

TC CPI | Tompkins County Climate Protection Initiative

2021 TCCPI MEMBER ACCOMPLISHMENTS

Alternatives Federal Credit Union

- In 2021 we made 18 solar and energy efficiency loans for a total of \$217,286. Solar loans are back on the rise, increasing 67% as compared to the previous year. Note: our 2020 numbers were lower because most of our loan staff pivoted to assist in processing pandemic-related loans, grants, and services. Some of this shift in focus continued through 2021.
- Our rooftop solar panels continued to provide a substantial part of our electricity during the year.
- Alternatives incentivizes going digital for all member statements.
- In 2022, we are participating in a NYSERDA building energy audit carried out by Taitem Engineering.
- The staff “Green Team” continued working to improve energy efficiency and reduce waste, including efforts to compost our food and paper towels and reducing waste by adding bottle filling stations in last 2 years.
- In addition, many of our staff have remained on a hybrid home/office work schedule, which has reduced the number of us commuting to work alone in gas fueled, cars, and has reduced the overall energy consumption in the building due to fewer lights, small heaters, fans, computers, and other electronics running throughout the day.



Center for Community Transportation

The Center for Community Transportation (CCT) envisions a community where travel by shared and active transportation is healthy, safe, affordable, and convenient for all. The CCT's mission-focused services and activities include Ithaca Carshare, Bike Walk Tompkins (and its signature program Streets Alive! Ithaca), and Backup Ride Home, emphasizing social equity and environmental sustainability in this era of new transportation options and emerging mobility trends. CCT works with local transportation providers, educators, planners, decision-makers, advocates, and users to fulfill the mission of enhancing transportation access in our community while reducing its negative environmental and economic impacts.



Ithaca Carshare

- As a result of the shifted driving habits of new members and higher than average fuel economy, the use of an estimated **25,645** gallons of gasoline and **230** metric tons of carbon dioxide emissions were avoided in 2021
- **879** new Ithaca Carshare members reported that they would sell, delay, or avoid the purchase of **233** vehicles
- The Easy Access subsidized membership served 39 members with low incomes

- **1,510** members shared **29** vehicles and took a combined **19,747** trips totaling **308,578** miles
- Two Chevy Bolt Battery Electric Vehicles and three Chevy Volt Plug in Hybrid Electric Vehicles were added to the fleet, bringing fleetwide fuel economy up 28% over 2020 and 34% above the 2020 national average of 25.7 mpg (U.S. Environmental Protection Agency, 2020 EPA Automotive Trends Report)

Bike Walk Tompkins

- Advocated for municipal adoption of actions in the [Bicycling for Everyone](#) (B4E) Action Plan for Ithaca and Tompkins County
- As partner in the Tompkins Bike Network with Way2Go, offered monthly online gatherings on varying themes from winter biking to legislative advocacy
- Raised awareness about the benefits of biking to work/school & about safe streets efforts statewide
- Wrote numerous letters of support for bike- and walk-friendly infrastructure on roads and trails
- Participated in the League of American Bicyclists lobby day in Congress in March
- Hosted a virtual Streets Alive! Film Festival in March
- Offered a Bike Mentors volunteer program for outreach to underserved groups spring/summer
- Offered adult learn-to-ride classes to the community in spring/summer
- Offered monthly pop-up bike repair clinics and a community bike sale in collaboration with RIBs in August
- Hosted an in-person “Streets Alive! Ithaca” festival on N. Cayuga St. in September
- Led a community Winter Solstice Ride in December
- Worked with the City of Ithaca and obtained private funding for a community-run e-bikeshare
- Helped submit a successful grant application for Phase I planning for the \$7 million NYSERDA Electric Mobility Prize



Backup Ride Home

The Backup Ride Home program provides peace of mind for commuters who travel to work without a personal vehicle (bus, carpool, bike, etc.). Ithaca Carshare’s on-call staff facilitate free alternate transportation home if something unexpectedly happens that makes an original commute plan home impossible. In 2021, with stronger partnership with GO ITHACA in place, enrollment doubled to a total of 562. Seventeen calls were received, and twelve rides were provided.

Community Partnerships

GO ITHACA

CCT is a program partner with the Downtown Ithaca Alliance’s GO ITHACA transportation benefits program, offering development, operations, and oversight support to the burgeoning program, specifically in the development of transportation benefits packages and special services for low-income commuters and residents on the GO Easy Access plan. CCT also supports GO ITHACA working toward the creation of a Transportation Management Association (TMA), interfacing with development and transportation services stakeholders.

