



Tompkins County Climate Protection Initiative

2016 TCCPI MEMBER ACCOMPLISHMENTS

Alternatives Federal Credit Union

- Joined as founding member of Ithaca 2030 District
- Made 53 loans for solar energy installation totaling more than \$700,000
- Participating in discussions with community partners regarding feasibility of purchasing cooperative for solar energy
- Continuing to incorporate energy efficiency and waste reduction practices in daily operations.
- Work with stakeholders such as NYS Green Bank and Public Service Commission to make financing strategies involving clean energy accessible to low income target populations

Cayuga Medical Center

- Received "Healthcare" LEED certification for our new Surgical Services renovations
- Received LEED certification for the newly constructed Cayuga Birthplace
- Completed the Chilled Water Winter Loop project, which has had a significant impact on winter cooling needs and water consumption reduction from dietary coolers. Last quarterly water invoice was 1,812,800 gallons of water less than the prior year or 604,266 gallons per month. Anticipate an annual reduction of 7,251,200 gallons of water not received from Bolton Point.
- Working on exploring energy projects that will improve the Hospital Energy Star Rating & Efficiency.

City of Ithaca

Secured over \$150,000 in grant funding

- Awarded \$103,940 by Partners for Places for the Green Building Policy project (see below); half from national consortium of foundations, half from Park Foundation
- Awarded \$47,732 by Park Foundation for shared Sustainability Planner position
- Administered two existing grants (NYSERDA and Park)

Kicked off Green Building Policy project

- Will involve a comprehensive study of policy tools that the Town & City of Ithaca can use to incentivize or mandate green building standards for new construction
- Main deliverables include green building policy study, development forecast, and outreach
- Near end of consultant selection process

Completed Residential Energy Score Project

- Led effort to create a voluntary residential energy score program for homes within the five participating municipalities
- Program document endorsed and/or supported by all five municipalities
- NYSERDA now considering regional pilot programs, thanks in part to our efforts
- Program to be implemented as soon as funding allows; currently exploring options for program host and funding



U.S. DEPARTMENT OF ENERGY
Home Energy Score



Assessor

Continued efforts to install large solar array at Tompkins Regional Airport

- Would provide renewable electricity equivalent to about one third of City government electric needs, at a reduced cost, and with significant GHG emissions reductions
- Planning and development efforts are ongoing

Launched **Energize NY financing program**

- Uses innovative Property Assessed Clean Energy (PACE) model to offer long-term low-cost financing for energy efficiency and renewable energy projects in commercially-owned buildings
- Tompkins County and the City of Ithaca were the first two upstate NY communities to offer this program
- Supported analysis of **LED streetlight retrofits** Provided significant research and analysis assistance to Public Works
- Retrofits would annually save \$200,000 and reduce GHG emissions by 50%-60%
- Money secured in 2017 budget to buy back streetlights from NYSEG. Retrofits planned to start in 2018.

Continued publication of **Ithaca Sustainability newsletter**

- Now over 575 subscribers
- Also maintained Facebook page (now nearly 475 likes)
- Readers are not only locals, but also organizations at a regional and national level



Developed and **strengthened relationships** with local, regional, and national organizations

- U.S. Department of Energy
- Pacific Northwest National Laboratories
- Urban Sustainability Directors Network
- Northeast Energy Efficiency Partnerships
- The Funders' Network for Smart Growth and Livable Communities
- NYSERDA
- Various municipal sustainability departments

Climate Changers

- We developed and shared features about the following Climate Changers, among others.
 - Nick Goldsmith, Sustainability Coordinator for the City and Town of Ithaca



- o Jeremy Leggett, Founder of SolarCentury and Chairman of Solar Aid



- o Michael Brune, Executive Director of Sierra Club



- o Karen Washington, Co-Founder of Harlem Community Gardens, Founder of Rise and Root Farm and Black Urban Growers (BUGS)



- o Marcus Franklin, Environment and Climate Justice Program Specialist, NAACP



- o Peggy Liu, Chairperson of JUCCE, Joint US-China Collaboration on Clean Energy



- o Christi Mosch, Operations Manager of QwickSolar



- Led Climate Changer webinar through Green Business Network of Green America

- Presented to:
 - Sustainatopia Conference in Boston and led Climate Changers Workshop
 - B Corp Annual Conference in Philadelphia and led Climate Changers Workshop
 - Wright Water Engineers
 - Rocky Mountain E2
 - EcoSystems
 - Sustainable Colorado
 - Denver Water
 - Boulder County Sustainability Department
 - Dialogue Redux Conference
 - Cornell students at Keeton Hall
- Participated in #NYGIVESDAY campaign
- Attended 'Carbon Risk in Investment for Government and Business' webinar through American Sustainable Business Council
- Attended Energy Conference at Johnson School
- Launched Indiegogo campaign
- Launched a new web site
- Marcus Franklin, Environment and Climate Justice Program Specialist, NAACP joined our Advisory Board.

Climate Justice and Youth Program

2016 was a great year for expanding the conversations around climate change to include equity, racial justice, and social justice. Listed below are ways in which Reed Steberger (assistant coordinator) and Jane Whiting (youth representative) were able to help push those conversations.

New Climate Justice Column in TCCPI Newsletter

- TCCPI announced the Climate Justice Column in the Jan/Feb 2016 issue of the TCCPI newsletter. We had a strong focus on the importance of racial justice in the movements towards sustainability. Topics included:
 - Debunking the idea people of color don't have time for, don't care about, and don't work on climate issues (written by youth fellow Ahja Haedike)
 - Highlighting the racial disparities between efforts to ban fracking in predominantly white rural Upstate NY, and predominantly Latino central California
 - The role mass incarceration and structural racism plays in climate change issues
 - The importance of centering equity, racial justice, and social justice in climate work
- This column helped generate a conversation among climate activists in Ithaca around racial justice and social justice. Our final column of 2016 was cited in the Ithaca Sustainability Newsletter by the sustainability coordinator for the Town and City of Ithaca, Nick Goldsmith. Coming into 2017, opportunities to further these discussions with community members are growing as people reach out to Reed and Jane about the climate justice columns.

Climate Justice Presentation at July 2016 TCCPI meeting

- Reed and Jane gave their first climate justice presentation at TCCPI, where we highlighted the importance of social justice in the environmental movement. We called upon the TCCPI network to address racism head-on in their climate work. This presentation resulted in an invitation to present at Cornell's Presidential Sustainable Campus Committee (PSCC) Leadership Summit.

Presentation at Cornell's Presidential Sustainable Campus Committee: Leadership Summit, Nov.2016

- Reed and Jane began connecting with a student involved ECO (Environmental Collaborative) at Cornell to present the "People" section of Cornell's Quadruple Bottom Line for their Options for a Carbon Neutral Campus Report. The presentation took place just days after Donald Trump was elected president. In our presentation we emphasized the importance of centering equity and people in environmental initiatives. We pointed out that their "People" section needed some revision in respect to that concept and opened a line of discussion for us to recommend adjustments.

The New Jim Crow Community Read

- In collaboration with The Multicultural Resource Center and Ultimate Re-Entry Opportunity a community-wide read of *The New Jim Crow* by Michelle Alexander took place. Every month (beginning in September 2016 going into April 2017) participants in the read could attend a community event related to each chapter in the book. 650 people read the book on their own or with a facilitated book group. Book group facilitators were invited to a training to help them guide conversations about race. This project has created space for conversations about mass incarceration and systemic racism across Ithaca communities.

Planning for an ECO / TCCPI Talking Circle

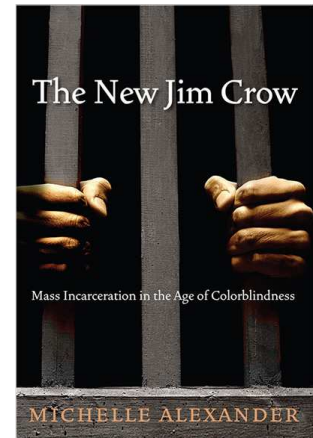
- After making a connection with ECO through our presentation at the PSCC, Reed and Jane continued to develop that relationship by beginning plans for an ECO / TCCPI Talking Circle. We established the fact that there is a demand in both Cornell student populations and the TCCPI network to connect with each other. Talking Circles are a place where participants can analyze structural racism and power dynamics in their personal lives, social environment, and their workplace or organization. The Talking Circle will take place in April 2017.

Collaboration with ECO (Environmental Collaboration) a Cornell student group

- Through the presentation at the PSCC and the development of a Talking Circle, a strong relationship with the Cornell student group was formed that can lead to a greater youth representation at TCCPI and further connection between Cornell and the City.

Youth Organizing Fellowship

- The 2016 pilot year of the TCCPI/MRC Youth Organizing Fellowship successfully developed an important resource and community space for diverse youth in Tompkins County. Fellows, with the guidance of adult staff and community partners, co-created a learning community grounded in a skills-based, experiential racial justice framework of community organizing, political education and cultural intelligence.
- The Youth Organizing Fellowship brought together eleven teens between the ages of 15 and 18, who gathered 161 times between March and December of 2016 for: trainings led by two youth facilitators, Ix Chel Lec Cutter and Emma Dennis, and two adult staff at TCCPI, Reed Steberger and Kristina Sims; meetings and events organized and led by youth fellows and youth facilitators; and collaborations with community leaders from organizations such as the Ithaca Common Council, CULTURA Ithaca, the Tompkins County Workers Center, Northside United, Planned Parenthood of the Southern Finger Lakes, the Youth Farm Project, the Green Resource Hub, the Ultimate ReEntry Opportunity Program, Participatory Budgeting NYC, Participatory Budgeting Buffalo, and Raise the Age New York.
- The 2016 cohort of the Youth Organizing fellowship was a diverse group whose members include youth from a wide range of cultural, racial, and gender identities and sexual orientations.
 - A total of 11 youth between the ages of 15 and 18 participated in the program
 - Fellows attend (or were 2016 graduates from) Ithaca High School, Lehman Alternative Community School, and New Roots Charter School.
 - One fellow left school, but returned to school during the program.
 - 10 fellows are youth of color
 - 10 fellows are low-income or identify as working class
 - 3 fellows are Transgender or Gender Nonconforming
 - 6 fellows identify as LBGQ+
 - 7 fellows are women, 3 fellows are men
 - 3 fellows were born outside of the United States
 - 1 fellow is a wheelchair user



Coalition for Sustainable Economic Development

- CSED's big victory was with respect to advocacy at Cornell's proposed Maplewood grad-student housing development. Early in 2016 our labor members approached the group to inform us that

an \$80+ million development was proposed that could go really well or really badly for the community. Would they pay taxes? Hire local? Use renewable energy? CSED formed 3 committees to tackle these issues. CSED environmental advocates worked tirelessly to educate the Town of Ithaca planning board and developers about efficient electric heat pumps as an alternative to gas heating. CSED member Joseph Wilson took a novel approach in urging the Town to use the SEQRA process to evaluate and mitigate energy impacts. Cornell was also instrumental in that using gas would move them in the wrong direction in meeting their GHG reduction goals. So in the end – big win on heat pumps instead of gas. We have been able to leverage this win in other ways in that we can point to it for other proposed developments too. The City Centre building downtown will now be using heat pumps too. The Maplewood project will also be paying taxes. Unfortunately, they have not hired local labor. Our labor members continue to work on this aspect.

