

Swarthmore Environmental Advisory Council
Meeting Minutes: February 27, 2018

Attendance

Members: Elizabeth Jenkins (Chair), Claudia Cuerto, Annie Fox, Corey Ullman, and Aurora Winslade

Associate Members: Danielle Callahan, Susan Kelly, Jennifer Pfluger, and Melissa Tier

Borough Council Liason: Lauren McKinney

Guest Presenter: Billy Hodges from Digital Filaments

A few community members also attended.

Approval of Minutes

Minor corrections were added to the Minutes of the January 24, 2018 meeting, and then they were approved as amended.

FaceBook Page

Annie created a FaceBook page for the EAC which will be used to convey relevant environmental information and promote events. Members approved it to go live, and so she will send an invitation to join the page to the members and will announce the page on Nextdoor. For now, she will be the only one to post to it directly, but others should email her any information or events they think should be announced on it.

Water Quality Q&A Event

Residents have been posting on Nextdoor Swarthmore with concerns related to water quality and supply. Corey and Elizabeth arranged for Tracey Bouvette, who is a former Associate Member of the EAC, a water quality expert, and the executive director of the Chester Ridley Crum Watershed Association, to lead a Q&A with interested residents. The event will take place on March 13th at 7:00 p.m. in the Borough Hall Community Room. Possible topics include water supply and disinfection byproducts, emerging contaminants, and home treatment options. However, the discussion will be directed by the interests of the attendants.

Elizabeth created a flyer for members to distribute. Annie will create a FaceBook event page, and Corey will reach out to individuals who posted concerns on Nextdoor and submit a short teaser article to the Swarthmorean.

LED Streetlight Q&A

Billy Hodges of Digital Filaments, the Borough's consultant on the new LED streetlights, presented on the advantaged and limitations of the technology and the Borough's project implementation. He answered questions and addressed concerns of resident, some of which were expressed by guests at the meeting, and others of which had previously been made known to those in attendance.

Swarthmore's Conversion Strategy:

Jane is gradually switching streetlights over to LEDs over the course of 5-6 years. She began by purchasing just a few lights, and as the money saved from the reduced energy costs each year is reinvested into converting more streetlights the following year. Within a couple more years, all of the Borough's lights should be switched over. This is a conservative approach. Most townships opt to take out a loan to convert all of their lights at once, and then make the loan payments with the energy savings.

Advantages of LED streetlights:

LEDs are taking over the lighting market, and one of the first lighting segments to implement a switch is street lighting. LEDs provide the following benefits in this context:

- Energy efficiency: As opposed to halogens, little energy is wasted through heat generation. Additionally, the LED light is directional, which means it concentrates the light where it is focused and does not waste energy by creating excess ambient light in other directions.
- Protection of dark sky/reduced light pollution: Another benefit of directional light, an LED streetlight illuminates the area below it and avoids brightening the sky.
- Material and labor efficiency: The bulbs have a very long lifespan (current ones should continue to provide sufficient light for at least 10 years), and therefore do not need to be replaced as often as their predecessors.

Billy addressed several concerns that were raised, as summarized below.

Concern: There is a great deal of variability in brightness when walking along a street, making it hard for a person's eyes to adjust.

Response: While some variability is unavoidable due to the spacing of the lights, the main issue right now is the contrast between the old and new lights. The older lights that used mercury vapor fade with time, which magnifies the difference. When all the lights are converted, there will be greater consistency.

Concern: Overall, the new lights seem to bright and interfere with the enjoyment of the night.

Response: In part, residents have grown accustomed to faded lights. For pedestrians to safely walk around the sidewalks, particularly ones that are raised by tree roots, good lighting is essential. In general, the standard for illuminating roads is 0.5-1 foot-candles, and Philadelphia requires 2 foot-candles. In places here, we have as low as 0.2 foot-candles. Overall, with the new LEDs, people will need to adjust to some increased brightness. However, the Borough is currently purchasing 25-watt lights, which is close to the lowest wattage available. The Borough also selected lights that most minimize glare. As the technology advances, lower wattages will become available. Also, there a type of fixture that can reduce the brightness of the lights by 50%, but, for now they are too expensive for various reasons. In a few years, the price may come down, and the Borough could use the savings from the light conversion to eventually install further upgrades.

Concern: In some places, the lights don't reach the sidewalks at all. In other instances, lights are shining directly into the houses of some residents.

Response: Three factors are primarily responsible for both of these issues: the pole arms were designed for a different type of bulb; the LEDs are directional, so it is important that they are accurately angled; and many of the streetlights are improperly calibrated so they are not directing light at the sidewalk, in some cases shining it through a window. In most instances, these problems are easily remedied with proper calibration, as detailed in the recommendations below.

Concern: Don't LEDs emit blue light, and isn't that unhealthy?

Response: LED light does start off blue, and it is made warmer by the phosphorous coating on the bulbs. While it is true that blue light can interfere with circadian rhythms, to suffer from that effect someone would have to lay on the ground staring up at the light before that happens. However, if a light is shining into a resident's bedroom at night, that would need to be addressed.

Concern: Do we need to hire a professional lighting designer to align the lights properly?

Response: No. The procedure is straight-forward and simply needs to be explained to the installers. Having a professional lighting designer would be a large and unnecessary expense.