Transportation Equity Coalition

The CCT participated in biweekly meetings of the Transportation Equity Coalition, which solidified mission and vision statements in 2021 and secured funding for the implementation of a Transportation Needs Assessment to be done in 2022.

Citizens Climate Lobby, Southern Finger Lakes Chapter

Citizens Climate Lobby (CCL) is a nonprofit, nonpartisan, grassroots advocacy organization focused on national policies to address climate change. Our Southern Finger Lakes chapter draws members from Steuben, Chemung, Yates, Schuyler, Tompkins, Tioga, and Seneca Counties.



Citizens' Climate Lobby

- Held fourteen outreach events (presentations and tabling events)
- Had eight meetings with local community and business leaders
- Persuaded several local businesses to endorse the Energy Innovation and Carbon Dividend Act
- Contacted legislators 506 times

In 2021 members of our Southern Finger Lakes Chapter:

- Published nine letters and op eds in local papers including the Ithaca Times, the Finger Lakes Times, Binghamton's Press & Sun-Bulletin, Dundee's Observer, Dunkirk's Observer, Jamestown's Post Journal, and Penn Yan's Chronicle Express
- Participated in five lobbying events with Senators Gillibrand and Schumer, and Representative Reed

City of Ithaca



Department

- Hired Director of Sustainability, Dr. Luis Aguirre-Torres
- Redefined the Ithaca Green New Deal and established clear projects and targets for the next nine years
- Hired Sustainability Planner, Rebecca Evans

Energy

- Adopted the Finger Lakes Energy Compact with the United Nations, establishing direct renewable energy investment targets for the City, Town of Ithaca, and Cornell University
- Adopted the Ithaca Energy Code Supplement requiring net-zero construction for new buildings by 2026
- Released an RFP that eventually secured \$105 million to electrify all 6,000 city buildings through the Energy Efficiency Retrofitting and Thermal Load Electrification Program
 - Began to identify priority buildings through partnership with Tetra Tech, Historic Ithaca, Cornell University, and Bloc Power
- Launched program establishing the process of implementing community choice aggregation for City of Ithaca residents
- Proposed a 25-acre solar array in the southwest of the city that would have a proposed generation capacity of 5 MW and 10 MW battery storage capacity with Nexamp
- Launched an electrification impacts assessment with Siemens
- Completed a comprehensive greenhouse gas inventory for municipal operations



Engagement

- Launched the 1,000 Conversations project that aims to engage the community in a visioning exercise for 2030

- Launched the Power Lunch series that seeks to educate residents and humanize the technical aspects of the IGND and renewable technologies
- Collaborated with the local chapter of the Climate Reality Project to begin shaping an IGND Scorecard to track progress to IGND goals
- Presented decarbonization plans to several municipalities, media outlets, and regional organizations
- Participated in the NY Climate Impacts Assessment to help leaders understand the social and economic impacts of climate change

Workforce Development

- Established partnerships with Cornell Cooperative Extension of Tompkins County and the training system “Roots of Success” to begin development of a regional workforce training ecosystem
- Deployed regional partnerships to apply for federal EDA funding to support the Green Jobs Corridor, a regional workforce development project and wraparound infrastructure
- Secured funding to establish a local workforce development program modeled after the Roots of Success training system

Transportation

- Established partnerships with private financiers to develop a multi-stage strategy to electrify the municipal fleet
- Established relationships with EV manufacturers to begin exploring vehicle options
- Worked with Alturus and CCT to define a funding strategy and deploy a shared electric bike program
- Established relationship with Urban Cycle Solutions to develop a multi-stage approach to promote micro-mobility and reduce single-passenger vehicle traffic

The Climate Reality Project, Finger Lakes Greater Region NY (FLGR-NY) Chapter



The Finger Lakes Chapter of Climate Reality includes inspired climate activists located in the Finger Lakes and Southern Tier regions of Central NY. We are working to unify climate activism over a fairly widespread area, with plans to improve public awareness of the climate emergency and to actively promote the completion of the goals of the Climate Leadership and Community Protection Act (CLCPA) for our region. The Chapter

also aims to reach out and work cooperatively with other active environmental, climate justice and sustainability groups within the region.