- CSED achieved smaller victories with the City of Ithaca with respect to their Community Investment Incentive Tax Abatement Program (CIITAP). In 2015 we succeeded in getting the City to evaluate and consider changes to their approval process to take into account public benefits such as energy efficiency and renewable energy, diversity hiring practices, and local labor employment. In 2016 they discussed making changes – and developed a diversity hiring policy that will look at this factor and encourage compliance, but no repercussions if not followed. They also discussed but did not develop policies on hiring local labor and on energy efficiency. Instead they are undertaking a study that will soon be underway, to review green building policies and make recommendations to the City.

Cornell University

- \$168,000 was saved in electricity over the holidays
- [Kimball Hall's floors 2 through 5 certified as LEED Gold](#)
- [Boyce Thompson Institute ECI Project Saves \\$80,000 and 113 Tons CO2 Annually](#)
- [Klarman Hall certified as LEED Platinum](#)
- [New video](#) explains how Cornell University is creating and implementing real-world solutions, leading the way toward a sustainable future
- [Barton Lab Geneva ECI Project Saves \\$77,000 and 65 Tons CO2 Annually](#)
- [Panel Outlines Action for Campus Carbon Neutrality by 2035](#)
- On March 2016, Cornell submitted its fifth [AASHE STARS](#) report and reached STARS Gold once again.
- Cornell researchers will use a \$1 million grant from the National Science Foundation to create, test, and optimize new residential electric storage systems.
- President Elizabeth Garrett announced the formation of the Senior Leaders Climate Action Group (SLCAG), to focus on improving current climate trends by advancing public understanding of climate change and spurring innovative, cross-disciplinary solutions on campus and globally.
- #6 in Princeton Review's 2015 Guides to 353 Green Colleges
- Cornell's COP22 delegation includes seven faculty researchers, five students, and two media contacts that were sent to UN Climate Change Conferences
- Sutton Road Solar Farm, a 2-megawatt energy facility that will offset nearly 40 percent of the annual electricity demand at the New York State Agricultural Experiment Station (NYSAES) in Geneva, New York, became fully operational April 13.
- Atkinson Center for a Sustainable Future (ACSF) has given \$1.5 million from its Academic Venture Fund to a record [14 new university projects](#)
- In response to the drought, [Cornell's laboratories have jumped into the water-saving pool](#)



- Cornell is committed to ensuring all students of all areas of study graduate from the University with an understanding of the impacts of climate change and necessary roads to a sustainable future through demonstrated learning and hands-on experiences in the principles of climate systems, science, and solutions. This effort is currently supported by the Senior Leaders Climate Action Group & Presidents' Sustainable Campus Committee. A working group is expected to form soon.
- Continues to ranked in top 40 for the Sierra Club reporting for 2015

Cornell Cooperative Extension – Tompkins County

- Worked with municipalities, especially through the Tompkins County Council of Governments (TCCOG), to identify energy reduction and climate adaptation strategies. Since this work began, CCE has been awarded a NYSERDA subgrant through Central NY Regional Planning Development Board to coordinate Clean Energy Community (CEC) activities, helping municipalities in 5 counties to achieve specific milestones identified in the CEC program to become CEC-certified, which, in addition to the built-in benefits of achieving those goals, allows them to apply for state funding that is available only to CEC-certified communities.
- Ithaca 2030 District:
 - Helped District building owners benchmark their buildings' energy use
 - Worked with other District partners to create resources, including the Small Commercial Toolkit (a guide for commercial building owners on how to benchmark and track their buildings' progress on greenhouse gas reduction goals and use a variety of tools to estimate energy and financial savings and costs) and the 2030 District Financing Guide (a list of incentive programs and financing available to commercial building owners)
- Supported and/or led new Solarize-type campaigns in Schuyler, Steuben and Chemung counties that resulted in more than doubling the amount of installed solar in those counties; worked with various stakeholders in Tompkins County to develop a campaign that is running March–May 2017.
- Finishing up Southern Tier Bulk Wood Pellet Infrastructure Boost Program, a \$1.3M Cleaner Greener Communities (CGC) program that has assisted in the installation of two commercial boilers, a bulk wood pellet load-out at Ehrhart Energy, a regional market analysis study, and continuing work to support and further develop the wood pellet industry to serve the Southern Tier and Finger Lakes regions.
- Worked with Get Your GreenBack to develop and implement a Solarize-type group purchase program for pellet stoves (and boilers) combined with weatherization/energy efficiency upgrades through partnerships with local pellet stove retailers and energy efficiency contractors.
- Contributed to the Tompkins County Energy Roadmap (authored the biomass section and advised on the wind and solar sections). Most of this work was in 2015, with support of the county's roll out of the initial findings taking place in 2016.
- Helped, as part of the advisory team, with the Residential Energy Score Project, which resulted in a recommended, straightforward system for determining a building's energy score, which could easily be compared with other similar building types to incentivize homeowners and landlords to upgrade their properties with respect to energy use.
- Continued to work with Ithaca College staff and students and a large local property management company on a renter education program that gave student participants who went through the program priority access to certain (preferable) apartments; and started to work with Cornell University sustainability staff to expand the program to CU.



- Ran a series of DIY energy efficiency workshops for low and moderate income residents (renters and homeowners) based around home visits where participants were shown simple but effective measures they could take and they were given information about how to access incentives and assistance for larger projects.
- Button-Up Enfield: working with local residents, held a series of workshops focused on energy efficiency based around a Tupperware party model (a host invites neighbors and friends and an expert shows the group what they can do themselves to make their homes more energy efficient and comfortable, the energy audit process, and what can further be achieved by hiring an energy contractor; with the expectation that the participants then each host another gathering with a different group of their neighbors and friends), and continued the transition of the program to be self-sustained through local leadership.
- In collaboration and with support from the Tompkins County Chamber of Commerce, led the production of the Chamber's *Energy Now* quarterly newsletter through 2016.
- Internet of Things: Working with a group of volunteers established "The Things Network," a grassroots initiative supporting the creation of free, community-owned data gathering networks that allow anyone to connect inexpensive wireless sensing devices to the Internet. Among other things it facilitates real time monitoring and logging of temperatures in server rooms, refrigeration units and other high energy users and real time gas, electricity and water usage in commercial buildings. In one application locally its use resulted in 30% reduction in energy usage in a server room, and it is currently being used to test wood smoke pollution monitoring in the city of Ithaca, and to monitor real time electricity usage in commercial buildings in Tompkins County.
 - More than 350 communities worldwide are working on providing this service to their residents, but Ithaca is only the second TTN community (after New York City) to be certified in the United States and one of just 36 certified communities worldwide. A "gateway" with an antenna mounted on the roof of CCE Tompkins offices on Willow Street went live in mid-December and now provides this service to the entire City of Ithaca.
- Ken Schlather, CCETC executive director, represented the Association on the Tompkins County Energy and Economic Development Task Force



Downtown Ithaca Alliance

- Downtown Ithaca's newly built granite fountain, located on Bank Alley on The Commons, is a recirculating fountain that reuses water, an excellent water conservation measure.
- Decorative lighting in Downtown Ithaca is energy efficient. The DIA uses LED lighting to decorate the poles on The Commons during the holiday season.
- New structures such as the Ithaca Marriott, Monks on the Commons, and the Carey Building addition include many green features such as energy efficient windows and lighting. The Hotel Ithaca expansion and the new Tompkins Trust Company building, which are currently under construction, will include similar energy efficient features as well.
- Downtown projects, such as the additional bike racks that are being installed as a result of a grant from a local foundation, will decrease dependency on automobiles and increase walkability and access to public transit.
- Downtown Ithaca continues to be a "walkers' 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 2016. Our Walk Score is just three percentage points shy of Greenwich Village; by contrast, Lansing ranks in at 52, and

Cayuga Heights ranks in at 27. We were also listed as number one on *MSN Real Estate's* "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 work 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, in collaboration with Cornell Cooperative Extension and Ithaca Carshare, is at work implementing a Transportation Demand Management (TDM) plan with the immediate goal of removing up to 400 private vehicles from the city garage system. This will optimize downtown land use and taxpayer revenue by forestalling the construction of a new garage. It will also reduce carbon emissions by millions of pounds and promote health, social engagement, and employee goodwill. NYSERDA grant funds have been 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 an emergency ride home program) to workers and residents in downtown Ithaca.
- The DIA continues to work on a transit corridor plan to improve bus service between downtown Ithaca and the campus communities. 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 by 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.

- 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. Explains Karim Beers, coordinator of the Get Your GreenBack Tompkins campaign, "Making stuff is very energy intensive; it constitutes ten percent of our carbon footprint. Shopping at reuse stores means no additional energy was used." Such stores include Sheldon Hill Vintage & Estate Jewelry, SewGreen, The Vintage Industry, Pastimes, Trader K's, Autumn Leaves Used Books and Home Green Home.
- 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, including Apple Harvest Festival, the Summer Concert Series, Chowder Festival 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 United States.

Environmental Management Council Energy Committee

- Tompkins County completed an Energy Roadmap feasibility study in 2016 that identified the technological capacity of a variety of strategies such as demand management with energy conservation and efficiency as well as the renewable energies of solar, wind, mini-hydro, and biomass were analyzed and demonstrated that local capabilities were capable of reducing our reliance on fossil fuels sufficient to achieve the County’s greenhouse gas emissions reduction goals. Although the wind resource that we have in Tompkins County is less intense than that in other areas of the U.S., using a range of right-sized turbines—small and medium-scale turbines for home, farm, or small business use in areas of lower wind speeds plus larger utility- scale turbines located where wind speeds are highest—could theoretically provide us with 327 percent of our total 2008 electricity demand. Some in the community have expressed concerns with the potential environmental and public health impacts of wind turbines. **The Energy Committee developed a document entitled “Wind Power: Frequently Asked Questions” that draws upon technical reports and up-to-date peer-reviewed articles from the scientific literature.** The EMC supports the deployment of wind turbines in Tompkins County and seeks to inform the public dialog on the benefits as well as the concerns regarding environmental and public health impacts of wind power projects. See EMC Resolution No. 2016-1.
- **In 2015 the EMC had successfully urged the County to adopt a resolution in support of a NYS geothermal energy systems tax credit. Tax credits are an excellent tool because they leverage major investments from homeowners in these technologies and thus are amplified as an investment by market forces.** These technologies reduce total energy demand, benefiting both the electric grid and resident monthly expenses and are widely recognized as a core requirement for successfully achieving the kind of large-scale reductions in greenhouse gas emissions that are needed so urgently. They improve the seasonal balance of the electric demand for a more stable grid, and, due to their extreme efficiency, greatly reduce the total energy demand. Despite a near unanimous approval in both the NYS Senate and Assembly and numerous letters of support from Tompkins County municipalities, in 2016 Governor Cuomo again vetoed the legislation. The Governor has tasked NYSERDA’s Office of Renewable Heating and Cooling to develop a policy to support incentives for the adoption of geothermal energy systems.
- **The Committee participated in the environmental review of Cornell University’s Maplewood Graduate and Professional Student Housing Redevelopment Project. We urged**



the developer, EdR, to build to Passive House standards. Such standards focus on achieving energy efficiency by requiring design elements that lower the energy consumption in day-to-day use. The regulations and standards of building to Passive House are based on insulation values, the use of sunlight, an airtight building envelope, and use of controlled ventilation systems in order to maintain a steady temperature within a home throughout the year. The Passive House standard sets firm maximum numbers in three categories: total heating and cooling demand per square foot; total energy demand (including lighting and appliances) per square foot; and total air leakage. EdR committed to use only electricity as an energy source. **While not adopting Passive House standards for this project, it will obtain Energy Star certification for this Zero Energy Building project with third party testing and inspections. EdR also committed to the purchase of 100% of its electricity from renewable sources.**

- **The Energy Committee continued to meet with commercial developers to encourage their adoption of advanced sustainability measures.** The Committee participated in the development of the Building and Heating with the Climate in Mind presentations which were offered in 10 local venues and which demonstrated such measures can be incorporated into building construction at only a small premium which is recaptured in 5-10 years from reduced operational costs for heating and cooling. **Discussions were planned with Newman Developers on the City Centre project and the Cayuga Medical Associates on their medical office building planned for Community Corners in the Village of Cayuga Heights.**
- **The Committee encouraged solar farm developers to reduce their carbon footprint by avoiding the use of mechanical equipment and herbicides while utilizing sheep for vegetation management.** It reviewed draft local solar zoning ordinances for compliance with best practices. We also participated in planning meetings to assist in the roll out of NYSEG's Community Energy Coordination and Energy Smart Community programs. **The Committee filed comments in the Reforming the Energy Vision Proceedings with the NYS Public Service Commission as well as in the NYSEG Rate Case.** Finally we have urged municipalities to revise their SEQR regulations to obtain more information from applicants on the carbon footprints of their projects. New York State's Full Environmental Assessment Forms request no information in the 23 pages of questions set forth in Parts I and II on the projected greenhouse gas emissions of the proposed project. The NYS SEQR process has failed to keep pace with state energy planning programs such as REV and the Clean Energy Standard that are recommending significant reductions in greenhouse gas emissions. NYS statutory provisions permit local municipalities to adopt more stringent requirements.

