

# TC CPI | Tompkins County Climate Protection Initiative

## 2018 TCCPI MEMBER ACCOMPLISHMENTS

### Alternatives Federal Credit Union

- In 2018 we made 207 solar loans for a total of \$2,733,644.
- Our rooftop solar panels generated 13% or 22,452 kWh of our electricity during the year.
- We began jointly marketing with Renovus Solar in 2018 to further our work together for the good of the environment and local economy by expanding renewable energy.
- In November Cornell Cooperative Extension presented the Community Beautification Award for a Business to Alternatives for its flower plantings along Route 13.
- As one of the founding members of the Ithaca 2030 District, we participated in the District Partner quarterly meetings.
- The staff "Green Team" worked continually improve energy efficiency and reduce waste.

### Cayuga Medical Center

- LED Retrofit Site Lighting project completed at the Main Hospital Campus and also at the Ithaca East Campus site on 10 Arrowwood Drive.
- Review of Surgical Services HVAC System for Energy Efficiency completed. Future consideration to modify existing equipment to obtain energy savings.
- 2017 – 2018 study of project cost and funding incentives for T8 Fixture Replacement with LED fixtures throughout the hospital for future Capital Budgeting.
- Facilities Master Plan included a complete physical plant study of existing equipment at CMC. CMC was a recipient of a 2018 NYSERDA Flex Tech study that was completed in December 2018. The study completed by Antares Group Inc., provided both short and long term energy conservation measures (ECM's). The first ECM to be initiated in 2019 will be retrofitting the interior lighting at Cayuga Medical Center to LED. This upgrade is estimated to save approximately 613,000 kWh annually after completion.



### Center for Community Transportation (CCT)

Ithaca Carshare has always had a mission of enhancing access to transportation in the Ithaca community while reducing its negative environmental and economic impacts. Since 2008, carsharing has supported reduced dependence on car ownership when paired with other shared and active transportation options. In the past 2 years Ithaca Carshare has brought other community transportation work under our umbrella such as Smart Trips, Backup Ride Home, and most significantly, Bike Walk Tompkins. In line with this, our organizational name is now the Center for Community Transportation.

#### *Ithaca Carshare*

- 489 new Ithaca Carshare members reported that they would sell or avoid/delay the purchase of 144 vehicles.
- 1,325 members took a combined 17,161 trips totaling 211,845.

- Fleetwide fuel economy was 33 mpg, 29% above the 2017 national average of 25.2 mpg.
- As a result of the shifted driving habits of these members and higher than average fuel economy, an estimated 14,724 gallons of gasoline and 131 metric tons of carbon dioxide were avoided.

*Bike Walk Tompkins*

- Facilitated the introduction of a bikeshare in Ithaca with over 6 months of dedicated bikeshare research. LimeBike (now Lime) launched in Ithaca in April 23 2018. Ithaca became the 1<sup>st</sup> city in New York State to host a dockless bikeshare thanks to BWT's visionary leadership.
- The popularity of the bikeshare greatly exceeded expectations and over 77,000 rides were taken in Tompkins County in 2018. Lime also expanded their bikeshare operations regionally to Watkins Glen, Trumansburg, Dryden and Elmira as well.
- Helped Lime develop the local Lime Access program giving subsidized access to the app based bikeshare service for people with low income, no smart phone, or no debit card. 84 people signed up.
- Hired 7 bike champions to be ambassadors for biking. The bike champions hosted over 20 new bike events in typically underserved communities, including learn to ride programs for seniors.
- Organized the 12th and 13th editions of Streets Alive!, with each event closing 10-15 city blocks to cars and opening them up to people to bike, walk, roll, dance, play, etc. for 4 hours. Each event uses 50-80 volunteers and draws an estimated 2500 participants.
- Hosted the 5th Streets Alive! Film Festival at Cinemapolis in March.
- Completed a Bicycle Use and Attitudes Survey.
- Convened meetings with community leaders about biking and continued the development of a Blueprint for Better Bicycling.

*Backup Ride Home*

- With the support of TCAT and the Downtown Ithaca Alliance, CCT piloted the first guaranteed ride home service offered to the Ithaca community beyond Cornell University.
- The Backup Ride Home program provides peace of mind for commuters who travel to work without a personal vehicle (bus, carpool, bike, etc.).
- Local Ithaca Carshare on-call staff facilitates free alternate transportation home if something unexpectedly happens that makes an original commute plan home unfeasible.

**City of Ithaca**

***Secured \$120,000 in grant funding, managed existing grants***

- Completed grant summary that shows shared Sustainability Coordinator has secured and managed 11 grants with a total value of over \$530,000 over 6 years.
- Awarded \$100,000 grant for City under NYSERDA Clean Energy Communities program for LED streetlight conversion.
- Awarded \$20,000 of NYSERDA funding via Energetics, Inc., for incorporating electric vehicles into City and Town of Ithaca fleets.
- Administered two existing grants (Park Foundation, Funders' Network for Smart Growth and Livable Communities).



***Achieved Climate Smart Communities Certification from NYS DEC***

- Worked across departments to complete certification requirements.
- Coordinated with DEC officials and other partners to organize press conference (at Cayuga Street Garage EV charging stations) and press release.

***Completed Green Building Policy report and began drafting code language***

- Worked with joint Town/City steering committee, consultants, and community advisory committee to draft GBP report and code language.

- City and Town unanimously adopted GBP report, which provides recommendations for requirements and incentives to substantially reduce carbon emissions in all new buildings, while emphasizing and supporting affordability.
- Performed extensive outreach and education.
- Planned for Phase Two - drafting legislation: Defined scope of work and process; set budget and acquired funding; contracted with consultant team.

**Leveraged City funding through internship program**

- Hired four interns between City and Town; two used Federal Work Study funding.
- Coordinated with organizations at Cornell to increase the racial diversity of applicants.

**Supported LED streetlight conversion**

- Worked with NYSERDA to secure grant funding.
- Worked with Public Works to advance City-led Tompkins County Streetlight Collaborative.
- Retrofits would annually save an estimated \$200,000 and reduce streetlight GHG emissions by 50-60%.



**Updated Property Assessed Clean Energy (PACE) financing program**

- Acted as project manager for update to PACE 2.0, which enables broader participation.
- Program offers financing for energy efficiency and renewable energy improvements in buildings.

**Discontinued efforts to install large solar array at airport**

- Coordinated with multiple City departments, solar developer, and other partners for four years to move project forward.
- Due to circumstances out of the City's control, the project ultimately fell through.

**Published Ithaca Sustainability Newsletter**

- Engages local, regional and national community with local news and events.
- Over 615 newsletter subscribers. Facebook page now has over 575 likes.



**Developed and strengthened relationships with regional, and national partners**

- Urban Sustainability Directors Network: Sat on selection committee for the Equity Diversity Inclusion Fellows program.
- Northeast Energy Efficiency Partnerships: Participated in task force to guide the creation of the Community Action Planning for Energy Efficiency tool.
- EcoVillage at Ithaca: Helped develop *Asking the Right Questions* workshop on green building for municipal boards and staff.
- Also: NYC Department of Buildings; Energize NY; Northeast; New Buildings Institute.

**Supported local initiatives through participation and promotion**

- EV Tompkins; Ithaca 2030 District; Energy Smart Community; Sustainability Center; Tompkins County Energy Task Force; Tompkins County Climate Protection Initiative.

**Clean Energy Technology Resources, LLC**



We are a project and business development organization promoting clean energy technologies as a source of energy efficiency and onsite electricity generation. We are working with four engineering firms to implement technologies that will achieve goals in reducing greenhouse gas emissions. We are working with Energy Concepts, Customized Energy Solutions, Nine Energy, Inc., and Keystone Architects and

Engineers to build projects in New York State. Clean Energy Technology Resources has just received

permission to market the NLine Energy, Inc.'s Energent MicroSteam Turbine Power System nationally and internationally. We are looking for additional companies that have technologies that we can promote and develop opportunities.

- We have approximately 20 clean energy projects in the various stages of development. All of these projects are still in the development stage and are waiting on legislative approval, incentives, or other project restraining actions that slow all projects.
- Some of the projects that we are involved in include: The City of Binghamton Micro Grid, Boscov's Cogen and Renovation Project, Homer Sports Complex Cogen Project, and the CrowCalls Net Zero Church Project. We also have three more confidential cogen projects with Energy Concepts, the leading engineering and design firm for CHPs in the country. We have many back pressure steam turbine projects utilizing waste steam pressure with the NLine Energy MicroSteam Turbine Power System. These projects are confidential and have been on hold because of the effects of the tariffs by the U.S. Government.
- We also have three large industrial-sized rain water collection systems that are in the negotiation stage and are capable of saving money for our customers by savings on their water bills from the municipal water supply. This technology also saves electricity by decreasing the need to have municipal water supplies pumped within the system. Some water supplies are pumped for long distances. RWCS lowers the demand for electricity caused by the high energy usage requirements by municipal water suppliers.

### Cornell Cooperative Extension of Tompkins County

#### Clean Energy Communities:

- Summary: One of our Energy Educators is the CEC Coordinator for the Southern Tier who works with municipal officials to save energy in their facilities and communities through targeted steps (they become "designated" by tackling 4 of 10 "high-impact actions," which makes them eligible to apply for grants to fund additional clean energy projects).



- Impact: Seventeen communities were designated in 2018 (bringing the total to 22). Grant funds have been used for such things as an LED streetlight changeout and residential LED program in Caroline; installation of air-source heat pumps in the Ulysses Town Hall; and improvements to the Danby Department of Public Works facility. In addition, we have facilitated energy code trainings for codes officials. For a

sample CEC newsletter, go to <http://mailchi.mp/78fa3809e733/state-of-the-region-grant-funding-high-action-spotlight-and-more-246935>.

#### Renewable New York and Go Solar Tompkins:

- Summary: Joint NYSERDA-funded program with Catskill Mountainkeeper to run solarize-type enrollment aggregation programs in two large regions of New York State. (CCETC was responsible for Tompkins, Schuyler, Chemung, and Steuben Counties; others were active across the rest of the Southern Tier and in the Capital and Hudson Valley Regions). Although the Renewable NY program wrapped up in March 2018, the Energy Team continues to provide support to residents and businesses interested in using solar energy.
- Impact: At the end of 2017 and beginning of 2018, CCETC led a series of community shared solar campaigns. These produced a total of nearly 400 leads, resulting in 153 signed contracts for a total of nearly 1MW capacity. (Final report available at <http://ccetompkins.org/resources/renewable-ny-final-report>.)

#### Energy Efficiency Appointments:

- Summary: Part of a larger Park Foundation-funded program. These are focused on low- and moderate-income residents who are directly engaged through home visits where Energy Educator discusses simple DIY energy-saving measures and instructs tenant/owner on

installation of up to four of these, as well as explains the benefits of professional energy assessment and access to incentives and programs to help with energy upgrades. This program was transitioned to Get Your GreenBack and the Energy Navigators program in mid-2018.

- **Impact:** In 2018, this program worked closely with 25 residents, helping them make simple upgrades to their homes/apartments and apply for programs to receive significant energy efficiency upgrades.

*Green Building Policy Project:*

- **Summary:** The City and Town of Ithaca led an effort to look at possible green building policies that could be adopted and either made into recommendations, incentivized, or mandated. Energy Outreach Team Leader remained active on the Advisory Committee and he and other members of the Team provided substantial comments leading to the final report that came out in March 2018, and was thereafter adopted by the City Council.
- **Impact:** The City and Town of Ithaca both adopted the final Green Building Policy report in May 2018.

*Student Housing Energy Reduction Program:*

- **Summary:** The goal of this program is to create “Certified Tenants,” students who have the information and skills they will need for energy-efficient off-campus living. This initiative also hopes to increase energy efficiency upgrades among rental properties by making building energy efficiency part of the market consideration. In 2018, the program was transitioned to being run by Ithaca College staff and students, with support from CCETC.
- **Impact:** The program reaches roughly 250 students, two dozen faculty members, and dozens of staff members each year through workshops, presentations, events, and trainings, and currently enlists 15 Eco-rep students delivering workshops and doing peer education, and 3 student leaders taking responsibility for organizing the work.