Website: <http://climaterealityfingerlakes.org/>

LinkTree: <https://linktr.ee/ClimateRealityFingerLakes>

Facebook: <https://www.facebook.com/groups/climaterealityfingerlakes>

Twitter: <https://twitter.com/FlgrNy>

- Finger Lakes Chapter started participating in TCCPI in December 2020. Over 2021, the Chapter grew from 36 members to 79 members, of whom 39 were trained Climate Reality Leaders.



It is a **mission-oriented, coordinated and collaborative** approach to **carbon neutrality by 2030**. It is a transformative effort capable of altering the economy, enabling a **new social contract** and redefining the relationship between government and society, as well as between the planet and the economy.

It is a **people-first approach focused on long-run outcomes** that **elevate social capital**, creating a new future, one where **equity, justice and sustainable prosperity** are at the core of our transition and transformation strategy.

It requires the **mobilization of public sector capabilities** and the participation of all sectors of society for the **transition to a new economic model**.

The **Green New Deal is a globally-driven imperative**, demanding the engagement of the community and a **holistic approach** to policy, investment and **stakeholder governance**.

- The Chapter continued to hold regular monthly meetings with speakers on a variety of topics such as the Biden Scorecard, EVs, Climate Solutions Accelerator, Heat Smart, Cryptocurrency and Blockchain, Plastics and Climate Change, Backcountry Hunters & Anglers, Ithaca Green New Deal, “The Story Of Plastic” film discussion, Anaerobic Digestion, and Federal Legislation. Our Book Club had discussions of nine different books over the course of the year.
- As part of the federal lobbying efforts for climate legislation in 2021, our Chapter took part in Zoom meetings with the offices of Senators Schumer and Gillibrand, and Representatives Reed, Katko, Morelle, Tenney, Jacobs, and Higgins. In 2022 we will continue our federal effort as well as increase our activity with NYS legislation, especially with the Renewable Heat Now campaign and the proposed moratorium on proof-of-work cryptocurrency mining.
- For the September 2021 TCCPI Meeting, Tom Hirasuna and Diane Stefani presented an overview of the IGND Scorecard project which the Chapter is working on. A follow-up presentation is planned for 2022 when the scorecard becomes available.
- In addition to the IGND Scorecard, the Chapter started a working group on plastic supply/waste issues and initiated some actions to encourage Wegmans to increase their efforts in reducing excessive plastic packaging.

Cornell Cooperative Extension – Tompkins County

Clean Energy Communities (and Climate Smart Communities)

CCE-Tompkins staff leads the Southern Tier program

- 14 new communities designated as Clean Energy Communities (4 actions completed) and each received a \$5,000 designation grant
- 16 community campaigns completed (Community Solar = 8; Clean Heating and Cooling = 8) and each awarded a \$5,000 action grant
- Three communities passed NYStretch Code and earned \$5,000 action grants
- One community (Montour Falls) reached 3,000 points and was thus awarded a \$10,000 grant
- Total of \$175,000 awarded to the Southern Tier in 2021
- Helped several communities across the region develop climate action plans and natural resource inventories, among other climate-related planning documents
- The program works with 88 communities across the Southern Tier Region and is now in its second round; over 300 “high-impact” actions completed and more than \$260,000 awarded to the region



Ithaca Green New Deal

The Energy & Climate Change Team continued to work with City of Ithaca staff and other key stakeholders across the community to develop strategies for broad education and outreach around the IGND. Once plans with other groups leading the IGND decarbonization effort have been finalized, CCE-Tompkins will be leading the engagement efforts to fully decarbonize the city by 2030.

LMI EV Program

Growing out of EV Tompkins, the Energy & Climate Change Team collaborated with Way2Go, Ithaca Carshare, Ridge Road Imports, and Clean Communities CNY, under a program led by Energetics, to identify and work to address the barriers to the wider adoption of EVs, including growing the local used EV market, working with local lenders to provide more accessible financing options, and providing education and outreach to underserved populations (with a focus on low- and moderate-income [LMI] community members).

Ag Energy

CCE-Tompkins developed a web site and set of program materials related to best practices for reducing energy use in agriculture. Resources for CCE educators across the state to engage with farmers in their communities include fact sheets, the web site (<https://agenergyny.org>), and a Moodle Course.