Finger Lakes Land Trust



- Protection of the 470-acre Sheffield Farm in Town of Ithaca through the donation of several perpetual conservation easements. This expansive equestrian property includes more than 180 acres of forest and features streams and wetlands that flow into Coy Glen, a county-designated natural area.
- Acquisition of 120 acres bordering Six Mile Creek in the Town of Dryden. Located in close proximity to the Land Trust's Roy H. Park Preserve, this property features more than 10,000 feet of frontage on Six Mile Creek and its tributaries. Funding for the purchase came from private donors as well as grants from Tompkins County and the City of Ithaca.
- Assisted the Town of Ithaca with the acquisition of approximately 60 acres of woodlands and rugged ravines on West Hill, between Bostwick and Culver Roads.

- Completed the addition of 86 acres of fields and forest to Connecticut Hill State Wildlife Management Area, the state's largest.

Finger Lakes ReUse

Finger Lakes ReUse (ReUse) continued to expand its capacity to further its 'net green' impacts¹ in 2016. This was the organization's first full year with two active storefronts, which greatly increased its capacity to keep items out of landfills and to accept increasing donations of materials from the community. The eCenter computer refurbishing program and ReSET job training program moved to new spaces at the newly opened Ithaca ReUse Center. ReUse was honored for its environmental impacts by receiving the 2016 'Environmental Excellence Award' From New York State Department of Environmental Conservation.



ReUse Community Centers (two locations, open daily, accepting donations of materials and retailing them at low prices which in turn support job training and work experience programs and further waste reduction activities)

- The Ithaca ReUse Center, located at 214 Elmira Road, opened in December 2015. This second location more than doubled ReUse's operating space. This facility houses the organization's second storefront, the administrative offices, ReSET job-training classroom, and eCenter computer refurbishing lab.
- The Triphammer ReUse Center had a store reset in 2016, including the removal of a central interior wall, creating a more open retail space and improved layout.
- Shoppers made 86,000 visits to the two ReUse Community Centers in 2016, which earned a combined \$815,463 in register sales.
- Volunteers donated 14,000 hours of labor at our stores, averaging 31 volunteers per month, alongside 24 living-wage permanent employees.
- An estimated 330 tons of materials were diverted from potentially ending up in landfills this year, a new record for ReUse (In 2015 the estimated waste diversion was at roughly 200 tons).

eCenter computer refurbishing program (also providing affordable tech support and repair services)

- 239 computer systems were sold and 97 printers. All of the printers are refurbished and tested by volunteers.
- 19 reduced-priced computer systems were sold through the eCenter's financial assistance program, open to individuals who demonstrate need through participation in an eligible benefits program.
- 23 tons of e-waste was recycled, in the form of computer carcasses, printer ink and toner cartridges, circuit boards, and other metal and plastic components.

ReSET (ReUse Skills and Employment Training) is a no cost job training program involving hands-on learning environments throughout ReUse Center departments for anyone facing barriers to employment

- 24 participants this year in the two curriculum tracks of ReSET Technology and ReSET Retail & Customer Service, with a total of 4,900 hours of job skills training.
- Of 24 total participants, 6 trainees were accepted into paid apprenticeships, a competitive follow-up course that provides more in-depth skills training and work experience.

¹ *There's No Such Thing as a Green Product*, Stanford Social Innovation Review, Spring 2016
https://ssir.org/articles/entry/there_is_no_such_thing_as_a_green_product

- ReSET trainees help increase capacity in the labor-intensive process it takes to divert and reclaim material, while gaining hands-on experience, by refurbishing computer systems for resale at affordable prices.
- Through a Collective Impact grant from the Community Foundation, ReUse is adapting the ReSET program to serve formerly incarcerated participants with a longer, paid program and expanded, formalized supportive services. A pilot version of this program is expected to be launched in 2017.

Fossil Free Tompkins

- After a four-year fight to oppose NYSEG ratepayer funded conversion of Cayuga Power Plant to gas – in Feb 2016 we won (big props to Sierra Club and Earthjustice who joined our fight)! The Public Service Commission agreed with our arguments that it was cheaper and better for the environment to upgrade the transmission lines in Auburn. Our victory was short-lived, however – in May 2016 the obsolete plant was bought by a hedge fund (Blackstone) that promised to continue operating as a coal plant into the foreseeable future.



- Convened a group of Black Oak Wind Farm supporters to develop a grassroots strategy to support the wind farm project in the face of mounting local opposition. Strategies included developing FAQs about wind farm installations that was passed by the Environmental Management Council; several op-eds and letters to the editor, and door-to-door canvassing in Enfield resulting in signatures from over 400 Enfield residents who supported the wind farm and nearly 300 lawn signs displayed.
- Activities opposing the West Dryden Road pipeline increased, including intervening in NYSEG's rate case. During the public hearing at least a dozen FFT members spoke out for alternatives to the pipeline at the Binghamton public hearing, and 3 members traveled to Albany to raise questions/challenges during the legal proceedings on the rate case. In the end, the PSC approved the pipeline w/in the rate case. Fossil Free Tompkins continued to fight for pipeline alternatives via both grassroots and insider strategies, both locally and in Albany including many members providing feedback to the Energy and Economic Development Task Force report, protests and petitions opposing the start of NYSEG's Energy Smart Community project until pipeline alternatives were considered. Finally, meetings with the Public Service Commission chair, members of the Energy and Economic Development Task Force and NYSEG resulted in a reversal in that NYSEG proposed a compressor station alternative to the pipeline. We are awaiting PSC's decision on this alternative.

Get Your GreenBack Tompkins

Energy Advising

- This year we successfully developed all of the elements of a system of energy advising to provide personalized support to local residents who want to take a step to reduce their energy use, a system which is becoming the central focus of our work. In addition, we made significant progress with a number of specific initiatives to promote particular high impact behaviors ("Big Steps") as well as supported other initiatives focused on longer-term policy change.
- **Leads & Reach:** Over the course of the year we were able to engage almost 200 homes with the energy advising program through a variety of methods—Green & Cozy promotion of pellet heat and energy efficiency, volunteer Energy Navigators and the GYGB coordinator's networks. Generating leads, however, may be the easiest part of the equation. As noted above, only a portion of those who express interest end up getting an audit or quote (on a pellet system, e.g.), and of those only a portion actually follows through with the work or contract. The process takes

time, however, and there are still many in the system who have shown interest who may end up following through with a step. One thing we are paying close attention to is the length of time most people take from interest to action, and what works to accelerate that, as well as to remove the obstacles that get in the way of those who fall by the wayside.

- **Impact:** An estimate of the financial and environmental impact just from the eight actions related to Energy Navigator outreach so far shows that over the lifetime of the improvements households will together save \$108,000 and reduce their collective emissions by 359 tons.
- **Visits vs. Remote Support:** While our original proposal spoke of conducting home visits, we quickly shifted to providing support over the phone and via email. This decision was based in great part on the examples of a number of other programs the coordinator had researched (in Boulder, e.g.), who had found the approach to be effective and cost-effective. When we hire an Energy Advisor in 2017, he or she may be able to conduct a limited number of home visits to help people along in their path towards taking action. Determining when it makes sense to deploy this visit will be another object of our learning.
- **Energy Navigators:** This pilot was successful on many fronts. A core 80+-page training manual has been developed along with a framework for a 10-week training and monthly support gatherings. The Navigators gave the training and program the highest ratings and valued its contribution to their own lives and work, and most have asked to continue to be active in the program in 2017. Other organizations such as HeatSmart and CCE-Tompkins-sponsored solar initiatives have asked for Navigator support with their work.
- **Navigators Extend Reach:** One Navigator, a retired Cornell professor, has initiated an educational process focused on University custodians and food service workers. With the support of the GYGB coordinator, he has spoken to over 60 custodians about energy efficiency programs and alternatives to heating with fossil fuels, and now counts on the support of Cornell Human Resources, the local UAW union representing the employees, and Cornell Sustainability to reach over 1,000 other employees in 2017. Other Navigators have reached out to other groups that may not have otherwise been connected to the campaign, including members of a Chinese Christian church.
- **Revenue & Contractor Support:** 10 local contractors have agreed to contribute to GYGB for leads that come out of the campaign's outreach. So far three contractors have donated \$1500 for a handful of leads. Contractors have appreciated the additional support. One local company saw its first customers in a NYSERDA-sponsored program come out of the work GYGB did this year.
- **Financing:** One of the recurrent barriers to taking steps that require significant outlays of funds is financing. GYGB worked with five local banks to create a brochure highlighting the local financing options, and to illustrate that such investments can be revenue neutral when the energy savings can cover loan payments.



Big Steps

- GYGB focused on nine specific behaviors over a two-year period. During this first year, we were able to make significant progress in eight of the nine areas, progress which is summarized in the following table:
- **Sustaining the “Grow Your Own” collaboration:** After another successful collaboration which resulted in over 500 households receiving plant starts over the summer to help them grow some of their own food, along with buckets purchased through a grant received by a GYGB student-intern, GYGB convened a meeting of the collaborating agencies to discuss sustaining this initiative. A new framework for collaboration came out of the meeting in which CCE-Tompkins and the Friendship Donation Network will take the lead on requesting, receiving, and distributing plant starts from area nurseries to low-income families. This shows how Get Your GreenBack has been

able to initiate a new, collaborative effort, and support it until it develops its own legs and continues on its own.