Concern: Can a homeowner have a say if their house or window is going to be under a light?

Response: That is a question for Jane and the Borough.

To best address the foregoing concerns, the EAC generated the following recommendations:

1. **Properly calibrate the streetlights to ensure they direct light onto the streets and sidewalks, and not into buildings.** The alignment of the streetlight arms is very important. As bulbs are replaced, and as lights are reported as potentially misaligned, the Borough needs to direct the installer to use a level to carefully make the arm of the fixture is parallel to the ground in both directions, and then point it a hair toward the sidewalk. This slight angling toward the sidewalk is necessary because our fixtures hang the lights over the middle of the street, which was appropriate for the old-style bulbs. However, since the LED bulbs focus their light directionally, a very subtle angling toward the sidewalk will illuminate the sidewalk and make it safe for pedestrians to walk at night. Proper angling of the light should also eliminate most issues with the lights shining into houses.
2. **Always select the lowest wattage bulbs available at the time of purchase.** Currently, 17-watt bulbs are the minimum available. But, as the technology advances, lower wattage options are likely to appear on the market. Lower wattage lights will help address concerns of residents that feel the new lights are too bright, and will minimize the impact in the rare instances that a properly calibrated light still shines in through a window.
3. **Develop and publicize a clear protocol for residents to report a problem with a streetlight.** It is much more efficient to crowdsource the identification of lights that need to be re-aligned rather than hiring someone to attempt to inspect all of them. Residents need to know where to call and what information to provide, such as cross street or an identifying number from the pole. If a pole number is required, they will need instructions on how to locate it. Once finalized, the EAC will help publicize the information.

Annie will draft a formal list of these recommendations for Borough Council. We will review them at the next meeting.

Swarthmore's Climate Goals

Around 2010, Carl Everbach helped develop a multi-municipal action plan which set forth goals to reduce our climate footprint. The power company, NRG, recently inquired about Swarthmore's progress. They have a consulting arm which helps towns meet such goals, but their service usually starts at approximately \$30,000. It might be less for Swarthmore since we are a small community. Members agreed that we do not need to hire them. However, reviewing the targets would be a good idea, and we can also explore the following options:

1. The Multi-Municipal EAC ("MMEAC") initially formed to address the climate goals and develop the plan. A group, including Phil Coleman, then split off to work on energy issues, becoming aFewsteps.org. As a starting point, Elizabeth will reach out to Phil to discuss the plan and report back at the March meeting.
2. Aurora said that Swarthmore College conducts an annual greenhouse gas inventory. Their goal is to be carbon neutral by 2035, and they are in the midst of a complex year-long planning process. If the Borough is interested, we could explore ways to partner with them.

EPA's Green Power Partners

EPA tracks the ratio of power entities purchase as green power, including the residents for a municipality. Swarthmore is listed as #14 in the U.S. among project participants. However, the Borough has been unable to prioritize gathering the data needed to maintain its standing. It would require calling the various utility companies to compile data for 2017 and 2018. Elizabeth asked whether anyone would be interested in the project, but no one volunteered. She might work on it herself, time permitting.

Pesticides

Susan said the MMEAC may be interested in reconstituting around addressing pesticide safety. The Rose Valley EAC is meeting to discuss it. The issue is complex, and it can be hard to gather solid information since professional pesticide control companies often do not want to disclose information on the chemicals they use. Public education would be a key component on addressing local pesticide use, and we could also create simple incentives such as providing signs designating "bee-friendly" yards.

As a early step, Jennifer will check if Collin Purrington, a Borough resident and a biologist who has a personal interest in mosquito control, could informally speak at an EAC meeting.

Borough Council Report

Leaf Mulch:

Lauren said people are not buying as much leaf mulch as they used to. It is environmentally beneficial, so the EAC should promote it. It is composted from the leaves the Borough collects in the Fall. Two potential issues are that it is sold in large quantities only, and that some people have complained about it producing weeds. However, people are usually pleased with the quality.

The EAC could recommend the Borough allow people to purchase smaller quantities at a time. Corey will also do a write-up on the benefits and availability of leaf mulch for the Swarthmorean.

Spotted Lanternfly:

This destructive invasive species is posing a significant ecological threat, and we need to educate the public about it. Annie will write up information for the Facebook page and the EAC website that includes how to identify it and steps to take when it is found. We can also inform people through Nextdoor Swarthmore.

Campus/Community Connections:

At various points, there has been energetic discussion on strengthening the connections between the town and the college regarding sustainability efforts. One option is for one of the college's 12 sustainability fellows to work on a project to implement a positive change in the Borough. We would need to have a dedicated mentor or two to work with the student consistently throughout the year.

While a project does not need to be fully fleshed out, but students are matched where there is an identified need for assistance with a high-priority project that could not be implemented without their assistance. General ideas include addressing waste reduction, combatting invasive species, or reducing greenhouse gas emissions. There is roughly a month before we would need to have a sufficient project identified. Lauren will talk to Jane and Susan will contact Anita Barret, the Town Center Coordinator, to see whether they have anything in mind. Projects are launched in August.

The possibility of sending a student to the EAC Network Conference was also raised.

Housekeeping

In response to a poll of members, the EAC will continue to meet on the fourth Tuesday of each month. Elizabeth and Annie will be discussing additional housekeeping matters before the next meeting.