Induction Cooking

In 2021, the Energy & Climate Change Team worked with CCE-Tompkins Nutrition Team staff to deliver a series of cooking classes featuring portable single-burner induction cooktops in order to introduce people to the technology through a relatively inexpensive, easy-to-use appliance.

Other Programs and Activities:

- Ag & Solar: The Energy & Climate Change Team Leader helped coordinate a summit over two half days to educate staff across the statewide CCE system on the major issues around large-scale solar development, particularly as it impacts active agricultural land. This is part of an ongoing program that includes collecting existing—and developing new—resources and bringing in speakers to inform CCE staff statewide so they can better assist their communities with this rapidly evolving issue.
- Clean Energy Engagement Program (CEEP): The CEEP program in the North Country is led by staff from CCE-Tompkins and serves low-income households in that region.
- Radon: CCE-Tompkins staff continued to provide information and resources to the community on the dangers of and mediation strategies for radon.
- CCE-Tompkins Energy & Climate Change Team staff continued to populate and maintain sections on the CCE-Tompkins web site covering topics including Heat Pumps, Weatherization and Building Efficiency, Solar and other Renewable Energy Sources, Electric Vehicles, Induction Cooking, Green Building, Heating with Wood, and Radon.
- Energy & Climate Change Team Leader sits on the Ithaca 2030 District Advisory Board and the Tompkins County Climate and Sustainable Energy Advisory Board.

Way2Go

Promoting Transportation Innovation & Exploring On-Demand Transit Solutions

To help address rural transit deserts and rural dependency on single-occupancy vehicles (SOV) in Tompkins County, TCAT, Gadabout, Way2Go, and Urban Mobility partnered in 2020 to launch an app-based, on-demand public transportation service, Tconnect. The service was to serve rural communities in the County. First started as a weekend service in the Lansing/Etna area, it was expanded to a weekday service in the Dryden/Freeville area in Fall of 2021.



In Lansing/Etna, over 700 people initially created an account on the Tconnect app, and the service provided a total of 1495 rides during the first year of the pilot. Way2Go helped create and disseminate a survey to Tconnect riders about their use of the service. 100% of respondents did not have regular access to a vehicle. The three main uses of the Tconnect service were to get to work (56.3%), connecting to TCAT routes (50%), and to get to shopping centers (43.8%).

The Dryden/Freeville weekday service did not see any significant ridership since its launch this past fall despite continued and varied outreach by partners across the service area. That service ended in December 2021 and TCAT and Way2Go will be exploring the reasons why the service was so popular in one area of the County and not another. Way2Go continues to support innovative ways to reach rural residents with transportation services and sees on-demand service as an important component. On-demand public transit remains a focus at TCAT and is an integral part of its Transit Development Plan, as a way to alleviate rural transit barriers and fill in service gaps.

Inclusive Electric Vehicle Education & Overcoming Barriers to EV Ownership

In coordination with our CCE-Tompkins Energy Team, Way2Go staff interviewed nine partner organizations including community action groups, advocacy groups, food pantries, and subsidized housing authorities, to understand how EVs might benefit low- and middle- income rural, suburban, and urban households. With that information, we produced basic EV outreach materials and piloted two free Tune Me Up car buying classes with Ridge Road Auto who sells used EVs and Alternatives Federal Credit Union. The classes addressed costs and benefits of car ownership and compared gas vehicles with EVs.

In collaboration with TCAT and Ithaca Carshare, CCE staff partnered on four events, offering opportunities to see EVs, plug them in, test drive them, and speak with EV commuters. We reached several hundred rural and urban residents who are low or middle income. Most participants were new to EVs and surprised by their performance and the substantial fuel and maintenance savings. Many came to the events with questions or misinformation, but subsequently expressed interest in owning an EV, especially after a test drive. Way2Go staff emphasized that EV prices would likely remain high until the global supply chain recuperates, demand drops, and the used EV market expands. In the meantime, Way2Go and our partners offer reliable resources to learn about and budget for a used EV.

Move Together NY: Facilitating Regional Solutions

The staff member for our Move Together NY project served as a mobility Champion, educating others at the regional and national levels on mobility options beyond single occupancy vehicles. She wrote a piece for the National Center for Mobility Management, “Rural Rideshare: Sustainability Beyond the Pilot.” Her conclusion: “Rural rideshare has potential for success by offering additional options where transit is not practical, but knowing who all your customers are, and matching supply with demand is critical to that success.”