- **CSA continues to spread:** In a similar vein (with GYGB initiating something and then moving to the background once the initiative has its own energy), the CSA on the Cornell campus has continued to spread, with a third drop-off point established at the school of Human Ecology. GYGB proudly had no role in this. GYGB however has been active developing a new CSA guide which will make it easier for customers to identify local fruit and veggie farms that offer a traditional CSA model. The Cayuga Medical Center has agreed to pay for the printing costs, and the GYGB coordinator is hopeful to pilot working with some health care professionals who may want to use CSA as a “prescription” to patients who would benefit from higher vegetable and fruit consumption.
- **“Green & Cozy”:** This series of community presentations, in collaboration with CCE-Tompkins and six local contractors, on the benefits of energy efficiency and pellet heat gave GYGB the opportunity to try out its system of personalized support and tracking, which as noted above, is beginning to show promise, and participants comment is of value to them. The five community presentations, two home visits, and one vendor expo also helped illustrate how challenging it can be for people to come to an informational meeting. The best-attended one was the Vendor Expo, with over 40 participants. We tentatively conclude that people are more likely to come when there is something concrete to see, as opposed to sitting through a slide presentation. While the number of people who actually got an energy audit and/or installed a pellet heating system was smaller than expected, the contractors appreciated the business that came from the series, and as noted above, it provided the push for at least one contractor to work with a NYS agency to get qualified to be able to provide the significant rebates for pellet system installation. They installed their first pellet stove and pellet boiler under the Renewable Heat NY rebates, and believe that these rebates will be key for future expansion of these products.
- **Reuse Trail Revisited:** 12 stores and Tompkins County Solid Waste contributed over \$2,000 to cover the printing and design costs of the fourth edition of the Reuse Store Rack Card, which has been distributed to 30 stores and a handful of other places around the County. In addition, a group of stores including Reuse Center, Mama Goose, Mimi’s Attic, Found in Ithaca, and a handful of smaller ones, has retaken the idea of a Reuse Trail, and is planning on applying for a county tourism grant to launch this idea in 2017.
- **Large Employers:** In addition to the work with Cornell and its dining and custodial staff mentioned earlier under Energy Advising, GYGB is working with the Sustainability Office to incorporate into its “Green Office/Green Lab” certification program some incentives for employees to take “green” steps at home, such as energy efficiency, solar, or carpooling. These steps—which come out directly from the GYGB website—are being incorporated into a handout resource to be displayed on the Sustainability Office’s site. This work is being supported by an intern out of, and paid for by, that office that is working to bridge the work between GYGB and Cornell, among other things. These initiatives, if successful, can be replicated with other large employers in order to reach thousands of other community members in ways that are convenient and helpful to them.
- All of the above initiatives were collaborations, with Get Your GreenBack taking on the role of convener and facilitator. The results achieved again point to the importance of the role of a facilitative leader, without which none of these initiatives would likely have happened.

Collective Impact/Longer Term Policy Changes

- **Lighting the Way** – Funded by a Community Mobility grant, Karim hired three CEOs, trained them with the help of a volunteer researcher. The CEOs interviewed over 90 people with limited income on their transportation challenges and solutions. Together with the CEOs and researcher they analyzed the data, and wrote a report that has been shared widely, among transportation planners inside and outside of Tompkins County, as well as with dozens of other decision makers. This report is enclosed with this document. Already the report has shaped a proposal for supporting people reentering society after a period of incarceration.
- **Tompkins County Food Policy Council** – Karim was involved on the Steering Committee that helped organize the election of the Council. Karim supported the initial meetings, and has since stepped back from the group to let it grow independently

- **Bike Walk Tompkins** – Karim continues to serve on its Steering Committee, and has played a significant role in keeping the advocacy group connected to several initiatives that serve families with limited income (immigrant families and low-income families at BJM). Get Your GreenBack also researched and wrote a report on Barriers to Bicycling in Ithaca, which, along with an infographic will be shared with transportation professionals and decision-makers to shape local bike-related interventions. And of course, GYGB has continued to support Streets Alive!
- **Building Bridges** – Karim continues to serve on its Steering Committee, contributing to its strategy and networking, and collaborating on the Community Educator Organizer program.
- **Interfaith Climate Action Network** – Karim continues to serve on its Steering Committee, and has helped organize a number of gatherings around concrete steps congregations can take, including one focused on energy audits for houses of worship.
- **Other Steering Committees** – In addition, Karim served on a county Steering Committee giving feedback on a project for Electric Vehicle infrastructure in Tompkins County; and another for a Cornell professor-led study of home energy efficiency.

Other Accomplishments

- Helped promote HeatSmart Tompkins through campaign channels
- Continued publishing its monthly newsletter with 1,300 subscribers, and Facebook with over 500 likes and growing; launched a blog in order to provide more in-depth stories of people taking steps; sustained an online forum with 30 registered members and over 2,000 views of (the limited) posts.
- Provided informal support to residents helping take “steps” by connecting them with appropriate businesses or information.
- Helped coordinate the planning of a new “Energy Expo”, a fair-type event that would happen in summer or fall of 2017, which would showcase all sorts of ways people can take a meaningful step to cut their carbon emissions and save money. Already three brainstorm sessions have taken place involving over 30 people.

Summary

- All in all, through its support of all initiatives described in the three sections above, Get Your GreenBack has had a direct impact on at least 12,000 people, and worked collaboratively with over 80 organizations, including 10 in the energy sector, 13 in transportation, 32 in waste reduction and 17 in local food (the other organizations include banks, sustainability and social justice-oriented non-profits, and schools and government agencies). Through the campaign’s multi-faceted media outreach (from posters on buses to radio interviews, from newspaper articles in the *Ithaca Journal* and *Tompkins Weekly* to flyers distributed through children in different school districts), we estimate having reached well over 40,000 people.

HeatSmart II

- HeatSmart is only half way through its enrollment period for this round. Most enrollees are still thinking about the proposals they have been given and have not yet signed contracts. That is what we would expect at this time, and it is too soon to report on numbers of contracts, economic impacts, or specific carbon emission reductions.



- Public Outreach has again reached every town in Tompkins County and the City of Ithaca. At least one public meeting has now been held in each municipality, and additional meetings throughout the County will continue throughout the month of April. These meetings feature an overview talk on the technologies and essential role of heat pumps in meeting climate goals. They also provide opportunity to interact with the three vetted installer partners prior to enrollment.
- HeatSmart II will have enrollment open until the end of April (with modest possible extension), a contract signing deadline of July 31st, and an installation deadline of December 31st, 2017.
- HeatSmart has developed close ties with the NYSERDA Office of Renewable Heating and Cooling. We have benefitted from interactions and resources. We have members serving on advisory panels and stakeholder groups for both demonstration projects and policy formulation. When NYSERDA gave its webinar on the formal policy proposal on heat pump incentives a few weeks ago, HeatSmart received praise at two or three points in the presentation.
- A NYSERDA funded demonstration project on replacing boilers with ASHP is being led by Taitem. One of the strong recommendations they received during negotiations with NYSERDA's advisory panel was that they should collaborate with HeatSmart in finding suitable sites. HeatSmart now has a subcontract within that effort.
- HeatSmart is being watched not just by the State of NY but also by organizations covering the entire Northeast. Our logo now has multi-state recognition. The HeatSmart program is featured in the "Northeast/Mid-Atlantic Air-Source Heat Pump Market Strategies Report 2016 Update," published in January 2017 by Northeast Energy Efficiency Partnerships (NEEP). See pages 45-46, 57-58 and download the report here: http://www.neep.org/sites/default/files/NEEP_ASHP_2016MTStrategy_Report_FINAL.pdf This report sets a goal of having 40% of NE households using ASHP as primary heat source by 2030.
- After considerable review and consultation, HeatSmart has also taken steps to develop much better documentation on every job, so that accurate and home-specific estimates of carbon reductions can be calculated for the entire program. NYSERDA is expected to fund Taitem to do the final calculations based on recognized standards.

HOLT Architects

- HOLT continued championing, and participating in, the accomplishments of TCCPI with in-kind contribution of Andrew Gil's time, serving as a member of the TCCPI Steering Committee and also of the Ithaca2030 Advisory Board. This included Andrew's September 2016 participation in the Ithaca2030's attendance at the Toronto 2030 District Summit, and his on-going work documenting HOLT's compliance with Ithaca2030 District's requirements (as a property owner).
- HOLT completed the renovation of its new offices located at 610 W. State Street, Ithaca, NY (<https://ithacavoices.com/2015/09/architects-to-transform-building-on-ithacas-west-end/>). Originally built over multiple decades in the 1900's, HOLT designed a gut-renovation to 7500 gross square feet of the total 10,830 gross square foot area. The renovation included:
 - Abandonment of the natural gas service with a replacement of the existing heating system with electric heat pumps.
 - Installation of a 70kWh rooftop photovoltaic array.
 - Alternation of the exterior walls and roof into a High Performance Building Envelope.



In the first 9 months of occupancy, the 56,407 kWh photovoltaic production of electricity (the only source of energy used in the office) exceeded the 53,089 kWh consumption by 6%. HOLT is presently pursuing LEED certification for this project.

- 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 the LEED certification process for two projects at the Cayuga Medical Center:
 - The “Surgical Suites Addition” project, that had design work starting in the spring of 2010, and construction completed at the start of 2015, had tackled certification under the *LEED-Healthcare® Rating System*, which is considerably more challenging than certification under *LEED-New Construction®*. The project received certification in May 2016. At the time it was the first *LEED-Healthcare®* certified project in the State of New York, and remains such as of this writing. <http://www.holt.com/projects/view/surgical-services-renovations.html>
 - The design for the renovation/addition to house the relocated Obstetrics and Neonatal Intensive Care unit was begun in the spring of 2012, and construction was completed by the end of 2014. The GBCI (*Green Business Certification Council*, formerly the *Green Building Certification Council*) restricted the certification regulations after the project was registered, requiring the project team to change from pursuing certification under *LEED-New Construction®* (formerly “New Construction & Substantial Renovation”) to pursuing certification under *LEED-Commercial Interiors®*. Certification was received in October 2016 for this award-winning project, “Cayuga Birthplace.” <http://www.holt.com/projects/view/cayuga-birthplace.html>
- HOLT has continued to expend efforts on behalf of the Park Foundation’s interest and hope in achieving LEED-Platinum certification for the renovation of their new offices. This pursuit, initiated in the summer of 2011 is virtually complete, with an on-going construction alteration presently being undertaken to improve their water efficiency performance and, hopefully providing the project with the one LEED credit presently needed for a Platinum certification.

Ithaca 2030 District

- The contract for the Cleaner, Greener Communities Program grant awarded by NYSERDA in December 2014 was executed in January 2016 and funding was made available.
- The fully chartered 2030 District was launched in June 2016 at a reception in the new HOLT Architects office on West State/MLK St.
- Ithaca became the first 2030 District in New York, joining twelve other 2030 Districts in the U.S. and Canada: Albuquerque, Cleveland, Dallas, Denver, Grand Rapids, Los Angeles, Pittsburgh, San Antonio, San Francisco, Seattle, Stamford, and Toronto. Since the establishment of the Ithaca 2030 District, another two districts have joined the 2030 Districts Network: Austin and Portland, ME.
- At present the 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



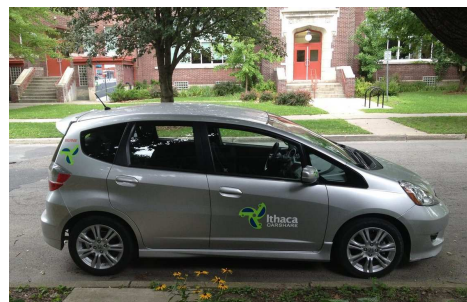
- HOLT Architects
- Ithaca Bakery
- Press Bay Alley
- Printing Press
- Purity Ice Cream
- Space@GreenStar
- Taitem Engineering
- Tompkins County Human Services Annex
- Tompkins County Chamber of Commerce