*Ithaca 2030 District:*

- **Summary:** Ithaca became an official 2030 District in mid-2016. Currently with 15 buildings represented, CCETC serves on the Advisory Board and helps develop resources for District Member building owners.
- **Impact:** In addition to actively contributing through the Advisory Board, CCETC helped produce the Energy Efficiency Services Report and reviewed other resources. Staff also recorded meeting minutes at all Advisory Board and District Member meetings.

*Energy Smart Community:*

- **Summary:** The ESC is a collaborative project focused on modernizing our electricity system through smarter infrastructure, reduced peak demand, and increased customer engagement. CCETC and Cornell University have partnered with New York State Electric and Gas (NYSEG), the local utility, to develop and test the technologies, educational approaches, and customer options that lead to greater adoption of cleaner and distributed energy sources; improved grid reliability, resilience and safety; and reduction of overall energy use and shifted use off of times of peak demand achieved when businesses and residents have expanded choices and increased energy literacy.
- **Impact:** In 2018, CCETC focused on helping community members understand NYSEG-developed resources such as Energy Manager, to better understand and manage their energy use. This was accomplished through participating in tabling events, leading monthly community conversations, and a web site (<http://ccetompkins.org/energy/energy-smart-community-tompkins>), among other efforts and working collaboratively with NYSEG’s ESC team.



*EV Tompkins:*

- **Summary:** In 2018, we continued to support the work of Energetics, Inc., which led the EV Tompkins program to promote the use of electric vehicles and installation of EV chargers across

the county. Toward the end of 2018, as Energetics' program funding ran out, we began the transition of moving the majority of this work to CCETC.

- **Impact:** CCETC helped educate residents about EV options and how EVs work through tabling events and presentations.

*Alliance for Non-Pipeline Alternatives:*

- **Summary:** This is a diverse group of community members working to find alternatives to build-out of the natural gas pipeline (or other gas infrastructure), specifically in the Lansing gas moratorium area.
- **Impact:** To date the group has succeeded in spurring NYSEG to propose a combination of measures to reduce overall gas consumption and pressure boosters to increase the pressure in the line, which NYSEG and the community is continuing to work through. We have continued to work with NYSEG on their RFI and RFP process to ensure the interests of the community are included.

*Radon Awareness:*

- **Summary:** In addition to energy programming, the Energy Team continued to provide information to residents about the dangers of radon, and, through a long-standing NYS Department of Health grant, hand out free radon test kits.
- **Impact:** The Energy Team (working with the CCETC Consumer HelpLine, which was dissolved in fall 2018), handed out 21 free radon test kits, received nearly 200 page views on the CCETC radon web site, and tabled with radon information at 19 events.

*Other programs:*

- Coordinated a Heat Pump Mini-Conference targeting landlords in the Tompkins County area, held at REV Connect on October 10.
- Internet of Things / Things Network: working to network buildings across the county that can remote meter energy use (and other measurables).
- Building understanding about energy systems: helping community members understand how building energy systems work and how they can participate in improving them.
- Tompkins County Energy Road Map: CCETC serves on the steering committee and the policy committee.
- CCETC was the recipient, along with Cornell University, of the EPA Green Power Partner & Center for Natural Resource Solutions' Award in the category of Leadership in Green Power Education.
- CCETC Energy Team continued to add to and update its web site pages and printed resources.

**Cornell University**

- Cornell played a key role in convening over 20 State University of New York (SUNY) and private New York State higher education institutions to form a consortium for developing and purchasing new, large scale renewable energy projects. The [NY Higher Education LSRE Project](#) seeks to lower financial barriers to renewable energy procurement through combined purchases. The consortium plans to consider large-scale solar photovoltaic, wind, hydroelectric and/or energy storage projects for development in New York State.
- Major recycling restrictions went into effect during summer 2018 across the country. Cornell created [a recycling and reuse poster campaign and new, consistent waste signage](#) to be rolled out across the campus.
- Cornell University was selected as the [2018 Leadership in Green Power Education](#) award winner. The U.S. Environmental Protection Agency and Center for Resource Solutions chose Cornell for efforts to advance access, education, and public interest and engagement in renewable energy resources, especially in low-income communities, recognizing the more than 30 Cornell Cooperative Extension of Tompkins County (CCETC) educational programs advancing statewide renewable energy adoption. These programs help residents transition from fossil fuels to renewable energy and reduce overall energy use through outreach and education about solar, wood heating, energy



efficiency upgrades, heat pumps and behavior change.

- The Association for the Advancement of Sustainability in Higher Education gave Cornell a gold rating, and recognized Cornell in the [2018 Sustainable Campus Index](#), as first in New York State for Diversity & Affordability and second in the U.S. for sustainability Coordination & Planning. This year's rating makes Cornell the longest running institution to have maintained a Gold status.
- [East Avenue construction project](#) resulted in new sustainability features on campus. Pedestrians, drivers, and bikers can now enjoy the newly implemented sustainability features of East Avenue. Besides adding traffic lights at the intersection of East Avenue and Campus Road, raised crosswalks, re-painted bike lanes, and paved roads all help promote safety and traffic flow.
- Cornell's Grounds Department is [testing electric push mowers in order to reduce the carbon footprint of landscape work](#). According to Ego, a producer of cordless outdoor power equipment, the annual operating cost of a typical gas-powered mower is \$47 while the annual operating cost of a battery-powered mower is only \$1.20. The transition of some gas-powered mowers to electric could save Cornell thousands of dollars and tons of carbon.
- Recognized by the Second Nature Carbon Commitment for a second year in a row with three [Marks of Distinction](#) for excellence in carbon mitigation and sustainability education. This year's accolades included recognition for 100% Renewable Energy Goal, having a Carbon Reduction to date of at least 25%, and being a previous Climate Leadership Award Winner.
- Cornell University was ranked #8 in the country in the [2018 Princeton Review's Guide to Top 50 Green Schools](#) and Guide to 375 Green Colleges. Cornell University is the only Ivy League school in the top 20, and is one of two New York State universities recognized in the top 15 schools, and has been recognized on the Honor Roll every year since its inception.
- [EnergySmackdown](#) is an annual six- week competition for the Cornell campus to reduce or eliminate energy use in our personal lives and between buildings, now in its fifth year. Energy Smackdown concludes with the [winter energy setback program](#). This element of the competition alone saved \$80,000 due to reducing 1,080,000 Kwh of electricity usage during the break.
- [Anabel's Grocery](#) launched as a low-cost grocery provider at Cornell University's central campus that is "for students, by students". Anabel's provides nutritious, affordable food and offers educational programs that create a fun, inclusive, empowering community around quality food, food choices, wellness and positive social change. Food insecurity is a problem worldwide and Cornell University is not exempt. Anabel's addresses this problem by providing low-cost groceries and subsidies for those who qualify.
- [The Sustainable Landscapes Trail](#) was launched by the Land Team of the President's Campus Sustainability Committee, which is made up of members from faculty in Landscape Architecture and Horticulture, the Grounds Department, Infrastructure, Properties and Planning, and Cornell Botanical Gardens, and students. A digital map and physical trail features open spaces, natural areas, and landscapes with unique sustainability features that encourage community members to appreciate and understand the human and planetary wellness features of the natural campus landscape. Spots include bioswales designed by students which protect a parking area, and natural and native plantings across prominent academic spaces.
- [The Peterson green parking lot](#) was completed as a state-of-the-art example of green infrastructure and is the latest project to join the trail. It was designed by landscape architecture students and Cornell staff to demonstrate an alternative to traditional impervious parking lots and the resulting storm water runoff. Green infrastructure practices will turn this parking lot into a natural landscape by capturing rainwater where it falls, filtering out pollutants and reducing large volumes of runoff,

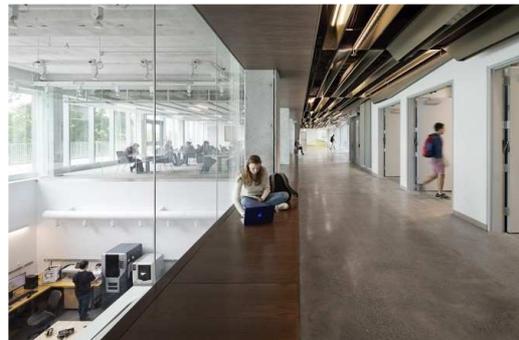


- Cornell University professors helped [lead the National Offshore Wind Research & Development Consortium](#) to enhance U.S. wind-energy economy and decrease greenhouse gas emissions.
- Museums are some of the most difficult buildings to make energy efficient because many of the art pieces need specific humidity and temperature conditions to be maintained. When the Johnson Museum of Art on Cornell's campus needed basic maintenance and air handling upgrades, [museum staff partnered with the campus's Energy Conservation Team to accelerate sustainability and preservation benefits](#). Upgrades, including a space-specific air handling mechanism, now ensure each gallery and storage space receives only the precise temperature and humidity needed for comfort and the collection and reduced overall energy use by 40% in the building and resulted in 56% savings for heating.
- ["Where is the Human in Climate Change"](#) is a new podcast and essay series geared towards a global audience with the goal of exploring complex issues from a humanist perspective.
- The College of Veterinary Medicine designed and successfully implemented [an innovative waste and energy reclamation system on campus](#) which successfully separates cow manure from their sand bedding, significantly reducing waste and adding a new energy capture stream. This "Poop to Power" System results in clean bedding and a liquid waste that can be used for electricity and heat.



- [On May 24th, Cornell opened a large pyrolysis kiln](#). The kiln creates an earth-friendly biochar which boosts fertility of soil and helps retain water in dry soil and promotes drainage in soil that is too wet. This innovation is "a compelling alternative to fossil fuels especially in those global regions that have limited access to transportation fuels and where crop production relies on boosting carbon in soil."

- The [Staff Sustainability Champions](#) program is in its second successful as a collaboration between the Campus Sustainability Office and the Employee Assembly to recognize and motivate staff in acts of sustainability leadership across campus.
- The [Sustainability Life Recipes](#) initiative is in its second successful year to promote the Get Your Green Back Tompkins program's steps in the Cornell community. The Campus Sustainability Office communications team created the recipes, which are included in major campus communications channels. Students are also working with GYGB to create a mobile educational energy and power savings home as a resource for the community to demonstrate home-improvement options that reduce carbon and save money.
- Cornell AppDev, a project team at Cornell that designs, develops and distributes mobile and web applications through the App Store, [released Ithaca Transit](#) to help them navigate Ithaca by bus more easily.
- Cornell launched a new [Waste Map in 2018](#). The *Campus Sustainable Waste Map* shows locations on campus where Cornell recycles, composts, and provides disposal for other types of waste like electronic goods. These resources are an important way to "make the invisible, visible" and demonstrate to community members the variety of projects and initiatives underway to create a sustainable campus.
- [Cascadilla Community Solar Farm at Cornell broke ground](#). The new solar farm – Cornell's 6th – will generate over 30,000 megawatts annually and double the University's annual renewable energy use. Cornell's five regional 2MW solar farms and on-campus hydroplant and rooftop PV arrays now generate the equivalent of 10% of the Ithaca campus' annual electricity use.
- [Upson Hall became Cornell's fifth LEED](#)



[Platinum building](#) and the 21st overall LEED certified project completed on the Ithaca campus. Calculations for Upson Hall's energy efficiency reflect a 66.62 percent energy-cost reduction, a new Cornell LEED record.

