

City of Summit Environmental Commission Minutes, May 13, 2019

Present: Donna Goggin Patel, Marian Glenn, Rich Fiore, John Kilby, Rick Bell

Guests: Matt Gould, Greg Vartan, Christina Amundson, Fred Blau, Courtney Cordaro, Daniela Gioseffi, Gio Sce, Jim Fleischmann

Donna Goggin Patel called the meeting to order at 7:35 PM.

Summit Solar Microgrid Presentation: Dr. Frederick P. Blau

Dr. Frederick P. Blau is a retired physicist and Summit resident who is interested in microgrids and solar energy. Fred presented his Summit Solar Microgrid slide presentation. A microgrid is a self-contained, smaller-scale electric grid with its own power generation. It can be a house, college campus (such as Princeton University), town, etc. The microgrid is typically tied into the larger grid, but can flip a switch to separate itself. It can be in island mode (isolated from the main grid) or in grid-connected mode.

A microgrid protects against power outages from storms or cyber-attacks. For example, Superstorm Sandy hit land only as a Category 1 hurricane, but it left many in Summit without power for 1 ½ - 2 weeks. JCP&L spent \$680 million on Sandy. The climate crisis increases the chance of these kinds of storms. The other threat to the power grid is an electric grid cyber-attack. None of countries capable of launching an attack (U.S., China, Russia, Iran and North Korea) have effective defensive mechanisms. Recovery of electricity after a storm can be in the days, but a cyber-attack could lead to months of electricity loss. (Ted Koppel's "Lights Out" and David Sanger's "The Perfect Weapon" are good books on the topic of cyber-attacks.)

Fred then explained his interest in seeing Summit explore creating its own microgrid investment. Fred envisions a solar powered microgrid with a battery. A solar-based microgrid is green in that it does not use fossil fuels to operate (and frees all gasoline and diesel fuel for transportation in an emergency – not for a generator). Our current power in Summit from JCP&L is approximately 65% fossil fuel-generated.

Some examples, existing and planned, of microgrids beyond Princeton University's include 13 communities in New Jersey. Montclair is looking at building a \$12 million microgrid (estimating a 9-year payback). Hoboken is also working on one that would cost approximately \$50 million covering 55 buildings (with federal and state support). Eleven other communities have received some money for feasibility studies for microgrids (from NJ's Board of Public Utilities ("BPU")). (These sites are Trenton, Atlantic City, Camden County, Cape May County, Galloway Township, Highland Park, Hudson County, Middletown Township, Neptune Township, Paterson, and Woodbridge Township.) The microgrid concept is included in the 2015 Energy Master Plan Update (which encourages the increased use of microgrids and the creation of long-term financing for local energy resiliency).

In the event of a long-term power loss, the microgrid would serve to maintain fully functioning police, fire, public works, medical services, and municipal government communication capability. The grid would provide power for drinking water and power to provide temporary housing for residents whose homes are unlivable. (Fred recommends that SHS and LCJSMS be included in the grid for emergency

housing.) In connected mode, the battery for the solar microgrid can store electricity when it is cheap and then utilize the battery's power when electricity is expensive.

Undergrounding utilities costs about \$2.2 million per mile (based on San Diego's data). Summit has 83 miles of streets. But the high-priority miles in Summit are only about 2.7 miles (to cover from the Traynor substation to SHS, City Hall, Police Department, (proposed new) Fire Department, Summit Free Public Library, LCJSMS, and Overlook) which would cost about \$5.9 million to move the wires underground. It would be another \$1.1 million to add on the Community Center.

In terms of placement of the solar panels, Fred analyzed rooftops and parking lots for approximate square meters of potential. He ran his numbers based on 12,000 square meters, which equate to 8,820 kWh/m²/day. During daylight, use panels to charge electric cars, pump water to rooftop tanks and charge battery. For example, the town of Sterling, Massachusetts (with about 7,000 residents) has a solar-powered microgrid (3.4MW of panels) with a \$2.7 million battery (2MW) and uses the battery to save money by buying electricity only when it is inexpensive. Sterling's battery would run the town government for twelve days. This saves \$400,000 annually for the town by charging its battery with cheaper electricity and using the battery when electricity is more expensive. Fred estimates the lifespan of that battery to be about 20 years.

In terms of potential sequencing, Fred recommends looking at SHS first in terms of adding as many solar panels as possible there with a battery. Councilperson Matt Gould pointed out the fact that City property may be an easier place to start than school property (which involves the Board of Education). Marian Glenn also pointed out that we may not need to underground the utility lines from the Traynor substation to the rest of the buildings (as we would be disconnected from the main grid in the event of an emergency). This section of the proposed undergrounding is 1/3 – 1/4 of the total, so it is a substantial cost. Councilperson Gould thought that it would be beneficial to instead connect in the Aquatic Center.