- Andrew Gil from HOLT Architects, Conrad Metcalfe from the NYS Building Performance Contractors Association, Guillermo Metz from Cornell Cooperative Extension - Tompkins County, and Lou Vogel from Taitem Engineering make up the project team, along with Peter Bardaglio, the TCCPI coordinator, who serves as project manager and is responsible for the administrative aspects of the project.
- The Cornell Cooperative Extension - Tompkins County, HOLT Architects, and Taitem Engineering are all providing generous pro-bono professional hours as a match to the NYSERDA grant.
- Katie Borgella, deputy planning commissioner for Tompkins County; Nick Goldsmith, sustainability coordinator for the City of Ithaca; Jan Rhodes Norman, founder of Local First Ithaca; and Frost Travis, president of Travis Hyde Properties, along with the grant team members make up the Ithaca 2030 District Advisory Board.
- Under the terms of the grant we are carrying out the following tasks:
 - Identify and recruit stakeholders (“District Partners”), such as property owners, building managers, community organizations, and providers of energy efficiency services
 - Develop a public outreach strategy and launch a website for the Ithaca 2030 District
 - Create a district strategy plan to help District Partners achieve the project’s goals
 - Develop a 2030 District financing guide
 - Customize the 2030 Districts Network small commercial toolkit
 - Hold workshops about the benefits of the 2030 District
 - Based on collected data, establish energy, water, and transportation emissions baselines for the District
 - Perform assessment of energy use, water use, and transportation emissions of building occupants for potential District Partners’ buildings, measured against established baselines
 - Design an online District Dashboard hosted on the Ithaca 2030 District website that tracks energy use and water consumption of District Partner buildings as well as transportation emissions of the 2030 District, and displays the progress of District Partner buildings
 - Perform a market analysis of District Partners’ buildings to understand District Partner needs
 - Provide education and resources, including energy efficiency contracting service packages, to assist District Partners to meet the project’s goals

Ithaca Carshare

- 629 new Ithaca Carshare members reported that they would sell or avoid the purchase of 152 vehicles
- 1,450 members took a combined 18,771 trips totaling 209,427 miles.
- Fleetwide fuel economy was 22% above the national average. The share of high fuel economy Toyota Prius Hybrids in the carsharing fleet is up to 54%
- As a result of the shifted driving habits of these



members and higher than average fuel economy, an estimated 15,671 gallons of gasoline and 140 metric tons of carbon dioxide were avoided.

- The low-income Easy Access membership plan, which subsidizes regular membership costs by more than half and reduces financial barriers to getting started with carsharing, supported 53 individuals.
- Bike Walk Tompkins moved from CTA to become a project of Ithaca Carshare.
- Ithaca Carshare, with project partners Way2Go and the Downtown Ithaca Alliance hosted the SmartTrips Ithaca pilot project on normalizing and incentivizing transportation behavior change in the downtown Ithaca core.

Ithaca College

Office of Facilities

- Commissioned the 2.9 MW Seneca solar farm in November. It will provide over 10% of our annual electricity and reduce our greenhouse gas emissions by over 2,400 tons carbon equivalent per year (reference US EPA Greenhouse Gas Equivalencies Calculator). For more information and live production data, please see <http://www.ithaca.edu/sustainability/>
- LED lighting upgrades in the Gannet Center Library, Terrace Dining Hall, and several larger classrooms in the Park Center for Business and Sustainable Enterprise
- Incorporated daylighting in the Terrace Dining Hall and renovated the space to improve the overall energy efficiency.
- Implemented a complete microfiber cleaning program which helped reduce chemical and water use across campus. This program removes a higher percentage of bacteria during the cleaning process and is ergonomically beneficial for our staff.
- Installed bottle filling stations and promoted the use of refillable bottles, helping to minimize the use of disposable water bottles.



Office of Energy Management and Sustainability

- Submitted and updated the AASHE STARS report using version 2.1.
- Started a student leadership team consisting of 10 Eco-Rep Project Coordinators, an Eco-Rep Program Manager, and an intern to help promote sustainability on campus through various programs and projects.
- Participated in RecycleMania.
- Started a composting program for the College Circle Apartments, with 20 plus apartments regularly participating.
- Eco-Reps attended and participated in the annual Sustainability Student Leaders Symposium at the University of Massachusetts (Amherst).
- Continued OSCAR (Office Supply Collection And Re-use), our free program that encourages departments to donate and re-use office supplies.
- Continued TIOLI (Take It Or Leave It), our free program that encourages students to donate and re-use gently used apartment and student supplies. As students move out after the spring semester, a team of student volunteers works through each res hall collection site to recover reusable items.
- Update and provide "Installments," a quick read posted in most campus restrooms that highlight campus and global sustainability issues and initiatives.
- Develop and deliver energy efficiency training through the Student Leadership Institute, in partnership with the Cornell Cooperative Extension Agency and SHERP (Student Housing Energy Reduction Program).

Transportation

- Support sustainable transportation through partially-subsidized TCAT bus services.

- Support ride-sharing through the Finger Lakes Ride Share Coalition, in partnership with a number of local higher educational institutions and Zimride.
- Collaborate with regional planners and officials to improve pedestrian and bicycle safety on campus and in the community.
- Bomber Bikes, a student led organization, continues to promote bicycle sharing and usage on campus.

Dining Services (in partnership with Sodexo)

- Supports the student-led organization SWIFT (Stop Wasting Ithaca's Food Today), which gathers and packages meals from surplus dining hall food to donate to the Ithaca Rescue Mission. This program has expanded to two days at two dining halls, resulting in an average of 220 lbs. of donated food per week.
- Recovered over 1,000 lbs. of used cooking oil per week, which is used for biofuel and other sustainable products.
- Incorporating Lean Path to help track and minimize organic waste generated on campus. Early returns show we consistently keep our waste below 0.25 lbs. per meal, below the national average of 0.33 lbs. per meal.
- Creating and developing a food management system to help improve meal forecasting, ordering, portion control, and meal-production processes to reduce waste.
- Partner with student organizations for "Weigh the Waste" program, where students weigh the leftovers as folks leave the dining halls. This helps educate diners on the amount of food they waste while offering suggestions on how to minimize this in the future.
- Provide regular staff training on the importance of minimizing organic waste production.
- Continue to partner with Cayuga Compost for the collection of compostable food scraps.
- Conducted training in partnership with the Humane Society of the United States (HSUS) to assist our chefs' in understanding and incorporating more plant based menu items. This will reduce our carbon footprint from the more traditional meat-based menu items.
- Continue to fine tune facility start-up and shut-down procedures to ensure more energy efficient processes.
- Developed and implementing a structured equipment upgrade and replacement plan focused on using Energy Star rated items.
- Display and promote energy efficiency information to guests.

Education

- Continued the Integrated Core Curriculum themes of "The Quest for a Sustainable Future" and "Power and Justice," two of more sustainably focused program elements. Course offerings under each theme were expanded.
- Student Affairs and Campus Life continued to partner engaged faculty and staff associates with the First Year Residential Experience. FYRE associates work with the residents in planning events each year focused on Sustainability, Social and Emotional Learning, and Diversity and Inclusion.
- South Hill Forest Products is a student-run business dedicate to providing high quality, all natural non-timber forest products to the community, using the natural resources with the Ithaca College Natural Lands. This experiential learning based class focuses on sustainable production methods including honey from our beehives, maple syrup from the sugar bush, mushroom farming, and other medicinal remedies.

Ithaca-Tompkins County Transportation Council

- On December 2014 Tompkins County was awarded a NYSERDA grant to develop an Electric Vehicle (EV) Infrastructure Plan for Tompkins County. This project is nearing completion. This project includes strategies and technologies for EV recharging stations, with particular attention to local (Ithaca-Tompkins County) conditions, developed a site evaluation tool for EV charging station



suitability, applied the tool evaluation to numerous sites around the county and, finally, prepared a detail analysis/plan for EV charging station installations at preferred locations. A study description and all reports (including the evaluation tool) are available at <http://www.ccofcny.com/tompkins-county.html>.

- Tompkins County and the ITCTC will coordinate local participation in a NYSERDA project that identifies Tompkins County as an EV Deployment Community. Subsidies will be offered for installation of 11 charging stations by the end of 2017, followed by substantial community outreach and education to promote EV use in Tompkins County.
- 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/>. The system is seeking to expand to a regional rideshare program powered online by Zimride. Implementation of the regional rideshare program is ongoing. Current partners include: Tompkins County, Way2Go, Cornell University, Ithaca College, TC3, TST-BOCES, Wells College and ITCTC. This list will grow as neighboring counties are invited to participate.

Learn@EcoVillage Ithaca

- TREE neighborhood Common House received a 2016 DOE Zero-Energy Ready award, as one of just three multi-family buildings in the U.S. More information [here](#).
- This same building was studied by Taitem Engineering, and found to use one-tenth of the energy of a standard multi-family building, yet cost only \$124/square foot to build (not counting land or soft costs.) Ian Shapiro wrote an October 27, 2016 blog about it, [Building Evidence](#) in which he says, *"A real-life example of how a building can be built to use almost zero energy, AND not cost any more than a typical building. For me, the skies have opened. I now know that we can do what we once thought was impossible."*
- Ian Shapiro and Liz Walker taught two Net Zero Energy Building workshops, for architects, developers, and green builders. Architects were able to earn 14 Learning Units for each of the two-day workshops, and LEED professionals earned 14 GBCI CE hours. The May and October workshops were held at EcoVillage, and featured building examples from the three neighborhoods.
- Learn@EcoVillage received a Town-Gown or TOGO Award, in recognition of our work with Cornell, including a half-day visit by Kyu Whang, VP of Infrastructure, Property and Planning, and his senior staff. The visit was meant to further develop collaborations between sustainability efforts at Cornell and EcoVillage.
- Adriane Wolfe, a graduate student from the University of MI in electrical engineering systems, did her master's thesis on studying our FROG neighborhood's electricity usage. The findings were startling: FROG households that participated in community dinners saved almost a third of their evening peak energy use. We've since developed a program to scale this up, starting with free dinners at Southside Community Center, and monitoring energy use.
- We've started a Community Mentoring program in which we consult with developers who want to build ecovillages. So far, we've worked with six groups, from Waterloo, Canada, to Rochester, NY and the Hudson Valley.
- EcoVillage Ithaca was featured in articles in Bloomberg BusinessWeek, a 20-minute documentary for French public TV, Swiss and French public radio programs, and a documentary by Finnish producer Kirsi Jansa, among other national and international coverage. Many of those can be seen [here](#)



- Learn@EcoVillage developed a five-year Strategic Plan. One of the 5 goals is "Contribute to an energy transition to cleaner, greener energy by influencing the practices of professionals in the building and design sector."

Local First Ithaca

- Membership numbers more than 220 local businesses, organizations, and non-profits and is still growing
- Published our 6th issue of the annual "Guide to Being Local"
- Received our 501C3 status
- Participated in Ithaca's 2030 District Steering Committee. LFI became the Designated Management Entity for the District
- Continued our collaboration with GreenStar Community Projects/Feeding Our Future, Get Your Green Back, Building Bridges and NYSSBC
- Worked with the New York State Sustainable Business Council (NYSSBC) and American Sustainable Business Council (ASBC), focusing on NY health care legislation, an equitable clean energy system, and regulation of toxic chemicals
- Continued work with NY4 Democracy/Public Citizen on voting access
- Jan Rhodes Norman, co-founder of Local First Ithaca, serves on the boards of NYSSBC, Finger Lakes Reuse, and GreenStar Co-op

New Roots Charter School

- New Roots was selected to participate in *Teaching Our Cities*, an EPA-funded project that brings together leaders among schools with a mission of environmental stewardship in the Northeast to develop and refine curriculum that engages students with a study of the environmental and human landscape of their cities and regions.
- All New Roots students participated in a course called *A Sense of Place* in September, investigating the relationship between people and the natural environment in our region through the lens of Education for Sustainability (EfS) standards.
- New Roots environmental chemistry students developed a longitudinal study of water quality in Cayuga Lake to test the efficacy of indigenous ecological knowledge in remediating water quality problems in Stewart Park. Students petitioned Ithaca City Council and the Department of Public Works for permission to plant a 50x50' test plot of cattail and calamus, then worked with a local native plant nursery to obtain plants and establish the plot.
- Two students established a school garden in the Ithaca Community Garden for New Roots to grow food for our Farm to School program as part of their Senior Team Capstone project.
- Students studying urban gardening planted and cared for cherry tomatoes, strawberries, basil, parsley, kale, lettuce, arugula, and radishes in containers on the porch of the Clinton House and along the street.
- Cayuga Nature Center scientists, in collaboration with New Roots science teachers, brought the impact of climate change on our local ecosystem into focus for our students through a study of the impact of climate change on the old-growth forest in Smith Woods.
- During Intensives Week in Spring 2016, students and teachers went on a week-long backpacking trip through the Finger Lakes National Forest, exploring features of local microbiomes.