- Cornell's [Procurement and Payment Services](#) is advancing the capacity for users on campus and central administrators to track sustainable purchases from different types of organizations. The new tracking efforts will help demonstrate the percentage of funds spent supporting sustainable business.
- The first annual [Cornell University Golden Gorge Awards](#) honored the contributions of student leaders in creating a more sustainable campus on May 8th, 2018. The award ceremony recognized students, student organizations, and student sustainability work on the Cornell's campus and in the community which advanced the climate action plan and related sustainability goals.
- Scott McArt, assistant professor of entomology, is partnering with Cypress Creek Renewables, a leading national solar developer, on [a groundbreaking study to determine the local benefits of wildflower plantings on solar sites in central New York and the Hudson Valley](#). The three-year, \$100,000 partnership includes potentially aiding in the restoration and conservation of declining bee species in the state.
- [Cornell's Assemblies continue to support sustainability](#) as part of the University's governance structure. Here are resolutions passed in support of sustainability in 2018:
  - [Student Assembly R14: Increasing the Minimum LEED Certification](#)
  - [Student Assembly R11: Renewing the Investigative Ad-Hoc Committee on Cornell University's Campus Printing System and Stewardship in IT Governance](#)
  - [Employee Assembly R8: Furthering the Institutional Commitment to LGBTQ+ Inclusion](#)
  - [Student Assembly R53: Expanding Bike Share on Campus](#)
  - [University Assembly R17: In Support of Cornell Employee Assembly Resolution #11: Promoting Staff Participation in Cornell Campus Climate Change Literacy Goals](#)
  - [Employee Assembly R11: Promoting Staff Participation in Cornell Campus Climate Change Literacy Goals](#)

### **Downtown Ithaca Alliance**

- The DIA, in collaboration with Ithaca Carshare and Tompkins Consolidated Area Transit (TCAT), is currently operating a pilot Transportation Demand Management (TDM) program aimed at helping downtown employees and residents forgo their single occupancy vehicles and instead use alternative modes of transportation. This program will optimize downtown land use and taxpayer revenue by forestalling the construction of a new garage. It will also reduce carbon emissions by thousands of pounds and promote health, social engagement, and employee goodwill. NYSERDA grant funds were applied for to capitalize a project that will create individualized TDM plans and offer one-on-one planning assistance along with a suite of new transit services (including remote parking and a backup ride home program) to workers and residents in downtown Ithaca.



smooth as possible. The new location actually allows bus riders to easily move from TCAT to intercity buses- reducing vehicle trips.

- Downtown projects such as the additional bike racks that were installed as a result of a grant from a local foundation will decrease dependency on automobiles and increase walkability and access to public transit.

- During 2018, the City of Ithaca, with the support of the DIA, relocated the intercity bus depot to downtown. The former West End location was closed due to retirement and the depot was forced to relocate. The City identified East Green Street as an alternative location and has been working with area businesses and the City Department of Public Works to make the change as

- The City Centre project, currently under construction, includes many green features such as energy efficient windows and lighting, and classic sustainable appliances like low-flow toilets. City Centre is also eliminating the need for venting to accompany clothes dryers, which will be outfitted with heat pumps (standard practice in Europe, but a burgeoning innovation in the United States). The newly built Tompkins Financial Company headquarters includes some similar energy efficient features as well.
- Downtown Ithaca continues to be a “walker’s paradise” where daily errands can be completed without the use of a vehicle, according to Walk Score. Walk Score is a tool that rates the walkability of more than 10,000 neighborhoods throughout the continent. The numerical Walk Score for the Ithaca Commons is 97 out of a possible 100, the same as 2017. Our Walk Score is just three percentage points shy of Greenwich Village; by contrast, Lansing ranks in at 38, and Cayuga Heights ranks in at 28. We were also listed as number one on MSN Real Estate “Ten Cities Where You Want to Walk to Work.”
- Solar trash compactors along The Commons help to reduce the carbon footprint. These compactors compress their contents to allow more trash per bag so they don’t have to be emptied as often. Fewer collections mean cost-savings for labor, fuel and maintenance and reduced greenhouse gas emissions. Powered by the sun, these eco-friendly compactors operate in every kind of weather — snow, rain, or shine. The DIA has coordinated a shared recycling and trash compactor program to encourage proper disposal of recyclable materials generated by over 300 businesses and residents on and around the Commons.
- The DIA continues to work on a transit corridor plan to improve bus service between Downtown Ithaca, campus communities, and other cities. Downtown Ithaca is the regional transit hub for Tompkins Consolidated Area Transit (TCAT), which was recently recognized by its industry peers as being the best transit system of its size in North America. TCAT contributes greatly to the community, serving as an alternative to car ownership, thus reducing traffic congestion and greenhouse gas emissions. It saves the cost of building parking facilities. Its fleet currently includes eight electric-diesel hybrid buses.
- Downtown Ithaca is home to the headquarters of Ithaca Carshare, a non-profit car sharing service with a growing fleet of fuel-efficient vehicles shared by over 1,500 members. Users can save hundreds of dollars per month in avoided gas, maintenance, and insurance costs while reducing traffic congestion, pollution, and space and money devoted to parking. Independent studies show that for each Carshare vehicle, over 15 privately-owned vehicles come off the road.
- Bike Walk Tompkins, a program managed by the Center for Community Transportation, has taken the lead on bringing a bike-share program to downtown Ithaca as part its Blueprint for Better Bicycling program. As the number of people who use this program bikeshare program increases, we’ll see a reduced number of people using their vehicles to travel around downtown, thus reducing greenhouse gas emissions in our area.
- Press Bay Alley, two blocks southwest of the Ithaca Commons, serves as a pickup spot for the Full Plate Farm Collective CSA each Thursday. CSA (Community Supported Agriculture) is a cooperative relationship between a farmer and consumers; consumers commit to buying a crop “share” and growers commit to growing that amount of produce. Full Plate Farm Collective farms grow over 50 acres of organic vegetables and share the vision of building community, farming with integrity, and growing high quality food with fair prices for all involved.
- Downtown Ithaca is an important green retailing showcase, with at least 14 independent, locally-owned stores that specialize in reused and recycled products. Such stores include Sheldon Hill Vintage & Estate Jewelry, SewGreen, The Vintage Industry, Pastimes Antiques, Trader Ks, Autumn Leaves Used Books, and Home Green Home. Shopping at reuse stores means no additional energy was used. Watershed, located in the Downtown Ithaca Business Improvement District, is committed to



reducing environmental waste. Behind the bar, they use high-end citrus products instead of fresh fruit to decrease food waste without compromising on drink quality. In a standard bar, it takes about 4 pounds of ice to chill a glass and shake a cocktail, but at The Watershed many of the drinks are built in the glass to lessen the amount of ice and water used in the bartending process. With a menu constantly changing based on what's available, Watershed opted for digital menu boards instead of going through a wasteful cycle of updating printed menus.

- Decorative lighting in Downtown Ithaca is energy efficient. The DIA uses LED lighting to decorate the poles on The Commons during the holiday season.
- Downtown living is sustainable living. According to the Center for Sustainable Economy, a couple living in an apartment in downtown Ithaca, using TCAT, and adopting excellent green habits (e.g. unplugging appliances, composting, buying organic food) would have a carbon footprint approximately 34 percent of the national average. A couple with the same commendable habits but residing in a single-family home outside of town and commuting in a mid-size car would be at 76 percent. Allowing for more vertical growth will allow more in our community to take part in this "green revolution."
- The DIA has implemented composting and recycling systems for its major downtown events — Apple Harvest Festival, the Summer Concert Series, Chowder Cook-Off and Chili Cook-Off — which are attended by over 100,000 locals and tourists. Local service organizations like the Cornell Rotary Club have helped to oversee these composting stations.
- Downtown Ithaca is home to Coltivare, a farm-to-table restaurant and bar as well as a major culinary education facility. Coltivare, an initiative of Tompkins Cortland Community College, offers a unique hands-on experience alongside working professionals for students studying sustainable food systems and entrepreneurship. The team aims to find all their menu items within a 300-mile radius, with some food sourced from the college's own farm. Their new waste management system, which reduces food scraps to a grain-like compostable material to be used by the farm, is the first of its kind in the U.S.

## EMPEQ



Ithaca and NYC-based EMPEQ is an alternative equipment financing solution that helps small- to medium-sized businesses access the core equipment and energy efficient solutions that they need. We've created a proprietary underwriting and service solution that connects large institutional capital simply, swiftly, and safely to SMBs to install and/or upgrade mission-critical building equipment through a subscription contract. Here are some of our accomplishments for 2019:

### 1st Quarter

- EMPEQ installed its first demonstration project at a commercial site in Wisconsin. This revenue generating project successfully tested our system and created monthly recurring revenues. When we asked for a quote from the customer about working with EMPEQ, the president of the organization responded, "It's the best decision we've made in years."
- We became a NYSERDA Portfolio Company.
- We were invited by New York State to meet with various NY utilities in order to partner with them and deploy our program in their service territories.

### 2nd Quarter

- EMPEQ's cloud-based Empower Visibility MVP completed.
- Added our first vendor partners.
- Began lead generation activities with our first utility partner.

### 3rd Quarter

- We were the first to receive the \$100,000 [NYSERDA Ignition Grant](#).
- Participated as a finalist in New York State's [76West Competition](#).
  - *76West is an unparalleled competition focused on growing entrepreneurs and attracting resources from the U.S. and around the world to build clean energy businesses and jobs in New York State's Southern Tier region. The competition offers \$20 million in prize money and support services, including a \$1 million top prize.*
- Featured in [Utility Dive Magazine](#).

- *“Empower Equity, based close by, in Ithaca, N.Y., told the panel it has developed a new model for funding energy efficiency upgrades—essentially, a rethinking of how equipment retrofits are paid for. Empower would offer to install energy efficient equipment for businesses as a subscription, with contracts running between five and 10 years.”*
- Graduated from Cornell University's [Life Changing Labs Accelerator](#).
- Closed “Friends & Family” Round raising \$575,500.

#### 4th Quarter

- First New York State demonstration project completed.
- Selected by a large utility in NYS to partner on a 3-year \$22.5M financing program.

### Finger Lakes Land Trust

The Land Trust completed four land protection projects within the county during 2018 and also received a \$900,000 grant from New York State to acquire conservation easements on land bordering tributaries to the southern end of Cayuga Lake. The organization also provided a variety of field trips and educational programs to the public at no charge and enhanced its management of 40 public conservation areas throughout the region. Within Tompkins County, four properties were secured last year:



- Six Mile Creek Watershed – a perpetual conservation easement was used to secure 138 acres of upland forest located in the towns of Dryden and Caroline. Protection of these lands will help ensure the quality of Ithaca’s drinking water supply;
- Emerald Necklace – a perpetual conservation easement now ensures the future of 88 acres of forest that borders a Land Trust nature preserve in Newfield. Protection of this land help maintains corridors used by a variety of wildlife, including black bear and fisher.
- Lindsay Parsons Biodiversity Preserve – purchase of a 9-acre parcel secures a Great Blue Heron rookery as well as undeveloped road frontage and uplands bordering a kettle lake. This latest addition to this 500+ acre sanctuary also hosts a wetland overlook that will be made accessible to the public.
- Black Diamond Rail Trail – in partnership with NYS Parks, the Land Trust purchased an 11-acre property that features extensive frontage on both the Black Diamond Trail and the Cayuga Lake Scenic Byway. The property also hosts mature woodlands overlooking Cayuga Lake.

### Finger Lakes ReUse



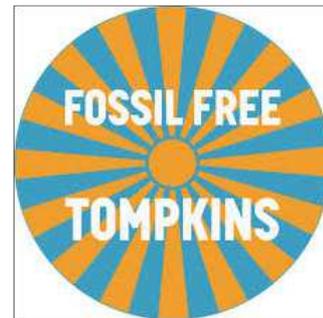
In 2018 Finger Lakes ReUse continued to offer easy and accessible pathways to the public for unwanted or excess materials in the face of our growing global waste problem. We are continuing to refine efficiencies and expand capacity to manage the increasing flow of local materials (donations of items were up 52% in 2018 over 2017) to better match the volume of materials being unnecessarily lost daily to landfills. Among our accomplishments, in 2018 Finger Lakes ReUse:

- Diverted an estimated 480 tons of materials through our two community *ReUse Centers*, including furniture, building materials, housewares, electronics, books, textiles.
- Created 7 new living wage jobs, increasing our staff to 33 people, or 27.7 full-time equivalents.
- Worked with 25 local human service agencies through our *ReUse Materials Access Program*, supported by contributions to the *ReUse Community Fund*, providing materials for over 160 households in need.
- Trained 18 people through our *ReSET (ReUse Skills and Employment Training)* program in 2018, including our first *ReSET Re-entry* pilot participant, and 6 graduates reported successful employment post-program.