Jim Fleischmann mentioned that the Library has independently started to examine putting solar panels on its roof. The Library is a designated emergency location and is also considering getting a generator in that capacity.

The April meeting minutes were approved at 8:30 PM.

Earth Day Clean-Up Re-Cap: Donna Goggin Patel

The Earth Day Clean-Up on Saturday, April 27, involved 230 volunteers and collected 5,900 lbs (or almost 3 tons) of trash and recycling at 7 sites around Summit. Volunteers also applied 16 yards of woodchips and 1 yard of mulch to the trails. The recyclable component was 800 lbs of the total. Thank you to everyone who volunteered or managed a site – great job!

Passaic River Trails: Marian Glenn

Marian Glenn and Jeff Hankinson continue to work on ideas to expand the Passaic River Trail system for the section of the river off of River Road between Summit and Chatham. Jeff has cleared the path from the Summit Department of Public Works yard to Martin's Brook and then from the other side of Martin's

Brook down to Rt. 124. (Currently, you need to cross Martin's Brook on the bridge section of River Road as there is no public bridge or available path closer to the river.) Marian and Jeff have created a slide presentation with potential next steps at the DPW yard, a possible conservation easement for crossing Martin's Brook, and possible Eagle Scout project to complete the trail between Solomon and Rt. 124.

GreenFaith: Marian Glenn

For the summer, the public collection bin for the GreenFaith Trex bench program is located at Christ Church (561 Springfield Ave). The blue collection bin is located to the right of the main entrance. Cars may pull into the handicapped spot in the circular driveway to drop off the plastics. Trex accepts these types of clean and dry stretched plastics: grocery bags, bread bags, case overwrap, dry cleaning bags, newspaper sleeves, ice bags, Ziploc baggies, produce bags, bubble wrap, salt and cereal bags.

Recycling Advisory Committee: Donna Goggin Patel

Donna was able to attend the April 24 tour of Giordano's facility with members of RAC. RAC discussed the biggest tips from the tour at its May meeting including that recyclables must be dry and clean; wet cardboard is the biggest problem so residents need to cover their cardboard/mixed paper on rainy/snowy days; tin foil and plates are acceptable if clean and dry; take out cups are acceptable if clean and dry. Please do not recycle stretched plastics in your curbside recycling, and do not place recyclables inside plastic bags – they should be placed loose into a bin for collection. RAC intends to update one of the recycling flyers to reflect a few changes in procedures.

Union County EC Hub: Donna Goggin Patel

The next meeting of the Union County EC Hub will be held on Tuesday, May 21, in Berkeley Heights at 7:30 pm at the Columbia Middle School Library (345 Plainfield Ave). Donna will attend. Summit will be hosting the next meeting on Thursday, July 11, at 7 pm at City Hall.

Green Summit: Courtney Cordaro

Green Summit hosted a table at the May 5 Farmers Market with a reusable basket giveaway and information about general sustainability. The core team of volunteers is growing.

Summit Schools: Donna Goggin Patel

The next meeting of Summit school green team parents is on Friday, May 17, at 9:30 am. If you are interested in being part of this effort, please contact karin.pittle.gale@gmail.com. Franklin completed its Trex collection, and Washington is hosting a second round of Trex collections. LCJSMS has started a Trex collection. There is a two-week Walk, Bike or Carpool to School event the weeks of May 13 and 20.

Upcoming Events: Marian Glenn

Marian will be planting tree tubelings from 10 am – 3 pm on May 16, 18 and 20 at the Rahway River Parkway Green Acres on the border between Springfield and Union. Please email marian.glenn@shu.edu for more details if you can assist.

The Summit Public Library is hosting a free series on water this Spring. Marian Glenn will be presenting “Green Infrastructure for Managing Storm Water: New Jersey’s New Rules” on Tuesday, May 21, from 6:30-8:00 pm.

Summit’s Community Night is scheduled for Tuesday, July 16, in the evening. Donna plans to attend and hopes to have 2-3 more people join at the EC table.

New Business:

Daniela Gioseffi mentioned the work of Empower New Jersey (www.empowernewjersey.com), which is seeking to have Governor Murphy enact a moratorium on fossil fuel projects in New Jersey. The direct number is (866) 586-4069.

The meeting was adjourned at 9:10.

Respectfully submitted by Donna Goggin Patel.

2019 EC meeting dates. All meetings take place on the 3rd Monday of the month except as noted.

6/17

No meetings in July and August.

9/16

10/21

11/19 (Tues)

12/16