
- FY19 Harper Road Complex Parking
 - Solar Energy for any lighting

Water Production/Water Reclamation

Solar energy, or waste-to-energy option for the multimillion dollar upgrades for sewer and drinking water projects spanning FY19-FY22 and beyond.

- FY19 Replacement RO Booster Pump and Motor Assemblies
- FY19-FY20 Surface Water Treatment Plant Replacement Generator
- FY20 Variable Frequency Drive Updates for Canova Station

- FY20 Upgrade Auto Transfer Switches at the RO Water Treatment Plant
- FY22 Grant Street Reuse expansion
- FY19 Roof Replacement DB Lee

Police Department

- FY19 Police Department Headquarters Building
 - Solar energy and no flush toilets

Redevelopment CRA

- FY19 Phase I Eau Gallie District Lighting
 - Solar Energy
- FY22 Bus stop shelters
 - Solar Energy for lighting

Amendment #1

Meeting Dates During First Year since Board's Establishment (Year One)

March 16, 2018

April 20, 2018

June 15, 2018

July 20, 2018

August 17, 2018

September 21, 2018

October 19, 2018

November 30, 2018

January 18, 2019

February 15, 2019