- Worked alongside 127 individual volunteers, with over 17,000 hours of volunteer labor logged total. This is roughly equivalent to 6.7 fulltime staff members helping advance our mission to enhance community, economy, and environment through reuse.

### **Fossil Free Tompkins**

- Sigh. In late April the Cayuga Power Plant announced that they are once again considering converting to burn fracked gas – this time with a dangerous plan to deliver gas to the plant by truck! So we have revved up our campaign to once again fight for the retirement of this dangerous, inefficient fossil-fuel burning dinosaur.
- NYSEG’s RFP for “non-pipe alternatives” such as heat pumps and energy efficiency, as predicted, was a flop, because it was poorly conceptualized and poorly executed. As a result, we’ve spent much of 2018, and into 2019, working to get a better RFP issued for the second attempt.
- While it’s depressing that we’re stuck working on these same fossil fuel issues while the ice caps melt, there have been exciting developments and victories in our efforts. Some highlights include:
- We’re excited to see the Public Service Commission stand strong and promote non-gas, non-pipe alternatives in Westchester County when ConEdison declared a gas moratorium in Westchester County, blaming the Governor for not allowing the Constitution Pipeline. We hope the trend continues as more utilities pile on, threatening moratoriums unless they can have their pipelines.
- In July 2018 approximately 30 Tompkins Co activists got on a bus to Avon, NY for a public hearing on DEC’s proposed rules to shut down coal generation. These rules offered 3 options – close, install carbon capture sequestration, or repower to gas. Gas does have lower CO<sub>2</sub> emissions, but it’s just as bad, if not worse, than coal because methane’s global warming potential is 100x higher than CO<sub>2</sub>. Of course, we opposed repowering. Still waiting to see final rules issued.
- Our campaign against the Power Plant has been boosted by collaboration with Sandra Steingraber and Mothers Out Front, FracTracker Alliance, Food and Water Watch, and SANE Energy, resulting in the formation of the No Fracked Gas Cayuga campaign. Biggest local victory came just before Thanksgiving, when over 100 people turned out to a County Legislature meeting urging support of a resolution to the DEC stating that the County opposed the conversion of the plant to burn gas. We won the vote 12-2.
- It has been a year since Cayuga Power Plant sent its proposal to DEC to convert to gas. Shortly after receiving the application, DEC notified Cayuga that the application was incomplete, and provided a list of additions that were needed. Cayuga has not filed anything more, so its application is still incomplete. Cayuga’s sister coal plant, Somerset, recently announced they are exploring conversion to a data center. Maybe the same fate for Cayuga? OTOH, Trump just announced plans to transport LNG by rail – could this be economically beneficial for Cayuga? Stay tuned.



### **Get Your GreenBack Tompkins**

- Get Your GreenBack’s personalized system of energy advising—which includes a cadre of volunteer Energy Navigators who do outreach and follow up with interested individuals—had a successful third year.
- We trained 13 new Energy Navigators who, together with a few other active Navigators from previous years, reached 1,240 people and provided support to approximately 100 local residents, most of whom are from low- or moderate-income households.
- NYSEG provided support this year to the Energy Navigator program, enabling us to offer stipends to some Navigators (most of whom are low-income) and purchase equipment for more effective training and outreach (e.g. an infrared camera, watt-meters, and tablets), as well as materials Navigators can give to residents for direct installs (such as LED light bulbs and plastic coverings for windows).

- Our expanded work in the Southern Tier through the NYSERDA Community Energy Engagement Program grant has led us to create a new website and materials under the “Smart Energy Choices” brand, while we continue to use GYGB materials for the Tompkins County area.
- GYGB’s new Associate Coordinator, Erica Herman, has been pivotal in enabling GYGB to expand its presence and outreach, attending over 20 community events and festivals, helping us interact with 1,767 residents
- About 18 students from the Cornell University Sustainable Design Club helped to develop advanced plans for the construction of a “Powerhouse,” a Tiny Home on wheels whose purpose is to engage thousands of residents around energy-related topics and encourage them to take action.
- We identified 20 households for a heat pump pilot, issued a bid, and chose a local contractor to install a simple heat pump system for somewhere between \$3,000 and \$4,000.
- With the support of the CCE-Tompkins Agriculture program and Healthy Food for All, a GYGB intern helped organize the Community Supported Agriculture (CSA) Fair at this year’s Agstravaganza held on the Commons in downtown Ithaca.
- Cornell University, Ithaca Sustainability, and TCCPI continue to share Get Your GreenBack content with their respective newsletter readers, and we had coverage of our programs in local radio, television, newspaper, and social media outlets.



#### **HeatSmart Tompkins, a program of Solar Tompkins**

- HeatSmart is now finished with its third public campaign and revving up to start its fourth in May 2019.
- Public Outreach has again reached every town in Tompkins County and the City of Ithaca. Public meetings were held in each municipality and some surrounding areas of adjacent counties such as Spencer-Van Etten, Owego, and Lodi. These meetings featured an overview talk by the HeatSmart Program Director, on the technologies and essential role of heat pumps in meeting climate goals. The attendees were also provided the opportunity to interact with the two vetted installer partners prior to enrolling in the program.
- HeatSmart Tompkins made a major transition this past year. Our last grant from the Park Foundation ended in September 2018. On October 1, 2018, we began our new funding through NYSERDA’s Clean Heating and Cooling Communities (CHCC) program. This program, modeled in part on our past campaigns, funded eight communities across the state and as many more are being added to the campaigns this spring. While institutional requirements are sometime frustrating, the NYSERDA CHCC program is run by very talented and dedicated people who share our vision. Being part of the program has also allowed the participating teams to have considerable access to expert technical assistance. This has included a variety of tools, such as those developed for appraising Air Source Heat Pump (ASHP) hot water heaters and duel fuel systems in which an ASHP is integrated with a furnace.
- While we would like to see full replacement of furnaces, the economics are very unfavorable for natural gas customers and a duel fuel system may provide air conditioning and more than 50% displacement of fuel use. We also have received assistance from customer targeting tools and an interactive network of like-minded community programs all seeking better ways to speed heat pump adoption.



- HeatSmart Tompkins is also developing two new initiatives that expand on our past services. One is in partnership with Sustainable Tompkins, which will take the lead. The program addresses the needs of low-income members of the community to make heat pumps more affordable. This initiative will seek to augment the Finger Lakes Climate Fund and make more grants available to residents supplementing existing NYSERDA incentives. Solar Tompkins is the lead in the second new initiative, which is a workforce development program aimed primarily at installers, and potential installers, of ASHP energy systems. We recognize that if we are to increase adoption of heat pumps to achieve the community's climate goals, a trained work force needs to greatly expand. We will be working with Taitem Engineering and the Building Performance Contractor's Association (BPCA) to develop and present course materials.
- The numbers of HeatSmart participants decreased in 2018 for the second year in a row. This is disappointing, but is related to the fact that our message is heard most readily by the most climate-concerned members of our community, and that is still a small fraction. Furthermore, while our numbers of actual enrollees are low, discussions with local installers reveal that they are receiving significant numbers of leads from their former HeatSmart customers. This is attributed in part to the buzz generated by HeatSmart Tompkins and its public programs. While it is hard to quantify, it is likely that this indirect impact across many local businesses is several-fold greater than the number of contracts attributed directly to full program participation.
- To increase the awareness of heat pump opportunities, HeatSmart Tompkins has created the HeatSmart Outstanding Earth Stewardship Award. This is intended to recognize commercial entities that are taking major steps towards maintaining near zero carbon emissions buildings. The first award was provided to Purity Ice Cream which heats its entire building with geothermal heat pumps and powers them with solar energy. This system is so efficient at air conditioning as well as heating that the kitchen is fully air conditioned in the summer, something rarely seen in restaurants. This award will be an ongoing initiative. If you are aware of a business that might merit such recognition, please let us know. ([jonathan@solartompkins.org](mailto:jonathan@solartompkins.org)).

HeatSmart Tompkins  
recognizes  
**Purity Ice Cream Co.**  
for  
*Outstanding Earth Stewardship*



Purity Ice Cream heats its shop and parlor with geothermal heat pumps and powers them with solar-generated electricity.

This combination of renewable energy and the most energy efficient heating and cooling system protects our home planet and those living on it from many pollutants, including climate disrupting carbon emissions.

*So please, make yourself at home in this shop, on this planet, have an ice cream, and enjoy!*



This award is presented by HeatSmart Tompkins, a program of Solar Tompkins providing guidance to residents interested in achieving economical, carbon emission free heating and cooling of their homes.

Learn more about the HeatSmart program at [HeatSmartTompkins.org](http://HeatSmartTompkins.org)

### HOLT Architects

- HOLT continued championing, and participating in, the efforts of TCCPI and its flagship project, the Ithaca 2030 District, through:
  - In-kind contribution of Andrew Gil's time serving on the TCCPI Steering Committee
  - In-kind contribution of Andrew Gil's time serving on the Ithaca 2030 District Advisory Board, and reviewing/contributing to the submission requirements of the NYSERDA Grant for establishing the Ithaca 2030 District
  - HOLT hosting the Ithaca 2030 District Quarterly Building Owner's meetings

- HOLT hosting the TCCPI monthly meetings when the County Library meeting space is unavailable



- HOLT has continued to investigate methodologies for better understanding the energy needs of its 619 West State Street offices as well as potential actions for lowering the overall energy use. 2018 was the first calendar year that HOLT had twelve months of data for both NYSEG grid electricity consumption and PV electricity production. Unfortunately, 2018 is also known to have typically resulted in up to 20% less solar electricity production in this geographic region. HOLT's net zero target fell to roughly only 70% of electricity used being produced onsite. However,

HOLT volunteered for "Internet of Things" real-time metering, a program administered by the Cornell Cooperative Extension and several oddities in HOLT's energy consumption were immediately detected. These are presently being investigated, along with additional sensors being installed.

- Graham Gillespie, President of HOLT Architects, served on the TCAD and Tompkins County Energy and Economic Development Task Force, the community-based work group charged with making recommendations to the Tompkins County Legislature to meet the community's energy and economic development goals in concert with meeting the Tompkins County Legislature's goals for GHG emissions reductions.
- HOLT completed a 3-year LEED certification design and documentation process for HOLT's design of Cornell's College of Veterinary Medicine's new "Community Practice Service Building" (a.k.a companion animal veterinary clinic), with a summer 2018 submission of the team's sustainability efforts, to the GBCI's LEED Review team.
- HOLT continued to work on the LEED compliance and documentation efforts for the certification of HOLT's new offices at 619 West State Street, occupied in the spring of 2016 (and which was submitted to the GBCI's LEED Review team on February 19, 2019).

### Ithaca 2030 District

- Currently, member buildings in the District include the following:
  - Alternatives Federal Credit Union
  - Argos Inn
  - Cascadilla Oasis, LLC
  - City Hall
  - Cornell Cooperative Extension-Tompkins County
  - Gateway Commons
  - HOLT Architects
  - Ithaca Bakery
  - Press Bay Alley
  - Printing Press
  - Purity Ice Cream
  - Space@GreenStar
  - Taitem Engineering
  - Tompkins County Human Services Annex
  - Tompkins County Chamber of Commerce
- We continued to collect monthly utility data for the property owners and uploaded to Portfolio Manager to determine EnergyStar scores. An energy and water dashboard to track monthly consumption pulls data automatically from Portfolio Manager every few days.
- We also continued the real-time energy monitor pilot involving four District buildings.
- Having established the energy, water, and transportation baselines for the Ithaca 2030 District, we were able to produce the first set of building performance reports for the District members.