Cornell University

The Sustainability Tracking, Assessment & Rating System (STARS) is a comprehensive and transparent reporting framework for universities to track their sustainability performance. Cornell annually reports on hundreds of metrics related to campus operations, education, and more; it currently holds the highest possible rating: **Platinum. In 2022 Cornell achieved a third consecutive Platinum Rating.** The overall score is 86.35 out of 100, an improvement of 1.25 points over the previous year. [Browse the 2022 Full STARS Report](#)



- Cornell University is the only campus in the world to have received a Platinum Rating three times consecutively in three consecutive years. Of the four major areas of reporting, this year Cornell received a score of 95.76% in Academics, 96.85% in Engagement, 64% for Operations, and 80.29% for Planning and Administration, as well as a full score for innovation credits.
- As of Spring 2022, only nine institutions in the world hold a Platinum Rating. Previous to receiving the first Platinum Rating in 2019, Cornell had held the longest-running Gold Rating for 8 consecutive years. The overall score has increased 23% since reporting began in 2012.
- **Areas of Achievement**
 - **Perfect Scores**
Full points were achieved in 45 out of 68 reporting areas. Cornell is first in New York state for: Buildings, Campus Engagement, Coordination & Planning, and Research.
 - **Open Access to Research**
The [Cornell Library's Open Access Fund](#) advances access to scholarly publications, supporting the idea that sustainability research must be open-access in order to accelerate necessary and urgent solutions across institutions and communities.
 - **Learning Outcomes for Sustainability**
100% of Cornell students graduate with sustainability [learning outcomes](#) as part of [College-level learning outcomes](#). Cornell also requires all incoming students to complete Mission Sustainability, a [sustainability assessment and learning module](#). The module measures sustainability beliefs and literacy and encourages students to get involved in sustainability and climate justice during their Cornell careers.
 - **Sustainability Courses and Majors, Minors**
[16% of all courses](#) offered have a sustainability focus or content. [40+ living laboratory projects](#) take place each year utilizing the campus as an innovation hub for sustainability

solutions. Students can major, minor, or concentrate in 87 programs focused on sustainability.

- **Research**

37% of employees and 97% of departments are currently engaged in [sustainability-focused research](#), including [619 Faculty Fellows](#) through the Cornell Atkinson Center for Sustainability. The Fellows are working to identify and advance innovative sustainability research and initiatives at Cornell.

- **Commuting**

83% of students use sustainable transportation such as walking, biking, or carpooling as their primary means of commuting to and across campus.

- **Food Purchasing & Compost**

90% of dairy purchases and 27% of fresh produce are grown and/or processed within 250 miles of campus. Dining is also working to increase the proportion of plant-based food and beverages. Over 1,000 tons of food waste are [composted annually](#) by Farm Services, and composting is available in all residential communities as part of the [Residential Compost Program](#).

- **Note on STARS Benchmarking**



STARS is a benchmarking tool, and therefore represents a baseline by which campuses can compare and work towards progress in a comprehensive sustainability framework. Comparing scores and progress to other similar institutions (for instance, campuses with over 14million sq. ft, research institutions, or campuses with a similar population and climate) is useful, but not a complete picture of how progress should be measured or achieved. Each campus, including Cornell, has a unique culture and operational framework that require our community to innovate and create a culture of

sustainability in ways that may not be captured by STARS. Even if our campus was able to achieve a perfect STARS Score, it would be the beginning of a leadership journey in sustainability, not the end.

- Cornell's [Mission Sustainability](#) course now reaches all incoming students. Through it, students discover how sustainability and climate change is integrated into campus operations and the student experience at Cornell. This course introduces ways to live, learn, and engage in sustainable change as a Cornell student.
- As of early 2021, Cornell's Energy Conservation Initiative (ECI) projects had saved the university a cumulative 2.5 billion MMBtus, which is **equivalent to taking our Central Energy Plant completely off-line for one year.**
 - Cornell uses the [Green Revolving Investment Tracking System \(GRITS\)](#) to track and calculate project-level energy, financial, and carbon savings data for all ECI projects and efficiency improvements. Check out [Cornell's GRITS public dashboard](#).
- Relaunched the sustainable event certification program: <https://sustainablecampus.cornell.edu/take-action/sustainable-events>
- The Cornell Institute for Climate Smart Solutions' online course on climate literacy and communication has reached 2,500+ citizens from 65 countries since launching in 2017
- 75 Green Offices and 15 Green Labs certified across most campus units
- Renewable energy offsets 20% of campus annual electricity, and on sunny afternoons our renewable energy projects are generating more power than the Ithaca campus is using.
- Total campus waste is down one-third in the last five years; reuse & reclamation doubled in last year
 - In Fall 2021, our **Compost Managers** collected over one ton of food scraps from residential buildings and made composting accessible to over 6,500 students living on-campus.
- Winter Energy Setback avoids an average of ~\$100,000 in electricity costs each year