Park Foundation

Local

- The Foundation awarded a total of \$237,936 for climate and energy related projects including TCCPI, Sustainable Tompkins, INHS and HeatSmart programs.

New York

- Grants totaling \$835,000 continued to focus on aspects of hydrofracking including pipeline and compressor station issues as well as follow-up on the state ban.

Investments

- A conservative estimate of the Foundation's portfolio includes 15% (approximately \$46 million) in climate solutions investments.

Shareholder Resolutions

- In 2016 the Foundation filed or co-filed 7 shareholder resolutions on hydrofracking, environmental and investor climate risk. Companies included ExxonMobil, Chevron, Entergy, Anadarko, Newfield, and Hess. Votes ranged from 23% - 61%.

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

- We conducted sessions at national and regional conferences (e.g., Geological Society of America, Science Teachers Association of New York State, Earth Educators' Rendezvous, and more), and teacher professional development workshops on teaching controversial issues and climate and energy literacy.
- Our **Weird Weather exhibit**—a kiosk focusing on **local impacts of climate change** on weather, agriculture, public health, and the economy —was installed for most of 2016 at the main branch of the Buffalo and Erie County Library system. Development of the kiosk was funded by the Park Foundation and NSF.
- We published two more volumes of our **Teacher-Friendly Guide to the Earth Science** (<http://teacherfriendlyguide.org>) for additional regions of the US. The Guides contain new chapters on climate and energy. We are also working on a separate Guide in this series specifically on climate change. This work was funded by NSF.
- We worked with **New Roots High School 9th graders** and **elementary school-age summer campers** on climate change-related outdoor education activities at Smith Woods and the Cayuga Nature Center. This work was funded by the Park Foundation.
- We offered demonstrations of climate and weather concepts at the Museum of the Earth using a **Weather-in-a-Tank** apparatus – a rotating tank of water that allows for demonstration of fluid dynamics concepts. This project is funded by an NSF grant, through Cornell/UCLA Earth and Atmospheric Sciences Professor Gang Chen.



Renovus Solar

- Interconnected the very first Shared Renewables Community Solar project in New York State with a ribbon cutting event in partnership with NYSERDA and the Governor's Office.
- This project, located in the Town of Ulysses, serves 40 area households and is comprised of 1,140 solar panels, capable of generating 359.1 kilowatts of clean electricity.

- Completed a second project on the same piece of property, owned by the GrassRoots Festival organization. This Community Solar Farm serves an additional 51 local households and is comprised of 1,512 solar panels, totaling 499.96 kilowatts of generation capacity.
- In 2016, installed clean energy systems totaling 1.32 MW in generating capacity, serving over 200 residential and commercial customers.
- Installed solar systems for notable area businesses including: HOLT Architects, GreenStar Natural Foods Market, Maguire Family of Dealerships, the Science Center, and Indian Creek Farm.
- Developed over 1.5MM of land for solar this year, creating available capacity for over 25 megawatts of future solar development.
- Partnered with Clean Energy Collective, the world's leading developer of community solar software solutions, to access their comprehensive suite of software and servers that enable efficient community solar program implementation and operation. The result of which is in part the public facing renovussharesolar.com website which enables those interested in community solar to simply and instantaneously get a quote for community solar and purchase solar panels online.
- Enrolled hundreds of local electricity consumers in a pilot 'Pay-As-You-Go' community solar program that offers a short-term subscriptions for cheaper, cleaner, locally generated power to replace the more expensive, fossil-fuel generated power the utility company offers.

Sciencenter

The Sciencenter takes a triple-bottom line (environmental, societal, and financial) approach to sustainability. We consider each of these three elements from two perspectives: internal (i.e., organizational) and external (i.e., community and beyond). Each year, we seek to advance all six components of these elements of sustainability.

Environmental (Internal: Management - External: Education)

- Added exhibits: 1 new exhibit on fresh water and watershed health
- Toured a major traveling exhibition "Ocean Bound!" on watershed health and ocean conservation to museums nationwide.
- Delivered field trips on the topic of renewable energy to 400 2nd grade students in Tompkins County through the *Kids Discover the Trail!* program.
- Delivered ocean health and science field trip to over 750 2nd grade students in rural Tompkins County and Cortland City School District through the Sciencenter's endowment.
- Offered exhibits in our "Sustainability Corner" on waste reduction, energy conservation, water conservation, composting, and consumer behavior.

Societal (Internal: Staff – External: Community, & Museum Field)

- Donated \$34,000 in free family memberships and museum passes to organizations throughout upstate NY
- Supported local health and human services agencies by participating as a United Way Pacesetter Organization, raising over \$2,500 for the United Way 2016 campaign
- Offered access to the museum for low-income guests with Museums For All, a program that provides \$1 admission for anyone in a family with an EBT (electronic benefits transfer) card (formerly Food Stamps)
- Our staff served on boards, volunteered for, and/or contributed to 42 other not-for-profit organizations in Tompkins County
- Provided monthly professional development workshops for Head Start teachers in Tompkins County

Financial (Internal: Organization – External: Community)

- Grew the Sciencenter endowment to \$3.9 million, with the goal of providing sustained funding for the museum and its programs in the future
- Visitors to the Sciencenter from out-of-county spent nearly \$1,000,000 in Tompkins County during the previous year
- Sciencenter director chaired the Tompkins County Energy & Economic Development Task Force 2015-16

Snug Planet

- Received “Outstanding Performance by a Contractor” award from the NYSERDA Home Performance with Energy Star program.
- Received a People's Choice Signs of Sustainability award from Sustainable Tompkins.
- Completed 100+ energy-saving retrofits in the greater Tompkins County area.
- Completed our first-fossil-fuel-to-heat-pump retrofits, allowing customers to eliminate natural gas meters and oil/propane deliveries.
- Performed energy design, insulation, and heat pump installations on several net-zero ready new homes.
- Jon Harrod’s article “Building Homes for the Post Fossil Fuel Era” was published in Tompkins Weekly: <http://tompkinsweekly.com/news/2016/06/20/building-homes-post-fossil-fuel-era/>

Sustainable Tompkins -- Finger Lakes Climate Fund

- We ran our second fall ‘Seal the Cracks’ campaign with a goal of offsetting 500 tons of CO2. In August, we launched our new website for the Climate Fund with several features to enhance user interaction.
- The new home page is dynamic and constantly changing, recording each offset and recalculating our shared impact, with recent donor profiles showcased.
- Offsetters can form teams for the ‘Carbon Races’ or compete individually for weekly or monthly rankings. Donations of over 60 prizes from 8 local businesses supplied the Prize Wheel to provide donors a chance to win a reward for taking responsibility for their carbon emissions.
- We exceeded our goal by 144%, raising \$17,863 and offsetting 715 tons of CO2. Campaign participants included many repeats from 2015 and a large number of first-time offsetters. In addition, Cornell departments successfully made three offsets through their business office – creating a known process for other Cornellians to follow.
- In 2016, we also reached our goal of making six grant awards totaling \$8,745 to homeowners in Lansing, Newfield and the City and Town of Ithaca – including our first grant for air-source heat pumps for space heating and hot water and our first grants to immigrant families.



Taitem Engineering

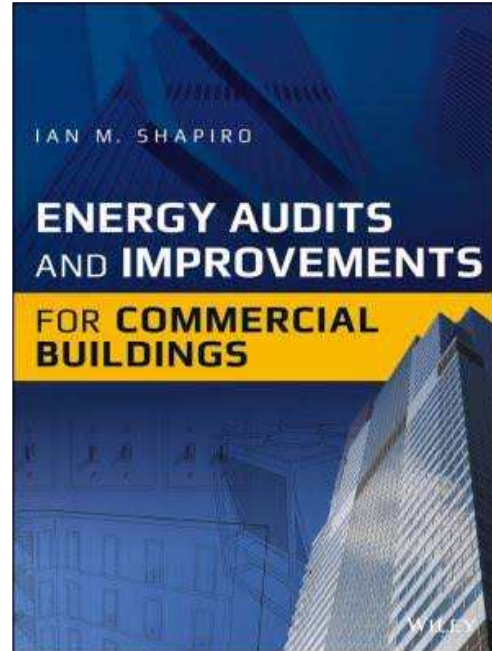
January – March

- Taitem designed and installed a solar PV installation at the Ulysses Philomathic Library in Trumansburg. In March, Taitem held a hands-on workshop at the library where participants learned about all the many pieces that make a solar installation happen and put together a mini DIY solar kit.
- Two members of Taitem’s PV department received awards for excellence from NYSERDA. They were two of only three awards given.
- Taitem began participation in Going Solar! Chemung County. This solarize program is one of several that Taitem is participating in. Others include Tompkins County, Seneca County, Southern Tier East, Southern Tier Central, Schuyler County, and Central New York.
- Taitem Engineering is working with NYSEG, a subsidiary of AVANGRID, to develop details for a Reforming the Energy Vision (REV) demonstration project that will explore how the involvement and support of NYSEG can help communities meet their energy goals. The project, based in Tompkins County, seeks to leverage the value of NYSEG’s involvement in the planning and promotion of distributed energy resources such as solar installations as well as energy efficiency projects.

- Ian Shapiro gave a presentation, “Blowing Off Steam: The Case for Variable Refrigerant Flow (VRF) Heat Pumps To Replace Steam, New York’s Biggest Energy and Water Glutton” at the Syracuse University Research and Technology Forum.

April – June

- Taitem staff gave a workshop at the Chamber of Commerce on lowering energy bills.
- Ian Shapiro’s latest book was published, *Energy Audits and Improvements for Commercial Buildings* (Wiley). Ian was also honored as Green Building Advocate of the Year during the 2016 New York State Green Building Conference held in Syracuse.
- Ian Shapiro delivered a 2-day training on achieving net-zero buildings at EcoVillage of Ithaca.
- Taitem sponsored a one-time screening of the new documentary *Catching the Sun*, by filmmaker Shalini Kantayya at Cinemopolis. This was presented as a fundraiser for Opportunity, Alternatives, and Resources (OAR) a longstanding community partner that provides services and advocacy for inmates in the Tompkins County Jail, ex-offenders, and offenders’ families to aid in their re-adjustment into the community.
- Taitem’s AeroSeal team completed work at 520 West 28 Street, New York City, a new apartment building at Chelsea Piers designed by the late architect Zaha Hadid.
- One of Taitem’s commissioning, modeling, and LEED projects, NYC Parks & Recreation’s district headquarters at Bushwick Inlet Park, was named one of ArchDaily’s Top 100 US projects.
- Taitem designed and installed a 104 kW PV system at Montezuma Winery and Hidden Marsh Distillery at the corner of Routes 5 and 89 in Seneca Falls.
- Taitem worked with the Tompkins County Planning Board, Tompkins County Industrial Development Agency, and Tompkins county Area Development to create a tax-abatement incentive program for new commercial and industrial buildings that meet green building criteria.