These reports providing owners and managers with a detailed sense of where they stand in relation to the energy, water, and transportation goals of the 2030 District and included a district-wide analysis and helpful glossary of technical terms employed in the reports.

- We held monthly Advisory Board meetings and four District Partner meetings as well as published four issues of the e-newsletter. The District Partner meetings bring together the property owners and other stakeholders to discuss issues of mutual concern and provide updates on the progress of the 2030 District.
- The executive director attended the 2030 Districts Network Summit in Stamford, CT and presented on “Net Zero Is a Big Number: The HOLT Architects Office Renovation.”

### **Ithaca-Tompkins County Transportation Council**

- Tompkins County and the ITCTC worked with Energetics, Inc. to coordinate local participation in a NYSERDA project that identifies Tompkins County as an EV Deployment Community.



Subsidies were offered for installation of 11 charging stations in 2017. During 2018 there was substantial community outreach and education to promote EV use in Tompkins County. Energetics tabled and participated in numerous community events. EV showcases were held at various locations. An interesting component of the project was to engage with car dealerships to make sure they have the information and supply of vehicles to facilitate EV purchases. The project is now complete. A stakeholder group continues to meet under direction

of the Way2Go program at Coop Extension. Resources: Electric Vehicle (EV) Infrastructure Plan for Tompkins County <http://tompkinscountyny.gov/itctc/projects#EV>. This project includes, a description of strategies and technologies for EV recharging stations with particular attention to local (Ithaca-Tompkins County) conditions; an Excel spreadsheet site evaluation tool for EV charging station suitability; evaluation to numerous sites around the county; and, finally, a detailed analysis/plan for EV charging station installations at preferred locations. The site evaluation tool is available for anyone to use.

- The ITCTC continued to advance online ridesharing in the greater Tompkins County area. The effort has a new name, Finger Lakes Rideshare, and can be found at <https://www.zimride.com/flxrideshare/> or [www.fingerlakesrideshare.org](http://www.fingerlakesrideshare.org). The system is seeking to expand to a regional rideshare program powered online by Zimride. Binghamton University joined the FLX Rideshare Coalition in 2017 and Cortland is expected to join early 2019. Current partners include Tompkins County, Way2Go, Cornell University, Ithaca College, TC3, TST-BOCES, Wells College, Binghamton University, and ITCTC. This list will grow as neighboring counties and institutions decide to participate.
- The ITCTC worked with a consultant firm, RSG, Inc., in a NYSERDA-funded project to develop an enhanced model to determine greenhouse gas emissions from the transportation sector. This work started towards the end of 2017 and continued through 2018.
- The ITCTC began its update of the 20-year Long Range Transportation Plan for Tompkins County. This process will continue through 2019. To learn more and offer comments visit: <https://www.facebook.com/ITCTCMPO/> or write to [itctc@tompkins-co.org](mailto:itctc@tompkins-co.org).

### **Ithaca College**

#### Office of Facilities

- 2.9 MW solar farm celebrated its second anniversary and, to date, has produced 6.87 GWh of electricity for the College and prevented 4,858 MT of CO<sub>2</sub>e emissions.
- CNS First Floor LED lighting upgrades.
- East Tower window replacement.

#### Office of Energy Management & Sustainability

- Transitioned 100% of electricity to Green-e Certified energy, resulting in a complete elimination of our Scope 2 emissions
- Installed additional building-level water and electricity sub-meters to identify usage patterns.
- Completed an energy audit in the A&E Center with assistance from GreenerU. Energy conservation recommendations are under consideration.
- Climate Action Plan Reassessment Team developed an energy road map to help guide the college for the next ten years and supports an expedited carbon neutrality date.
- Attended and presented at the annual AASHE, NYCSHE, and other professional conferences.
- Further refined our Scope 3 emissions assessment with help from Parking Services and Travel Services.
- Exploring regional geothermal plant concept for CNS, Williams, and Park Communications School. Funding provided by the NYSERDA Geothermal Clean Energy Challenge Grant.
- Members of the NY Higher Ed Large Scale Renewable (NYHE LSRE) consortium, a public-private higher-education partnership looking to develop a number of large scale renewable energy sites to meet our varied environmental commitments.
- Supported EV Tompkins initiative to increase electric vehicle charging stations in the community
- Installed two EV charging stations which are free and open to the public
- Hosted the initial EV Tompkins Community Car show.
- Continued improvement with our internal marketing and communication efforts.
- Continued the Eco Reps and OEMS Intern programs, hiring 15 students throughout the year.
- Utilized Staples funding to support sustainability internship positions within the School of Business and Environmental Studies.
- Hosted the second annual Sustainability Luncheon, which included faculty and staff from across disciplines discussing the problems and opportunities associated with current American diet trends.



### Engagement

- Participated in Orientation and First Year Residential Experience (FYRE) events. Hosted G.R.E.E.N. Tour, a Jump Start program for incoming freshmen.
- Sponsored and developed programming for "The Quest for a Sustainable Future" themed kickoff event, part of the Integrated Core Curriculum, in partnership with Cornell Cooperative Extension.
- Eco Reps continued sorting compost, recycling, and trash at football games in Butterfield Stadium, which will continue every fall.
- Launched Cupanion's "Fill It Forward" campaign, a nation-wide program focused on eliminating single-use plastics. App data shows this has resulted in approximately 7,000 fewer plastic water bottles at IC during the first year.
- Received Presidential Seed Grant funding to incorporate student research in an apartment renovation featuring sustainable design.
- Sponsored The NWF EcoCareers Conference which prepares students and young professionals for wildlife and sustainability careers by providing information on the latest EcoCareer trends from leading analysts and employers.
- Developed and presented content for nine Ithaca College Seminar Series (ICSM) lectures: Choices for a Sustainable Future, Sustainability & Social Justice, Sustainability Literacy Pilot.



- Supported the local Mobile Food Pantry by providing reused/recycled kitchen supplies to students in need.
- Continued the successful South Hill Forest Products, a student-run business dedicated to providing high quality, all natural non-timber forest products to the community, using the natural resources within the Ithaca College Natural Lands.
- Eco Reps assisted Ithaca Children's Garden with seasonal projects.
- Partnered with the School of Business on the second annual IC Sustainability Week, including keynote addresses from Bill McKibben and Anthony Rogers-Wright.
- Participated in the annual Recyclemania competition.
- Continued partnership with the FYRE Community Council and Eco Rep program.
- College Circles Energy project provided the Circles apartment residents with electricity and gas bills that also include CO2 equivalents.
- Conducting Ithaca College Natural Lands (ICNL) carbon sequestration study.
- Presented monthly Student Leadership Initiative (SLI) discussions geared at engaging students in a new sustainability dialogue surrounding the monthly themes: Waste, Transportation, Water, Food, Energy, Health, Social Justice, Business, and Climate Change.
- Strengthened relationship with Student Housing Energy Reduction Program (SHERP) and Cornell Cooperative Extension (CCE).
- Developed content and presented as guest-lecturer(s) in a number of courses.
- Hosted monthly events to engage students in sustainability dialogue surrounding monthly themes.
- Increased circulation and improved monthly "Installments", a quick read posted in campus restrooms that highlight global sustainability issues.
- Expanded campus composting to now include College Circle, Emerson, Terrace, and Garden Apartments.
- Continued Office Supply Collection and Reuse (OSCAR) and Take It Or Leave It (TIOLI), a free program that encourages students to donate and reuse gently used dormitory and school supplies. TIOLI also includes an end-of-year clean-up of campus residential buildings where items are donated to Ithaca Reuse.

#### Transportation

- Procured an electric/solar vehicle, informally known as the Eco Mobile / Eco Bug.
- Supported sustainable transportation through partially-subsidized TCAT bus services.
- Supported ride-sharing through the Finger Lakes Ride Share Coalition, in partnership with a number of local higher educational institutions and Zimride.
- Improved accessibility of Ithaca College Natural Lands by building turnpike-style paths.
- Organized and sponsored Car Free Day which encouraged folks to try alternative transportation. 150 campus community members took the pledge and received TCAT bus passes for the day.



#### Dining Services

- Received recognition from the Humane Society of the U.S. for exceptional plant-based options.
- Supports student organization, Stop Wasting Ithaca's Food Today (SWIFT), which packages surplus meals for donation to the Rescue Mission.
- Implemented LeanPath Program, to minimize food waste in production and post-consumer waste.
- Made improvements to portion control for catered and dining hall meals to further eliminate food waste.
- Increased plant based menu options by 10% and reduced animal protein menu options by 10%.
- Planning for a new on-campus Food Pantry.
- Dramatic reduction in purchases of plastic straws.
- Fundraising for the Food Bank of the Southern Tier's "Backpack Program."
- Increased reusable mug discount from 15 cents to 25 cents this year.

- Ongoing efforts to expand local and hyper-local purchases.
- Continued back-of-house composting initiative.
- Expanded messaging to encourage use of reusable items in dining halls and retail dining locations.
- Continued to collect used cooking oil for biofuel purposes.

### **Learn@EcoVillage Ithaca**

- We held a three-day restoration agriculture workshop with Mark Shepard. The workshop concluded with the planting of thousands of trees, including chestnuts, hazelnuts, and butternuts.
- We rolled out a new Eco-Gap 8-week program that gives young adults, ages 17 - 20, practical tools for transforming the world and provides them with the opportunity to become part of daily life at EcoVillage Ithaca, one of the largest and most successful ecovillages in the U.S. Undertook planning for 2019's EcoGap Spring/Summer Internship program and Fall Immersion Program (see <http://ecovillageithaca.org/learn/eco-gap/>).
- Ian Shapiro, founder of Taitem Engineering, and Liz Walker offered a three-hour workshop in April and May to decision-makers from Tompkins County municipalities, helping to train them in the latest green building information, so they can make sure developers and builders are using the most energy-saving methods.
- Liz facilitated a NYSEG Customer Outreach and Engagement Discussion for Cornell Cooperative Extension in July to give feedback on the local experience of the Energy Smart Community roll-out of Smart Meters.
- Terry Moore (CEO of MCCI) and Bob Shenk (NYC Passive House) conducted studies of three TREE homes to monitor heat, humidity and energy performance of PH certified homes, and compare them with three conventionally built homes in Ithaca.



### **Local First Ithaca**

- Produced our 8th Annual Guide to Being Local.
- Continued our work with the Ithaca 2030 District and Tompkins County Climate Protection Initiative Steering Committees.
- Sponsored "Plaid Friday" and "Small Business Saturday" in November to encourage community members to shop locally during the holiday season and experience what our home grown, independent businesses have to offer.
- Attended the 5<sup>th</sup> Annual NY Sustainable Business Summit in April, which was held in Albany – lobbied state legislators on policy issues related to sustainability.

### **New Roots Charter School**

A New Roots education empowers young people as leaders and entrepreneurs for the 21st century. Our focus on environmental stewardship, social justice and sustainable economics gives youth the skills of hands, heart and mind they will need to get ahead of the curve and create a successful adult life and career in this new century of dramatic technological, social and environmental change. New Roots features a unique four-year learning sequence that fully integrates Education for Sustainability (EfS) standards and interdisciplinary, community-based projects featuring sustainability themes while meeting all New York State graduation requirements. Our lower school program (grade 9-10) cultivates foundational understandings and skills that prepare students to become actively involved in their school and local community as leaders, entrepreneurs, and activists when they move into the upper school program (grades 11-12).