Downtown Ithaca Alliance

- In 2021, three dog-waste bag dispensers that include biodegradable bags were installed on the Commons pedestrian mall by the Downtown Ithaca Alliance (DIA).
- Solar trash compactors along The Commons help to reduce the carbon footprint. These compactors compress their contents to allow more trash per bag so they don't have to be emptied as often. Fewer collections mean cost savings for labor, fuel, and maintenance and reduced greenhouse gas emissions. Powered by the sun, these eco-friendly compactors operate in every kind of weather — snow, rain, or shine.
- Downtown Ithaca is working with Tompkins Consolidated Area Transit (TCAT) and the Community Center for Transportation to craft a grant proposal that, if awarded funding, will bring more electric mobility services to our community and to some of our surrounding neighborhoods. More of these services means a reduction in our community's carbon footprint.
- Downtown's seasonal vinyl banners located on the Commons light poles can be upcycled. For example, in 2020, we transformed our Chili Cook-Off banners into aprons.
- Decorative lighting in Downtown Ithaca is energy efficient. The DIA uses LED snowflake lighting to decorate the poles on The Commons during the holiday season. Our holiday tree is also made of energy-efficient LED lighting.
- Twelve of our businesses — Alley Cat Cafe, Thai Basil, Taste of Thai, Casablanca Pizzeria, The Greenhouse Cafe and Cocktail Lounge, Lou's Street Food, Sangam Indian Curry, Capital Corner Restaurant, Gorgers, Jimmy John's, and Mercato's — support Zero Waste Tompkins' Ithaca Reduces program. These restaurants and eateries support the program by asking customers to bring their own containers and cups.
- In 2021, the Downtown Ithaca Alliance partnered with Urban Core LLC and Bike Walk Tompkins to bring a community bike repair station to Press Bay. By providing tools for people to make simple bike repairs we're making it safer for people to bike around the community. By making the urban core more bicycle-friendly, we hope to see more cyclists and a reduction in carbon emissions. This project was funded in part by Sustainable Tompkins.
- The DIA, in collaboration with the Center for Community Center for Transportation and Tompkins Consolidated Area Transit (TCAT), is currently operating a Transportation Demand Management Association (TDM) program called GO ITHACA aimed at helping employees and residents in the urban core forgo their single-occupancy vehicles and instead use more efficient modes of transportation, walking, biking, carpooling. This program helps reduce carbon emissions by hundreds of pounds and promotes health, social engagement, and employee & resident goodwill by incentivizing commuters and residents to walk, bike, and carpool to get to and from work and complete errands. New York State Department of Environmental Conservation grant funds were applied to capitalize on a project that will create individualized transportation plans along with a suite of new transit services (including remote parking) to workers and residents in the urban core.
- Downtown Ithaca continues to be a "walker's paradise" where daily errands can be completed without using 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 98 out of a possible 100, a one-point increase from 2020. Our Walk Score is just 2% points shy of Greenwich Village; by contrast, Lansing's walk rating is 38, Trumansburg's ranking is 37 and Cayuga Heights ranks at 29.
- To help reduce the use of plastic and paper bags in the urban core, many businesses in the downtown community now sell reusable, environmentally friendly shopping bags. In 2021, for the holiday shopping season, the DIA introduced its own reusable shopping bag for our stores to distribute to holiday shoppers.



- Our events and GO ITHACA teams are exploring the option of offering bike parking at its special events to help in local efforts to lessen the number of vehicles traveling into the urbanized core, thus reducing greenhouse gas emissions in the community.