July – September

- Taitem supported and celebrated several staff members and friends who took part in the AIDS Ride for Life, 100 miles around Cayuga Lake. Taitem is also a ride sponsor, supporting the work of the Southern Tier Aids Program.
- Ian Shapiro published an article at facilities.net, “3 High-Performance Energy Efficiency Strategies to Reduce Energy Permanently.” The article explores load-reduction improvements that reduce the installed cost of energy improvements.

October – December

- Ian Shapiro launched a new blog, *Building Evidence*. Find it on Facebook.
- Taitem’s design team began mechanical, electrical, plumbing, and structural design for Resilient Corners, a new townhouse community in Syracuse featuring geothermal and solar-thermal systems aiming for LEED certification.
- Taitem staff gave a workshop at Ithaca’s First Presbyterian Church on how houses of worship can benefit from a free energy audit through NYSERDA’s small commercial energy efficiency program.
- Taitem was selected as an installer for Solarize Central New York, which covers Cortland, Cayuga, Onondaga, Madison, and Oswego counties.
- Taitem held a Utility Bill Bash at its downtown office for its PV clients. Staff were on hand to give a refresher course on PV systems and answer questions such as “Is my system producing enough?” and “How do I monitor how much my system is generating?”

- Taitem joined 13 other Ithaca agencies, organizations and businesses to launch the Ithaca 2030 District, signing on to an ambitious challenge to reduce energy use, water use, and transportation carbon emissions 50% by 2030.

Tompkins Community Action

Tompkins Community Action, Inc. has been the designated US Department of Energy/NYS Homes and Community Renewal Weatherization Assistance Program (WAP) provider for the City of Ithaca and Tompkins County for thirty-four 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 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, etc. 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 57 energy efficiency upgrades to low-income housing units under the Weatherization Assistance Program.
- Completed 18 energy efficiency retrofits under the NYSERDA Home Performance with Energy Star Program and the Assisted Home Performance with Energy Star Program.
- Provided 26 free energy audits / electric reduction / energy efficiency upgrades to low-income households as a designated NYSERDA EmPower NY contractor.
- Provided 23 emergency cooling services under the Tompkins County DSS Emergency Cooling Program.
- Provided 7 emergency heating services under the Tompkins County DSS Emergency Heating Program.
- Facilitated news articles in support of National Weatherization Day 2016.
- Participated with Sustainable Tompkins' Finger Lakes Climate Fund "Residential Energy Efficiency" grant program to provide energy efficiency retrofits to one Tompkins County home.
- Increased Energy Services Department staff to respond to growing demand for energy efficiency retrofits throughout the County.
- Participated in diverse local forums, presentations, and conferences, etc. to inform the Tompkins County community about the benefits of weatherization (for housing units and the environment).
- Participated with various community agencies and their committees to address issues associated with climate protection.

Tompkins County

Plans and Studies

- **Energy Roadmap.** Final report evaluating local energy resources and developing scenarios to meet the County's 80% GHG emission reduction goal and projected energy needs through 2050 was completed in March 2016. This was followed by presentations within the County and at a statewide conference in Buffalo.
- **Energy and Economic Development Task Force.** Partnered with Tompkins County Area Development (TCAD) to facilitate the work of the Task Force to address short-term energy needs and emissions in ways that contribute to a vital local economy. The final report and recommendations from the Task Force were released in June 2016. Follow-up with the Public Service Commission and NYSEG resulted in NYSEG consideration of alternatives to the West Dryden Road pipeline and interest by the PSC in exploring creative methods to reduce demand for natural gas in the Lansing moratorium area.
- **Greenhouse Gas Emissions Inventories.** In September 2016,



completed detailed greenhouse gas emissions inventory for both the community and County government using 2014 data and presented results to the Legislature. Went beyond traditional GHG accounting methods to show results if latest climate science on methane is applied to the inventory, as well.

- **Energy Focus Area Strategy.** In partnership with TCAD, hired a consultant to develop a strategy to provide for the energy needs of growing businesses while prioritizing renewable energy solutions and addressing energy concerns in key geographical areas of the county. Phase 1 was completed in 2016, including analysis of the projected energy demand for all four focus areas, and Phase 2 was launched, to look at ways to address energy constraints in a single focus area.
- **IDA Energy Incentives.** In partnership with TCAD, hired a consultant to structure an incentive program to provide enhanced incentives for businesses that invest in energy efficiency and renewable energy systems to reduce their carbon footprint as part of a job-creating expansion. The final report was completed in 2016 and presented results to the IDA for consideration.
- **Community Microgrid for Critical Facilities, NY Prize.** Using grant funds from NYSERDA, worked with a consultant to develop a feasibility assessment of the technical design and system configuration for a proposed community microgrid in the vicinity of the airport. Phase 1 of this work was completed in 2016. Although much was learned about the energy system and potentials in the area, a decision was made to not proceed to Phase 2 at this time.
- **Electric Vehicle Infrastructure Plan.** Worked with ITCTC and a consultant to identify electric vehicle charging station needs and opportunities. This included a report on EV existing conditions and best practices in Tompkins County, developing a charging station site suitability tool, applying the tool to nominated sites, and developing detailed site analysis for 7 sites in the county.
- **Energize NY Finance.** Continued to promote and implement Energize NY, the State's property assessed clean energy (PACE) program for commercial properties. There were approximately 10 projects in the County and City of Ithaca working to take advantage of low-cost long-term financing for energy efficiency and renewable energy projects, with repayments collected annually through a charge on the tax bill.
- **Municipal Tools to Promote Deployment of Renewable Energy Systems.** Researched model ordinances and renewable energy systems to develop draft guidance to municipalities on key provisions to include in local ordinances regulating and supporting development of renewable energy systems. Outreach for this work will take place in 2017.
- **Stream Corridor Protection Program.** Worked to implement the County's flood hazard mitigation program, incorporating watershed-based approaches to reduce the risk of flood damages. Evaluated the future funding of the program.
- **Pipeline Inventory.** Hired a consultant to conduct an inventory of pipeline stream crossings in the County and identify those of highest priority in order to advance measures to reduce risk to human health and the environment. In 2017, the project will enter the field-work phase and is expected to be completed by year-end.

Government Facility and Fleet Initiatives

- **County Government Electric Vehicle Fleet.** In 2016, the County purchased five Chevy Volts for the Mental Health Department with funding assistance from a state grant. EV charging stations were also installed at the Mental Health parking lot to charge the vehicles.
- **Airport Terminal Renovation.** Developed plans to renovate the airport terminal, with particular emphasis on energy upgrades. Proposed upgrades would reduce natural gas use at the terminal by at least 40%. The airport has applied for grant funding to undertake terminal renovations including energy upgrades.

Partnerships and Support

- **HeatSmart Tompkins.** Advised and assisted the Solar Tompkins Board of Directors in launching HeatSmart II, the second round of a county-wide energy efficiency and heat pumps program. Again acted as the fiscal sponsor for a Park Foundation grant that supported that effort. The HeatSmart I program succeeded in helping nearly 100 households in Tompkins County improve home energy performance. Fifty-two (52) homes made building shell improvements, 26 installed ASHP systems for space heating/cooling, 14 installed GSHPs, and 11 installed air-sourced heat pump domestic hot water units. These systems were valued at over \$1.4 million, stimulating local and regional home energy efficiency and heat pump market growth.

- **Ithaca 2030 District.** In 2016, the District was officially launched with Tompkins County joining as a founding member. The goal of the Ithaca 2030 District is to reduce energy demand, transportation emissions, and water use in downtown commercial buildings.
- **Energy Smart Community.** Worked with Avangrid staff and other community partners to develop a framework for integrated systems planning, and other aspects of the utility's proposed Energy Smart Community focused on Tompkins County.
- **Reforming the Energy Vision Clean Energy Demonstration Project.** Collaborated with NYSEG, Taitem Engineering and other community partners to develop a demonstration project to explore how the involvement and support of the utility can help communities meet their energy goals.
- **Residential Energy Score Project.** In July 2016, a consortium of five municipalities in partnership with Tompkins County and Cornell Cooperative Extension, completed the final report evaluating building envelope rating methods and considering how best to create value for energy efficiency in the local housing market. This project was funded by a NYSEDA Cleaner Greener Communities grant. All five municipalities endorsed the report and program. Follow-up included exploration of how to fund and launch a pilot program in 2017.

Tompkins County Area Development

- In a joint effort with Tompkins County, the Energy and Economic Development Task Force was created to consider creative solutions to meet the energy needs of Tompkins County's growing economy, while simultaneously supporting the County's goal of reducing carbon emissions by 80% by 2050. The task force was comprised of 16 community leaders. A report of recommendations was issued in 2016. Follow-up with studies, and work with the local utility and NYS Public Service Commission are underway.
- The Industrial Development Agency and the Tompkins County Department of Planning and Sustainability jointly funded a study by Taitem Engineering that made recommendations for an enhanced energy incentive offered by the IDA for significant energy efficiency and renewable energy in new building construction. The IDA will adopt the policy and 2017 and expects at least two projects in the near term.
- The Industrial Development Agency is reviewing a community solar policy that would provide property tax incentives for community solar projects.



Tompkins County Chamber of Commerce

- During 2016, the Tompkins County Chamber of Commerce continued its partnership with Cornell Cooperative Extension of Tompkins County to publish the newsletter Commercial Energy Efficiency Now, a publication which included success stories from local businesses and organizations implementing conservation measures or alternative energy projects, and provided access to financing and other resources for commercial property owners and businesses.
- The Chamber also completed a \$5,000 lighting efficiency project, transitioning its entire supply of light bulbs and fixtures to LEDs. Chamber President Jennifer Tavares continued to serve on the Energy & Economic Development Task Force throughout the year, and the Chamber is a proud member of the Ithaca 2030 District.

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 24 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 2016 included:
 - **Update on the Finger Lakes Land Trust** – Andy Zepp, Executive Director
 - **The Cayuga Power Plant and Public Service Commission Decision** – Irene Weiser, Member of the Caroline Town Board and Coordinator of Fossil Free Tompkins.
 - **Solar Trends in New York State** – Melissa Kemp, Director of Government and Utility Affairs at Renovus Solar and member of the New York Solar Energy Industries Association (NYSEIA) Board
 - **The Impact of Climate Change on Agriculture** – Michael Hoffmann, Executive Director of the Institute for Climate Change and Agriculture and Professor of Entomology at Cornell.
 - **Methane and Shale Gas after COP21** – Bob Howarth, the David R. Atkinson Professor of Ecology and Environmental Biology at Cornell.
 - **Exploring Enhance Geothermal at Cornell** – Sarah Zemanick, Director of Campus Sustainability at Cornell.
 - **The NYS 76 West Clean Energy Competition** – Brian Bauer, Program Director
 - **The TCAD Energy and Economic Development Task Force Draft Report** – Martha Armstrong, Vice President and Director of Economic Development Planning at Tompkins County Area Development (TCAD).
 - **The Distributed System Implementation Plan and the Energy Smart Community Project** – Susan Mann and Drury Mackenzie, Avangrid.
 - **The Airport Microgrid Project** – Ed Marx, Tompkins County Planning Commissioner,
 - **The Climate Justice Movement** – Reed Steberger, Assistant Coordinator for TCCPI and Jane Whiting, Youth Representative for TCCPI.
 - **The Current State of Community Solar** – Robb Jetty, Chief Commercial Officer at Renovus Solar.
 - **The Green Buildings Policy Project** – Nick Goldsmith, the Sustainability Coordinator for the City and Town of Ithaca,
 - **Maplewood Redevelopment Project** – Jeremy Thomas, Senior Director of Cornell University Real Estate Department, and Scott Whitham, Principal of Whitham Planning and Design LLC,
 - **Tompkins County 2014 GHG Emissions Inventories** – Ed Marx, Tompkins County Planning Commissioner,
- The [TCCPI Newsletter](#), which comes out every two months, had a subscriber base of about 370 this past year, with an open rate of 33% for its six issues. In March 2016 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; only 53% of those named All Stars, like TCCPI, are multiple-year recipients.