- New Roots is proudly celebrating 10 years of education for a sustainable future with a partnership with Sachem (Chief) Samuel George of Cayuga Nation and New York State Department of Environmental Conservation (DEC). After piloting sustainable indigenous practices shared by leaders of our Haudenosaunee neighbors, New Roots was recently awarded a \$38,745 grant from the New York State DEC to expand our Cayuga Wetlands Project, designed to restore a wetland on the south end of Cayuga Lake by planting and maintaining wetland plant species. Students initiated this project through their Earth Systems Science class in 2016. In response to water quality testing and research about indigenous land and water management practices, students petitioned the City of Ithaca for permission to establish a pilot wetlands site by planting cattail, calamus, and arrowhead. Subsequent water testing by several science classes at the test site has demonstrated improved water quality due to biofiltering of harmful pollutants, including phosphorus that may lead to harmful algal blooms. In this next stage, we will use grant dollars to establish a youth conservation corps that learns ecosystem restoration skills while providing the labor to expand the wetlands sites to protect and improve our waterways in New York State.
- The Green Schools National Network and the Center for Green Schools at the U.S. Green Building Council (USGBC) are recognizing New Roots as a winner of Transformation in the “Best of Green Schools” Class of 2019! The transformation award recognizes “investments of time, energy and resources to transform a school, school community, event or policy into an exemplary model for the green schools movement.”
- The Green Schools National Network recognizes New Roots as a national leader in the field of education for sustainability. New Roots and 9 other leading schools are inaugural members of the Catalyst Leaders Network, which prepares each school to become professional development hubs for other schools in 2020.
- All New Roots students enjoy a free breakfast and lunch featuring fresh, locally-sourced ingredients from our Farm to School meal program, every day! The Youth Farm, an organic farm run by local high school students, is a primary source of our produce. Our staff also enjoys a free lunch with our students daily. Healthy food for all is at the root of sustainable education and sustainable communities.
- The Farm-to-School lunch program composts 100% of all food waste generated on a daily basis through Natural Upcycling, a local business. Natural Upcycling turns food waste into renewable resources – energy and fertilizer -- through a process called anaerobic digestion.
- A team of New Roots teachers, students, and administrators collaborate with schools with environmental stewardship missions across the Northeast as part of Teaching Our Cities, an EPA-funded project. The mission of the project is to develop and refine curriculum that engages students with a study of the environmental and human landscape of their cities and regions.
- Kicking off our school year, all New Roots students participate in a course called *A Sense of Place*, investigating the relationship between people and the natural environment in our region through the lens of Education for Sustainability (EfS) standards

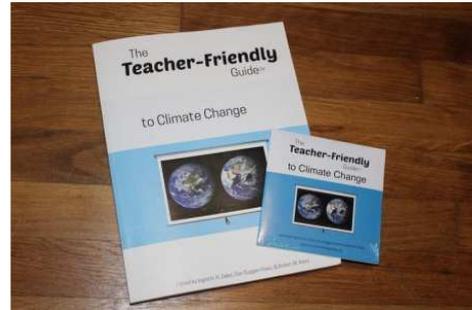


### **Paleontological Research Institution, Museum of the Earth, and Cayuga Nature Center**

- We entered the second year of our crowdfunding campaign to raise money to send *The Teacher-Friendly Guide to Climate Change* to teachers across country. The campaign is online at <http://bit.ly/TeachClimateScience> . We ended 2018 having raised \$124,564, which will allow us to send the book to more than 50,000 teachers. To date we have sent books to science teachers in every public high school in 14 states, and to some teachers in 30 other states. Our new fundraising goal to reach \$200,000.
- We are curating the New York Climate Change Science Clearinghouse and Resilient MA: Climate Change Clearinghouse for the Commonwealth of Massachusetts. These sites are intended to

help New York and Massachusetts local governments, businesses, and residents find reliable climate data and maps, decision-support tools, documents, and other resources to help adapt to climate change.

- We conducted sessions on climate change education at national and regional conferences such as annual conferences of the Geological Society of America and the Science Teachers Association of New York State. We also conducted teacher professional development workshops on climate and energy literacy.
- We continue to develop and run climate change education programs for children, teens, and adults at the Cayuga Nature Center and the Museum of the Earth. These programs include summer camp activities, guided phenology walks, an Ask-a-Scientist table about hurricanes and climate change, and demonstrations of climate and weather concepts using a Weather-in-a-Tank apparatus. We supported the Civic Ensemble in their development of a play about climate change.



### Park Foundation

- The Environment Program made 37 grants that had a climate and energy focus totaling \$1,577,000.
- The Sustainable Ithaca Ithacan Program made \$178,000 in climate-related grants in 2018.
- The Foundation filed five shareholder resolutions seeking reports on fugitive methane emissions and carbon asset risk from ExxonMobil, Chevron, Dominion, Anadarko, and Entergy.

### Renovus Solar

- Constructed and/or interconnected a record five solar farms in 2018.
- Built, filled, and interconnected the first-ever community owned solar farm in National Grid territory, marking a focused expansion into the CNY market.
- Expanded commercial community solar operations, signing up a record number of businesses for off-site solar installations.
  - Several entrepreneurial and sustainably focused real estate developers have invested in off-site solar to power their new projects. These properties include McGuire Development's Harold Square, Steve Flash's 323 Taughannock blvd, and PPM Homes' Ithaca Terraces. These off-site projects have the aggregate effect of transitioning nearly 100 units to solar power.
- Launched the "Solar Guide Series," a comprehensive set of eBooks and digital content aimed at educating consumers about how to best utilize and access solar power. The Guide Series eBooks; launched in March, have been downloaded more than 3500 times since their creation.
- Formalized a referral marketing partnership with Alternatives Federal Credit Union and Alternatives Impact where Renovus will donate \$500 towards Alternatives Impact for every referral project signed and financed.
- Ended the year with a development pipeline containing more than 6.5MW of community solar projects for construction within the next two years.



### Snug Planet

- In 2018, Snug Planet increased our volume of energy efficiency and electrification work by about 30% relative to 2017, performing over 200 home energy assessment and 80 retrofits.
- In order to scale up our operations, we added a full-time HVAC crew, a third full-time building analyst, and a full-time office manager.



- We also expanded our service area to include several major population centers, including Elmira, Corning, and Syracuse.
- Snug Planet has also increased free and reduced cost offerings for income-qualified customers through the EmPower New York and Assisted Home Performance programs.

## Sustainable Tompkins



### *Finger Lakes Climate Fund*

- We reached several milestones in 2018 with our Finger Lakes Climate Fund. Carbon offsets and donations totaled \$13,204 from 104 gifts, and we passed the six million pounds of CO2 offset mark in December. We gave away more grants this year than ever before: 8 grants totaling \$11,373 were given to families in Cayuga, Chemung, Cortland, and Tompkins Counties that collectively offset 495 tons of

CO2 emissions. One grant was for heat pumps and solar panels allowing a low-income woman to create a zero-carbon home. We have now helped families in 6 counties in the Finger Lakes with our 30 grants worth \$49, 343 that offset 2350 tons of CO2.

- We also developed a new partnership for 2019 with HeatSmart Tompkins to combine new incentives for heat pumps with carbon offset grants to reach more rural low-income families with high propane or fuel oil bills.

### *Youth Climate Challenge*

- We were delighted to launch the Youth Climate Challenge in 2018 thanks to a starter gift of \$5000 by local pediatrician Tim Harris. We developed the program as a combination of climate change guest lectures by Dr. Harris and the opportunity to apply for grants up to \$1,000 for student projects related to climate change. Dr. Harris made four presentations at local schools.
- Only two grants have been awarded thus far, but one is a very significant project called 'Keep It Cool Tompkins' that is educating the local business community about the upcoming switch to more climate-friendly refrigerants. We are proud of this project as it is the first time any of us in the local climate movement considered the issue of refrigerants as part of the local energy road map.

## Taitem Engineering

- With STREAM Collaborative and city and town employees, the Ithaca Green Building Policy was finalized and adopted. It will be fully implemented in 2019.
- Taitem has been working with Tompkins County providing technical assistance to commercial and multifamily new construction and renovation projects through the Business Energy Advisors (BEA) program. Projects such as Greenstar's new store, Vecino's ArtHaus, and Emmy's Organics have benefited from energy efficiency recommendations.
- The Southern Tier Clean Energy Communities coordinators of Cornell Cooperative Extension of Tompkins County engaged Taitem to provide municipal energy audit services in a unique and efficient operational model. After training by Taitem, the CEC coordinators in the field now complete building walkthroughs, collect data, and deliver it to energy analysts at Taitem who interpret and develop recommendation. Taitem's report is delivered by a CEC coordinator who can then assist municipalities in developing energy reduction implementation plans and finding funding.
- Taitem's Energy + Sustainability and Quality Assurance departments continue to provide a broad range of services under statewide contracts with New York State Energy Research and Development Authority (NYSERDA). These include:
  - Quality Assurance contractors for the Multifamily Buildings division,



- Technical review and inspections of Ground Source Heat Pump applications to NYSERDA,
- Technical assistance for two new initiatives under NYSERDA's Innovative Energy Efficiency and Clean Energy Market Development Programs:
  - 1) Code Enablement, supporting a pathway to significantly increase net-zero energy construction in commercial, multifamily, and single-family buildings
  - 2) Net-Zero Energy Design and Construction, supporting program development and helping to create tools and resources that will help the market meet advanced clean energy and net-zero energy performance standards.
- Energy audits for small businesses and not-for-profits through a new NYSERDA program. Taitem is part of a team that will be offering statewide services in conjunction with Community Energy Advisors, such as our own CCETC. This new program will enroll businesses and not-for-profits with up to 100 employees.
- **Flexible Technical Assistance (FlexTech)**. Typical FlexTech projects are for large commercial customers considering capital improvements to increase their facilities' efficiency and mitigate their carbon footprint. Two significant FlexTech projects completed in 2018 are onsite energy management consultancies at Gutchess Lumber in Cortland and Corning, Inc.'s Horseheads plant.
- **Energy consulting for new buildings**, including building energy modeling, through NYSERDA's New Construction Program. Local projects include City Centre, Harold's Square, and TCAction's Amici House.
- **RetrofitNY demonstration project**. Taitem is part of a team that was chosen by NYSERDA as a collaborative effort to design and implement a deep energy retrofit project at a CNY apartment complex. The team will be presenting at the New York Green Building Conference April 17-18, 2019.
- Taitem completed an Air-Source heat Pump (ASHP) Market Research Study for a global HVAC manufacturer. Ian Shapiro and team looked into replacing less energy-efficient units with small packaged ASHPs to replace PTACs and at integrating controls to improve performance.
- After much deliberation and consideration of alternatives, Taitem decided to close its solar installation division. Since its founding in 1989, Taitem's core competency has been consulting engineering. This decision reflects a renewed commitment to Taitem's energy and sustainability consulting and design engineering services, while retaining the ability to contribute to the solar industry from an engineering and quality control side.
- Late in 2018, HeatSmart Tompkins, Taitem, and the Building Performance Contractors Association were awarded a contract to provide **workforce development training** in the ASHP regional market in 2019-2020.
- Taitem continues its consulting role in NYSEG's Energy Smart Community, currently focused on developing a proposed Smart Home Rate for EV drivers charging at home.

### Tier Energy Network

We are a large group of professionals from the education, municipal, energy, business, and other sectors.



The mission is to use clean energy technology as a driver for economic and workforce development. The organization is an all-volunteer organization that is driving the effort to make the Southern Tier of New York the center for a Clean Energy Business Cluster. The Tier Energy Network (TEN) is a model cluster. From that model other clusters will be developed around Advanced Manufacturing, Agriculture, Tourism, and other sectors. TEN has members and participants from across New York State. We are involved in many clean energy initiatives. Here are some of TEN's accomplishments:

- Organized 10 forums on smart energy projects and programs in the Southern Tier.
- Developed white papers on smart energy for the Regional Economic Development Council.
- Maintained an inventory of smart energy projects, companies, and subject matter experts.
- Convened monthly meetings featuring presentations by clean energy experts and startup business owners.
- Provided on-going support and mentoring to the 76 West business competitions.