- Press Bay Alley, two blocks southwest of the Ithaca Commons, offers a Food Hub where people



can pick up fresh produce, baked goods, and other items. The Alley also serves as a pickup spot for the Full Plate Farm Collective CSA (Community Supported Agriculture). CSA 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 12 independent, locally-owned stores that specialize in reused and recycled products. Such stores include SewGreen, Pastimes Antiques, Trader Ks, Autumn Leaves Used Books, and Home Green Home. Shopping at reuse stores means less additional energy was used to produce new goods. Another business, The Watershed, located in the Downtown Ithaca Business Improvement District, is committed to reducing environmental waste. Behind the bar, they use high-end citrus products instead of fresh fruit to decrease food waste without compromising on drink quality. In a standard bar, it takes about 4 pounds of ice to chill glass and shake a cocktail, but at The Watershed many of the drinks are built in the glass to lessen the amount of ice and water used in the bartending process. With a menu constantly changing based on what’s available, Watershed opted for digital menu boards instead of going through a wasteful cycle of updating printed menus.
- 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) will have a carbon footprint of 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 continues to work on a transit corridor plan to improve bus service between Downtown Ithaca, campus communities, and other cities. Downtown Ithaca is the regional transit hub for Tompkins Consolidated Area Transit (TCAT), which was recently recognized by its industry peers as being the best transit system of its size in North America. TCAT contributes greatly to the community, serving as an alternative to car ownership, thus reducing traffic congestion and greenhouse gas emissions. It saves the cost of building parking facilities. Its fleet currently includes eight electric-diesel hybrid buses.
- Downtown projects such as the additional art bike racks that were installed thanks to a grant from a local foundation will decrease dependency on automobiles and increase walkability and access to public transit.
- The DIA has implemented composting and recycling systems for its major downtown events such as the Apple Harvest Festival, the Summer Concert Series, Chowder Cook-Off, and Chili Cook-Off, which are attended by over 100,000 locals and tourists. Local service organizations like the Master Composters from Cornell Cooperative Extension have helped to oversee these composting stations.
- The DIA also offers and encourages the use of reusable cups during the Summer Concert Series and offers reusable spoons and encourages attendees to bring their own reusable spoons for its Chowder Cook-Off and Chili Cook-Off. The City Centre



project includes many green features such as energy-efficient windows and lighting and classic sustainable appliances like low-flow toilets. City Centre is also eliminating the need for venting to accompany clothes dryers, which are outfitted with heat pumps (standard practice in Europe, but a burgeoning innovation in the United States).

- 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. Its waste management system, which reduces food scraps to a grain-like compostable material to be used by the farm, is the first of its kind in the U.S.



- Harold's Square on the Commons is an energy-efficient building aligned with the values of the local community and offers apartments that are more efficient, cost-effective, and comfortable. Designed per NYSERDA and ENERGY STAR® standards, Harold's Square provides the following: efficient heating and cooling system and hot water heater; improved building envelope and air-tight compartmentalization of apartments; Energy Star appliances that use 10-30% less energy than conventional models; efficient LED lighting; water-saving fixtures; and investment in off-site 60.3-kilowatt solar farm to further offset fossil fuel-generated power usage. Overall, the building will use at least 35% less energy than a similar type of conventionally built building.

- Downtown Ithaca is home to the headquarters of the Center for Community Transportation which houses Ithaca Carshare, a non-profit car-sharing service with a growing fleet of fuel-efficient vehicles shared by over 1,500 members. Users can save hundreds of dollars per month in avoided gas, maintenance, and insurance costs while reducing traffic congestion, pollution, and space and money devoted to parking. Independent studies show that for each Carshare vehicle, over 15 privately-owned vehicles come off the road.
- Bike Walk Tompkins, a program managed by the Center for Community Transportation, has taken the lead in bringing a bike-share program to downtown Ithaca as part of its Blueprint for Better Bicycling program. As the number of people who use this bike-share program increases, we'll see a reduced number of people using their vehicles to travel around downtown, thus reducing greenhouse gas emissions in our area.

EcoVillage at Ithaca, Inc.

- EVI, Inc. continued to pursue its mission in 2021 to steward the 140 acres outside the village area for the preservation and conservation of open space, the development of sustainable agricultural practices on this land, and the promotion of sustainable high-density community living.



- Throughout the year, the EVI, Inc. board worked closely with the four organic farms located on the nonprofit's land: West Haven Farm, Groundswell Center for Local Food and Farming incubator farm, Kestrel Perch, and Three-Story Farm.
- Among this year's conservation activities, water and trail management as well as increasing biodiversity by replacing invasive shrubs with native species featured prominently.
- In addition, there were ongoing discussions about invasive species and the board developed a protocol for dealing with jumping worms that have appeared increasingly in recent years.