- 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. In addition, pages on the urgency of dealing with climate change, the impact of climate change on New York State, and climate protection efforts in other upstate communities underwent significant updates and a page on energy and equity was added. The website continued to attract a growing audience, increasing its average monthly hits from 2,000 in the previous year to nearly 3,000 in 2016. The highest monthly total surpassed 3,500.
- 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 272 to 324 during the year. In addition, the TCCPI coordinator continued to post information about energy, climate change, and sustainability issues on Twitter, and has over 2,700 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 Energy Road Map Steering Committee and the TCAD Energy and Economic Development Task Force.
- In addition, he served on the boards of the New Roots Charter School, Groundswell Center for Local Food and Farming, Cayuga Health System, and the PRI/Museum of the Earth/Cayuga Nature Center.
- TCCPI grew its relationship with the Multicultural Resource Center in 2016 to collaboratively develop and implement the TCCPI/MRC Youth Organizing Fellowship. More details can be found in the Climate Justice and Youth report above.

Tompkins County Council of Governments

- TCCOG's sustainability committee established 2 working groups in 2015. The Community Choice Aggregation working group has been reviewing the state's new initiative allowing municipalities to procure energy supply on behalf of their residents. CCAs bring the possibility of local control over energy sourcing, including the possibility of more renewables, local jobs, local installations, also possibly lower costs than NYSEG supply. The Towns of Caroline, Danby, Dryden, Ithaca, and Ulysses, the City of Ithaca and Village of Cayuga Heights are participating in the CCA work group.
- TCCOG's Energy Advisory work group was formed to enable municipalities to work together to help achieve the goals in the County's Energy Road Map. Currently participating municipalities (same list as CCA) are working on achieving 4 of the 10 goals identified by NYSEDA, which would enable each municipality to qualify for funding for additional energy-related projects.
- Last, TCCOG's Residential Energy Score Project completed development of the RESP planning document on how a residential energy score project might be launched for pilot. NYSEDA has been hosting webinars on the work the RESP team accomplished and we expect they will issue RFP's for pilot RESP projects in 2016.

Tompkins County Residents Against the Pipeline

- Established and maintained website (<http://www.drydenpipeline.com/>) to educate and update county residents about the W. Dryden Rd. pipeline.
- Went door-to-door (as in 2014 and 2015) to communicate directly with and learn from WDR neighbors who had not signed pipeline easements.
- Researched pipeline easement law used by public and private companies, making summaries available to the public.
- Attended Public Service Commission hearings and repeatedly wrote the PSC, explaining the pipeline's glaring defects.
- Communicated with NYSEG employees to learn more about pipeline construction plans and familiarize ourselves with NYSEG's Energy Smart Community initiative.
- Assembled at NYSEG Ithaca offices on HWY 13 to protest pipeline expansion based on climate change, cost, and other consequences.

- Prepared a Holiday Card with 650 area signatures urging NYSEG to rely on alternative energy source, heat pumps, and energy conservation in place of the WDR pipeline.
- Expressed our position in letters to editors, opinion pieces, and yard signs.

Town of Caroline

- Key players from the Town Energy Committee continue work on Solar Tompkins HeatSmart II Program, promoting home energy efficiency and heat pumps for home heating and cooling. Jonathan Comstock stepped down from as chair of Solar Tompkins to be the HeatSmart II Program Director that is currently underway.
- The Town signed a term sheet with Renovus Solar for a Community Solar Proposal for the town's electrical needs. While we did not go forward, we were able to provide feedback to Renovus about town concerns and they were able to educate us on how PPAs work and are priced. We expect this to be helpful as we move forward to transition the town to local renewable energy in the near future.
- The Caroline Planning Board continues its work on updating Caroline's Comprehensive Plan. The Community Survey was completed in 2016 and those results were presented at a public meeting in fall 2016. Sustainability and rural lifestyles are still strongly supported. The Town budgeted for a Planner to assist with completing the Comprehensive Plan update in 2017.
- The Town has been vigorously exploring Community Choice Aggregation as a mechanism to move our community swiftly to renewable energy. A key concern is determining whether we can support local renewable energy companies and projects with a CCA model. Cim. Weiser has been stewarding this work as Chair of a subcommittee of TCCOG.
- The Caroline Town Board adopted a **Resolution Regarding Tompkins Residential Energy Score Program and Implementation Plan** (#103-2016, July 13). This endorsed the RESP Plan to develop a voluntary energy scoring program for homes.
- The Caroline Town Board adopted a **Resolution Supporting Alternatives to Natural Gas Expansion** (#81-2016, April 13). The resolution was directed at the PSC and NYSERDA asking them to recognize that expanding natural gas infrastructure is contrary to municipal and state goals for reducing GHG emissions, to request that utilities investigate non fossil-fuel technologies, and to curtail incentives for fossil fuels and instead direct those incentive toward curtailing the number of natural gas customers.
- The Caroline Town Board adopted a **Resolution Urging Governor Cuomo to Sign Bills A9925/S6249 to Establish a New York State Geothermal Tax Credit** (#140-2016, October 12). This legislation would have provided a 25% tax credit up to \$5,000 for purchase and installation of geothermal energy systems.

Town of Ithaca

Secured over \$150,000 in grant funding

- Awarded \$103,940 by Partners for Places for the Green Building Policy project (see below); half from national consortium of foundations, half from Park Foundation
- Awarded \$47,732 by Park Foundation for shared Sustainability Planner position
- Administered two existing grants (NYSERDA and Park)

Kicked off Green Building Policy project

- Will involve a comprehensive study of policy tools that the Town & City of Ithaca can use to incentivize or mandate green building standards for new construction
- Main deliverables include green building policy study, development forecast, and outreach
- Near end of consultant selection process



Completed **Residential Energy Score Project**

- Led effort to create a voluntary residential energy score program for homes within the five participating municipalities
- Program document endorsed and/or supported by all five municipalities
- NYSERDA now considering regional pilot programs, thanks in part to our efforts
- Program to be implemented as soon as funding allows; currently exploring options for program host and funding



Launched **Energize NY Financing program**

- Uses innovative Property Assessed Clean Energy (PACE) model to offer long-term low-cost financing for energy efficiency and renewable energy projects in commercially-owned buildings
- Tompkins County and the City of Ithaca were the first two upstate NY communities to offer this program



Continued publication of **Ithaca Sustainability newsletter**

- Now over 575 subscribers
- Also Facebook page (now nearly 475 likes)
- Readers are not only locals, but also organizations at a regional and national level

Supported many local initiatives through participation in steering committees, free meeting space, and promotion:

- Tompkins County Energy Roadmap; Ithaca 2030 District; Community Choice Aggregation working group (project of TCCOG); Sustainability Center; Electric Vehicle Infrastructure Plan; Energy Smart Community; Community Energy Coordination; TCCPI



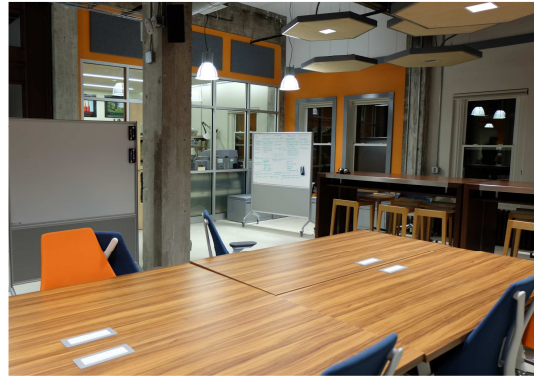
Developed and **strengthened relationships** with local, regional, and national organizations

- U.S. Department of Energy
- Pacific Northwest National Laboratories
- Urban Sustainability Directors Network
- Northeast Energy Efficiency Partnerships
- The Funders' Network for Smart Growth and Livable Communities
- Energize NY
- NYSERDA
- Various municipal sustainability departments

Travis Hyde Properties

- After eight versions of design, six of which went before Ithaca Landmarks Preservation Commission (ILPC), the ILPC voted in favor of the final design for the redevelopment of the Old Tompkins County Library into a 58 unit apartment house to be named The Dewitt House. The building will reuse part of the existing structure. It will also be an all-electric building, which will allow it to be powered by renewable energy in the future as local capacity grows. Because of its' central location in downtown Ithaca and a walk score of 95, the Dewitt House will greatly reduce reliance on vehicular travel for its' residents.
- Travis Hyde Properties signed a Power Purchase Agreement with Renovus Energy for up to one megawatt of solar photovoltaic capacity.

- The five-story vertical expansion of the Carey Building was completed in 2016. The project is host to Rev: Ithaca Startup Works, a groundbreaking collaboration among Cornell University, Ithaca College, and Tompkins Cortland Community College to create a business incubator in Ithaca. Several companies founded at Rev such as Rosie and Ursa Space Systems have already outgrown the incubator and moved their expanding staffs to other locations in downtown Ithaca, enhancing the economic viability of downtown and giving more people opportunity to walk to work.



- Travis Hyde's remediation of the former Ithaca Gun Factory recommenced in 2016, with approval from the DEC to modify the existing Remedial Investigation plan to include more removal of contaminated soil, which will lead to a DEC track four cleanup of the site ahead of redevelopment of the site into 60-65 market rate apartments. Our commitment to building in Ithaca will help bring more people who now commute in for employment to live where they work, which can foster a more environmentally sustainable lifestyle.

Weaver Wind Energy

- We had several groups visit our wind turbine manufacturing facility this year, including students from Morrisville State College's Renewable Energy Training Center and interns from Cornell Cooperative Extension of Tompkins County. Our visitors were interested in learning more about distributed wind energy's role in the transition to a 100% renewable energy future.
- In June, Art presented at the Small Wind Conference, the annual event of the small wind industry. The subject of his talk was the Weaver 5, our 5 kW turbine that has now passed all testing required for certification to the AWEA (American Wind Energy Association) standard.
- In November, Weaver Wind was a finalist at the [Ocean Exchange](#) annual competition in Savannah GA for "innovative solutions" to environmental, economic, and social problems.
- In September, one of our local wind systems was featured as the [cover story](#) of *Home Power* magazine. This residential installation is comprised of a Weaver 5 wind turbine, 11 kW of solar PV, and lithium-ion battery energy storage. This hybrid system is robust enough to charge the owner's electric car as well as provide all his household's electricity needs.
- We began work on prototypes of two new machines—a 2 kW turbine, the Weaver 2, and a 15 kW turbine, the Weaver 15. The Weaver 2 will be a highly affordable wind system, while the Weaver 15 will be a larger machine intended for larger homes and small businesses. Both feature Weaver Wind's innovative Active Furling technology and advanced web-based monitoring and control.
- We completed renovation work and energy efficiency upgrades to our Production Floor which now houses a CNC milling machine and lathe. These machines have enhanced our in-house manufacturing capability and reduced costly and inefficient transport of components processed elsewhere.