- Worked with large end users to develop projects.
- Provided technical and market analysis support to start up and companies with energy projects.
- Attracted members impactful to the future of the region's energy and economic needs.
- Provided support with CPACE adoption in Broome and Tompkins Counties.
- Helped advance the NYS Clean Energy Communities program throughout the Southern Tier.
- Acted as Advisory Board for RenewableNY and Cornell Cooperative Extension of Tompkins County
- Collaborated to create a regional Smart Energy Industry Cluster.
- Assisted with multiple counties' Solarize Campaigns across the Southern Tier.
- TEN is continuing its efforts to expand and has recently been certified as a New York State Not For Profit organization and we are waiting for the approval of a recently submitted application to the IRS for 501(c)(3) tax exemption.
- TEN has also applied for \$1.1 M in funding to continue its work with a more powerful and clean energy focused impact to help businesses and the workforce to develop, grow, and thrive.

### **Tompkins Community Action**

Tompkins Community Action, Inc. has been the designated U.S. Department of Energy/NYS Homes and Community Renewal Weatherization Assistance Program (WAP) provider for the County of Tompkins for



thirty-six years. Working closely with the New York State Energy Research and Development Agency (NYSERDA) as a Home Performance with Energy Star contractor, we provide Assisted Home Performance and EmPower NY Programs. As a Building Performance Institute (BPI) Goldstar Contractor, members of TCAction's Energy Services Department hold multiple BPI Certifications including Auditor, Heating Professional, Envelope Professional, Manufactured Home Professional, Building Analyst and Quality Control Inspector. We

partner with numerous municipal entities, not for profits and private sector organizations to leverage funding associated with weatherization, energy efficiency and other types of home repair and housing rehabilitation programs.

- Completed 35 energy efficiency upgrades to housing units with income eligible households under the Weatherization Assistance Program.
- Provided 29 free energy audits /electric reduction/energy efficiency upgrades to households with low incomes as a designated NYSEERDA EmPower NY Contractor.
- Provided 35 emergency cooling services under the Department of Social Services Emergency Cooling Program.
- Provided 31 emergency heating services under the Department of Social Services Emergency Heating Program.
- Facilitated radio spots and news articles in support of National Weatherization Day 2018.
  - Participated in diverse local forums, presentations and conferences to inform the Tompkins County community about the benefits of weatherization (for housing units, families and the environment).
- Participated in diverse community-wide agencies and their standing committees to address issues associated with climate protection.

### **Tompkins County**

- **NYSERDA Clean Energy Community** – Executed contract for grant award to fund the Business Energy Advisors Program (previously referred to as Business Energy Navigator) staff person and electric vehicle purchases and green fleet analysis for County fleet. Work began as described below.
- **DEC Climate Smart Community Certification** – Became the fourth community in New York to achieve Climate Smart Community Silver Level, the highest level currently available. This designation recognizes the County's accomplishments in the reduction of greenhouse gas

emissions and adaptation to a changing climate while also positioning it well for pursuit of future Climate Smart Communities grant awards.

- **Business Energy Advisors Program** – Hired staff person and launched program to assist businesses/organizations in making energy decisions for new construction, renovations, and expansion projects. Hosted a Commercial Energy Workshop to officially introduce the program to the community. By the end of 2018, seven businesses had participated and provided positive reviews to the program. Participating sectors included manufacturing, retail, multi-family, and non-profit organizations.
- **Wind study** – Completed Small to Medium Scale Wind Feasibility Report, which concluded that with current electricity prices wind turbine installation at three sample sites does not make economic sense.
- **Energy Task Force** – In its second year, the Energy Task Force continued to provide advice to the Department of Planning and Sustainability and the County Legislature on energy, climate change, and energy-related economic development, and provided feedback on Energy Strategy development.
- **Energy Strategy** – Continued work on the Energy Strategy: Second Report based on conclusions and recommendations from the Energy Roadmap and the Energy and Economic Development Task Force.
- **Resiliency and Disaster Recovery Plan** – Received an award notification from the NYS Department of State for funds to develop a plan to prepare the community to take the actions necessary, including those that build economic resilience, to bounce back from a disaster should it occur. This plan will also incorporate a FEMA-sponsored update of the Multi-Jurisdictional Hazard Mitigation Plan.



- **Energize NY Finance** – The County Legislature adopted PACE 2.0 legislation that expands the usefulness of the program to help commercial properties make energy efficiency and renewable energy upgrades to buildings by offering access to low-cost, long-term financing.
- **Electric Vehicle Deployment Community** – Served as local liaison for NYSERDA grant-recipient, Energetics Inc., to install EV charging stations to establish a comprehensive charging network for all EV drivers, and conduct extensive community engagement to inform and educate residents and businesses about the benefits of EVs. Charging station deployment took place in 2017, the promotional component of the project occurred in 2018. The work of EVTompkins has transitioned and this initiative has now been assumed by Cooperative Extension through Get Your Greenback.
- **County Facility Energy and Fleet Record Management** – Enhanced recordkeeping and record sharing among County personnel for critical facility energy use and fleet data.
- **County Government Electric Vehicle Fleet** – In 2018, the County Health Department purchased three Chevy Volts and two Nissan Leafs and also installed an extensive charging station at the Brown Road Health Department location. Additional initiatives are underway, in part funded through a portion of the County's Clean Energy Community grant award from NYSERDA, to assist in transitioning aspects of the County Fleet to EVs with guidance from Energetics, Inc.

### Tompkins County Chamber of Commerce

- Chamber President Jennifer Tavares continued to serve on the County's Energy Task Force and Electric Vehicle Steering Committee, and Dominick Recckio, Director of Strategic Communications & Partnerships, is engaged with the Ithaca 2030 District Partners.
- The 2018 building performance report from the Ithaca 2030 District, which tracks energy and water consumption, showed that the Chamber's office has already met the 2020 energy and water use targets.
- The Chamber continues to share important information with our members regarding ways to reduce their energy consumption, finance upgrades to their HVAC equipment, or construct their projects using cleaner/alternative energy supplies. We are a member of Chambers for Innovation & Clean Energy (CICE).
- The Chamber has advised, promoted, and made referrals to the Business Energy Advisors Program, a collaboration of the Tompkins County Planning Department and Tompkins County Area Development.
- Tavares, in her role on the Industrial Development Agency Board, has participated in the development of new policies advancing the installation of commercial grade solar in Tompkins County, and voted to approve two major projects during 2018. The IDA also has enhanced incentives available to support projects which are meeting energy efficiency requirements.



### Tompkins County Climate Protection Initiative



- The Ithaca 2030 District is now the flagship program of TCCPI. Fifty percent of the coordinator's hours have been committed to this project. The 2030 District is vital to achieving two important strategic goals for TCCPI: 1) strengthening the involvement of the business community; and 2) establishing a process for collecting building performance data in downtown Ithaca and benchmarking it against both national and local baselines. For more details, see the Ithaca 2030 District report above.
- The TCCPI monthly general meetings continued to be very well attended, with an average of 25 participants. That the meetings continue to attract a sizeable number of community leaders after eight years, together with the high number of requests made to present at the meetings (at least two-thirds of the agenda topics come about this way) and the fact that the agendas for the meetings are usually set several months in advance, suggest interest in TCCPI remains strong.
- Topics in 2018 included:
  - **The Green Building Policy Project** – Nick Goldsmith, Sustainability Coordinator for the City and Town of Ithaca
  - **The View from Bonn, Germany: Cornell Attends COP 23** – Emma Bankier, Research Assistant at the Cornell Institute for Climate Smart Solutions, and Allison Chatrchyan, Director of the Institute
  - **Climate Leadership and Emerging Research Priorities in Building Science** – Ian Shapiro, Founder and Chairman of Taitem Engineering
  - **NYSERDA's New Initiative on Net Zero Modular Homes** – John Scicchitano, Director of Philanthropic Partnerships at NYSERDA, and Alison Donovan, Senior Consultant at the Vermont Energy Investment Corporation
  - **Earth Source Heat at Cornell** – Rick Burgess, Vice President for Facilities and Campus Services; Jeff Tester, Professor of Chemical and Biomolecular Engineering; and Joel Malina, Vice President for University Relations

- **The Tompkins County Electric Vehicle Campaign** – Bryan Roy, Principal Engineer & Commercial Sector Team Lead for Sustainable Transportation Solutions at Energetics Inc
  - **The Teacher-Friendly Guide to Climate Change** – Alexandra Moore, Co-Author and Senior Science Educator, PRI/Museum of the Earth
  - **Mid-Scale Wind Development in Tompkins County** – Gentry Rouse, Business Development Manager of Northern Power Systems
  - **The U.N. Talanoa Dialogue** -- Allison Morrill Chatrchyan, Director of the Cornell Institute for Climate Smart Solutions
  - **Repowering Cayuga Power Plant** – Irene Weiser, Co-Founder of Fossil Free Tompkins and Caroline Town Board Member
  - **Tompkins County Business Energy Advisors Program** – Andrea Aguirre, Senior Planner and Energy Specialist in the Tompkins County Department of Planning and Sustainability
  - **Keep It Cool Tompkins: Converting to Climate-Friendly Refrigerants** – Tilden Chao and Abigail Glickman, Ithaca High School students and winners of the Sustainable Tompkins' Youth Climate Challenge grant
- The [TCCPI Newsletter](#), which comes out every two months, had a subscriber base of about 430 this past year, with an open rate of 39% for its six issues. In March 2018 this high open rate again earned the TCCPI Newsletter a “Constant Contact All Star Award,” which the company presents to only 10% of its users; it marked the sixth year in a row that our newsletter has been recognized in this way.
  - The TCCPI [website](#), which has become a rich resource on climate change and clean energy issues, was updated on a monthly basis. All of the meeting notes, annual reports, and newsletters can be found archived on the site, dating back to 2009. The website attracted, on average, monthly hits of over 2,700 in 2018.
  - On the social media front, regular postings were made on TCCPI's Facebook page, including articles from the TCCPI Newsletter, and we increased our “likes” from 368 to 382 during the year. In addition, the TCCPI coordinator continued to post information about energy, climate change, and sustainability issues on Twitter, and has nearly 2,600 followers.
  - The TCCPI coordinator served on the steering committee of Get Your GreenBack and regularly attended its meetings this past year, providing input on GYGB's strategies, priorities, and assessment of the program and serving in rotation as meeting facilitator. Articles on GYGB appeared in each issue of the TCCPI Newsletter.
  - The coordinator was also a member of the Tompkins County EV Campaign Steering Committee and the Ithaca Green Building Policy Advisory Committee.
  - In addition, he served on the boards of the New Roots Charter School, Groundswell Center for Local Food and Farming, PRI/Museum of the Earth/Cayuga Nature Center, and EcoVillage at Ithaca, Inc.

### Tompkins County Council of Governments

- TCCOG, with Liz Thomas as Chair of the Energy Task Force, worked to promote information sharing amongst municipalities and CCE to explore options for converting streetlights to LEDs. The City of Ithaca, led by Mike Thorne, was especially helpful as the lead in reaching out to LightSmart Energy Consultants for information and exploring negotiation on SL Purchase Pricing with NYSEG.
  - George Woodbury of LightSmart Energy Consultants gave a presentation for us at the Borg-Warner Room of the library, Casey Maestro of NYPA attended a TCCOG meeting to discuss the New York Power Authority program for SL conversion, and Terry Carroll of CCE provided updates and information to TCCOG.
  - It was year of patient and productive work. We now have better information and guidance that will facilitate



Tompkins County municipalities moving forward with LED SL conversion in 2019 to achieve this Shared Services goal.

### **Tompkins County Environmental Management Council**

- The Climate Adaptation Committee performed a case study of flood professionals actively engaged in flood risk mitigation within Tompkins County, NY, a community dealing with moderate flooding, to gauge how much variance exists among professional perceptions of local flooding risk. Results of this case study indicated disagreement among flooding professionals as to which socio-economic losses constitute a flood, disagreement on anticipated community needs, and some disagreement on community perceptions on climate adaptation.
- In aggregate, however, the knowledge base of the Tompkins County flood practitioners provided a well-defined picture of community vulnerability and perceptions. Encouraging interdisciplinary flood mitigation work could reduce risk, and potentially better support climate adaptation within flood risk mitigation. We concluded with several recommendations that would move Tompkins County towards establishing a method of collecting and archiving hydrologically important information on flooding events, as well as encouraging interdisciplinary work between flooding professionals.
- The Environmental Review Committee submitted a scoping comment to C & S Companies of Syracuse on the City of Ithaca's ground-mounted solar array project near the airport.
- Provided public hearing testimony in support of NYSDEC's proposal to strengthen the CO<sub>2</sub> Emissions Performance Standards regulations
- Voted to approve Resolution 01-2018 to Support a Statewide Ban on Single-Use Plastic Bags and voted to recommend that the Tompkins County Legislature pass a similar resolution.
- Held a community discussion on "Preserving Our Unique Natural Areas in a Changing Climate."
- Presentations at the monthly EMC meetings included an update on Ithaca CarShare and BikeWalk Tompkins, Cornell's proposed Earth Source Heat Project, Tompkins County Recycling and Materials Management and the Finger Lakes ReUse Center, New York State Energy Transformation, 1990-2050, and EV Tompkins and the Campaign to Encourage Electric Vehicles



### **Tompkins County Industrial Development Authority**

- The Tompkins County Industrial Development Agency continues to lead the state in promoting off-site community solar development. In just two years, 12 projects have been approved that will generate approximately 48 megawatts of solar power, enough to power nearly a quarter of the homes in Tompkins County. These projects represent over \$94 million in private investment and will pay over \$9 million in property taxes over 20 years.
- The IDA also works directly with applicants to improve energy usage and reduce reliance on fossil fuels, providing enhanced incentives to encourage applicants to reduce their overall project carbon emissions footprint. In 2018, the IDA delivered an incentive package valued at \$600,000 for the construction of a three story, 16-unit live, work housing project at 323 Taughannock Boulevard on the Cayuga Inlet. The project received an enhanced incentive based on the highly efficient and energy saving measures incorporated in the construction.
- The Business Energy Advisors Program was a recommendation of the Energy and Economic Development Task Force. TCAD, in part, funds the program and assisted with program design and implementation. The BEA program was launched to assist developers in assessing renewable energy and energy improvements for commercial and industrial buildings.
- Its goal is to reduce greenhouse gas emissions from the commercial sector. BEA assists businesses in setting energy goals and understanding energy options during the earliest stages of project design and conceptualization. During 2018, BEA hired a staff person and launched the

program BEA hosted a Commercial Energy Workshop to officially introduce the program to the community. By the end of 2018, seven businesses had participated and provided positive reviews to the program. Participating sectors included manufacturing, retail, multi-family, and non-profit organizations.

### Town of Caroline

- The Town of Caroline completed the revision of Subdivision and Site Plan Review Laws in 2018.



The new local laws highlight New York State (SEQRA) and Tompkins County's 239 Review Guidelines, especially regarding the new 239 Addendum focused on minimizing greenhouse gas emissions. We also clarified the review process for developers.

- Caroline received a \$100,000 Clean Energy Communities grant for its project, "Brighten-up Caroline." One part of this initiative will convert the town's streetlights from sodium-

vapor lights to LEDs. This will reduce energy consumption by about 75% and save taxpayer dollars. The other part of our initiative will be a focused door-to-door effort in fall 2019 to distribute LED bulbs to each residence in Caroline, engage with residents to understand barriers to making home energy improvements, and provide information and support to move forward with those cost- and energy-saving initiatives. With part of savings from the Streetlight conversion we have proposed to establish a "Revolving Green Loan Fund" to support home energy improvements by residents.

- Key players from the Town's energy committee (Energy Independent Caroline) continue work on Solar Tompkins HeatSmart Program, promoting home energy efficiency and heat pumps for space heating and cooling. In 2018 NYSERDA adopted the HeatSmart model in its Clean Heating and Cooling Communities Program. Including HeatSmart Tompkins, there are now eight HeatSmart programs in New York State. Solar Tompkins received a NYSERDA award under this program to continue HeatSmart Tompkins for another two years.
- Caroline received a grant from the New York State Office of Court Administration for heat pumps at the Historic Town Hall/Caroline Court. We have decided that geothermal heating & cooling would be a good solution for the building and will be installing that in 2019.
- Caroline received a grant from Tompkins County Soil & Water Conservation District to design and implement a bioretention feature at the town hall grounds to treat stormwater runoff from the main parking lot. The engineering plans have been completed and the bioretention feature, as well as parking improvements for TCAT Park-N-Ride parking, will be completed in 2019. This will include paved parking for the Town's new electric vehicle parking station funded in 2017 by NYSERDA. This town hall improvement will promote use of public transportation, the electric vehicle transition, and effective management of stormwater runoff.

### Town of Dryden

The Town of Dryden is committed to reducing GHG emissions and has made great progress over the past year in several key areas:

- The Town has approved the development of over 30 MW of community solar and worked closely with developers to ensure that the environmental and visual impacts were minimized. The Town succeeded in negotiating a special electricity rate for town residents, 10% below market rates, to encourage participation. The Town also negotiated favorable PILOT terms for the new solar farms (estimated value: \$50 million) that will reduce the burden of property taxes for town residents over the next 20 years.
- The Town has encouraged new commercial housing



developments to avoid natural gas use. The last four multi-unit projects approved by the town -- one currently occupied, two under construction, and one soon to break ground -- will operate “gas free”. These developments include nearly 100 housing units. A proposed 200 unit/550 bed project currently under review will be “gas free,” if approved by the town.

- Dryden was recently recognized as Clean Energy Community with a \$5,000 grant from NYSERDA. The recognition was based on four high impact energy saving actions:
  - Benchmarking municipal building energy use
  - Participating in a Town-wide solarize program
  - Adopting the consolidated NYS Solar application to streamline the approvals process for solar projects
  - Completing Clean Energy Community training for Code Enforcement Officers
  - Established a Climate Smart Community Task Force which is working on bronze level certification

*Works in Progress:*

- Seeking NYSERDA grant funding for Electric Vehicle charging stations.
- Converting 94 town street lights to LED.
- Completing installation of LED interior lights to replace incandescent lighting in municipal buildings.
- Dryden Rail Trail, an 11 mile pedestrian trail is under development that will provide non-motorized options for commuters and recreation opportunities for the general public. The trail will connect the villages of Dryden and Freeville, as well as the hamlets Etna and Varna, to Ithaca and Cornell.

**Town of Ithaca**

***Secured \$70,000 in grant funding, managed existing grants***

- Completed grant summary that shows shared Sustainability Planner has secured and/or managed 13 grants with a total value over \$675,000 over 7 years.
- Awarded \$50,000 grant for Town under NYSERDA Clean Energy Communities program.
- Awarded \$20,000 of NYSERDA funding via Energetics, Inc., for incorporating electric vehicles into Town and City of Ithaca fleets.
- Administered two existing grants (Park Foundation, Funders’ Network for Smart Growth and Livable Communities).



***Achieved Clean Energy Communities designation from NYSERDA***

- Worked across departments to coordinate completion of four “high impact actions” to achieve designation.
- \$50,000 grant award from designation will be used for purchasing electric vehicle and charger for Town fleet and for achieving Green Building Policy standard with the Public Works office addition.

***Completed Green Building Policy report and began drafting code language***

- Worked with joint Town/City steering committee, consultants, and community advisory committee to draft GBP report and code language.
- Town and City unanimously approved the Green Building Policy report, which provides recommendations for requirements and incentives to substantially reduce carbon emissions in all new buildings, while emphasizing and supporting affordability.
- Performed extensive outreach and education.
- Planned for Phase Two - drafting legislation: Defined scope of work and process; set budget and acquired funding; contracted with consultant team.

***Leveraged Town funding through internship program***

- Hired four interns between Town and City; two used Federal Work Study funding.
- Coordinated with organizations at Cornell to increase the racial diversity of applicants.

***Analyzed potential LED streetlight upgrade***

- Provided research and analysis to evaluate feasibility.

- Represented Town in Tompkins Streetlight Collaborative.
- Retrofits would annually save about \$40,000 and reduce GHG emissions by 50%-60%.

**Published *Ithaca Sustainability Newsletter***

- Engages local, regional and national community with local news and events.
- Over 615 newsletter subscribers. Facebook page now has over 575 likes.



**Developed and *strengthened relationships* with regional, and national partners**

- Urban Sustainability Directors Network: Sat on selection committee for the Equity Diversity Inclusion Fellows program
- Northeast Energy Efficiency Partnerships: Participated in task force to guide the creation of the Community Action Planning for Energy Efficiency tool
- EcoVillage at Ithaca: Helped develop *Asking the Right Questions* workshop on green building for municipal boards and staff
- Also: NYC Department of Buildings; Energize NY; Northeast; New Buildings Institute

**Supported local initiatives through participation and promotion**

- EV Tompkins; Tompkins County Energy Task Force; Ithaca 2030 District; Tompkins County Climate Protection Initiative; Sustainability Center; Energy Smart Community

**Town of Ulysses**

- Town of Ulysses was awarded as a certified bronze Climate Smart Community for its efforts.
- The Town of Ulysses continues to provide free electricity for its electric vehicle charging station at the Town Hall.
- The Town is in the midst of the design phase to install heat pumps in Town Hall in order to reduce use of natural gas (part of a Clean Energy Communities grant).
- The Town Hall lights will be converted to LED bulbs (part of a Clean Energy Communities grant).
- The Town purchased a hybrid vehicle for the Code Enforcement Officers.
- The Town Supervisor led a county-wide effort to convert streetlights to low power LED bulbs.
- The Town continues to pay for half the cost of a bus pass for employees.
- The zoning for large-scale solar is being updated to include glare study analysis as part of the site plan review.
- The Ulysses zoning is being updated, adhering to nodal development concepts.
- Email news is sent to residents by monthly often including tips on energy saving measures. The list includes 942 emails in a town with a population of ~5,000. Good coverage.
- The Town continues to recycle and has a composter outside of Town Hall, all in an effort to reduce the need to transport waste.
- Ulysses and Trumansburg worked together to install new sidewalks in and around Trumansburg to encourage a more walkable community.
- Activities not reported on in the past years:
  - Ulysses adopted a solar local law to allow large-scale solar (2015).
  - Buildings have been benchmarked.
  - The Code Enforcement Officer has been trained on green building techniques.
  - Ulysses became a Clean Energy Community (2017).
  - Ulysses adopted the Unified Solar Permit.



- 2017 Ulysses, Cornell and other partners launched the IthacaTrails.org website. This visual layering of trails “owned” by many different entities enables pedestrian commuters to see footpaths and bikepaths throughout the county to encourage less vehicle travel.
- Part of recent *Solarize* and *Heat Smart* programs in the County.
- The Town Supervisor has been involved in discussions of Community Choice Aggregation (currently reactivating after a pause in activity).
- Solar panels were installed on Town Hall and the Town Barn in 2012
- Ulysses worked with the Towns of Ithaca and Dryden to be the first to ban hydrofracking in the state.
- Ulysses led the Tompkins County Council of Government's Energy Roadmap Task Force.

### **Weaver Wind Energy**

- WWE commissioned and successfully field-tested the first wind + solar + storage hybrid system—the WE2—at its Van Etten wind lab.
- WWE installed a demonstration WE2 system at our main office in Freeville.
- Company president Art Weaver gave presentations to Cornell's Engineers for a Sustainable World and the Wind Farm Community Research Program.
- Art was invited to be a board member on the Renewable Energy Advisory Board for Morrisville State College.
- At the Summit in the Valley in Naples, NY, Marketing Director Elliott Ryan gave a presentation on integrating wind and solar with energy storage for a clean energy solution.
- WWE hosted an EV Tompkins Workplace Charging Open House for community and business leaders.
- All WWE employees drive all-electric vehicles and several employees participated in both EV Tompkins and National Drive Electric Week events in Ithaca, including the first-time appearance of electric vehicles in the Ithaca Festival Parade.