- The board also began exploring the possibility of working with two EVI residents on the development of clustered, affordable housing along Westhaven Rd. to accommodate several Burmese refugee families who grow and harvest crops at the Groundswell incubator farm.

EMPEQ

- EMPEQ automates traditional workflows for energy engineers and commercial contractors through an integrated, AI-enabled mobile & cloud-based app that digitizes customer equipment data and arranges financing solutions for their customers with the just the click of a smartphone's camera. Our mission is to reduce greenhouse gas emissions at scale by animating the energy efficient asset market by providing contractors and engineers automated site survey capabilities and point of sale (POS) financing for customers.
- Despite the pandemic, 2021 was EMPEQ's most successful year to date. Revenues and investments in the company both increased dramatically over the prior year and the company is a far stronger position than it ever has been since its inception.
- The company's Fast Site Survey™ product came out of beta in July complete with our revolutionary One-Click Capture™ technology; this was the final commercialization of our artificial intelligence (AI) tool to automatically extract and digitize critical equipment information (e.g., manufacturer, model, serial number, and many others) with just a single click of a smartphone's camera.



- Between July and our end of year, we experienced 486% user growth; we took this as a strong indication of product market fit. We have also received numerous customer testimonials indicating that the product is saving our customers anywhere from 60-80% of the time they spend on energy audits, site surveys, and equipment audits. This speaks to the potential of this tool to rapidly increase the capacity of energy auditors throughout North America in their quest to map out the possibilities for decarbonization of the built environment. Our current customers include some of the largest engineering and mechanical contracting firms in the world.
- Regarding financing, EMPEQ and its subsidiaries financed a total increase of >500% in commercial equipment projects in 2021, despite continued supply chain challenges set in motion by the pandemic. Each of these projects will have tremendous positive impact on the carbon footprints of the buildings that were retrofitted.
- EMPEQ also was awarded a [Climate Justice Fellowship](#) in December. We used this \$40,000 award to hire a Project Manager in January. Not only is this position critical for continued product improvement and augmentation, but, more importantly, we're thrilled to provide this opportunity to a member of one of New York State's underrepresented communities.
- The company raised >\$1M in equity or equity like investments over two rounds; this made 2021 our best fundraising year yet.

Finger Lakes Land Trust



During 2021, the Land Trust accomplished the following in greater Ithaca/Tompkins County:

- Completed nine land protection projects within the Cayuga Lake watershed, securing more than 800 acres of undeveloped land. Four of these were located within the Six Mile Creek watershed, the source of Ithaca's drinking water supply
- Partnered with the Tompkins County Soil and Water Conservation District and the NSYDEC to expand vegetated buffers along Six Mile Creek in conjunction with the completion of perpetual conservation easement agreements

- Acquired the new Sims-Jennings Preserve in Lansing, which features more than 4,000 feet of shoreline on Cayuga Lake and 200 acres of associated uplands
- Acquired a key parcel bordering State Route 13 in the Town of Ithaca that serves as a popular access point for the Finger Lakes Trail and borders Robert Treman State Park and the Land Trust's Tapan Mitra Preserve
- Elsewhere in Tompkins County, completed conservation easements on properties featuring frontage on the Owasco Inlet and the West Branch of Owego Creek
- Successfully secured a contract to purchase the 470-acre Bell Station property on Cayuga Lake – closing scheduled for early June



Finger Lakes ReUse

In 2021, Finger Lakes ReUse celebrated the grand opening of our expanded location, the ReUse MegaCenter at the Triphammer Marketplace. This is now one of the largest reuse business locations in upstate New York – more than 30,000 square feet combined, or a half-acre of retail space. The expanded ReUse MegaCenter received new flooring, and several of our departments were rearranged with new layouts.

The eCenter computer refurbishing program was relocated from the Ithaca ReUse Center to the MegaCenter, where there is now improved space for electronics processing, refurbishing, and



storage. At the Ithaca ReUse Center, donation drop-offs were relocated from the nearby garage to our main retail building, which helped with overflow capacity and streamlined donations processing and material handling. These changes have been a huge accomplishment for us this past year, in the face of continued increasing donation volumes from the public, helping us to become more efficient in our operations for community reuse services.

unique art installations reflecting on the themes of the Sustainable Development Goals, located on the interior and exterior of the Ithaca ReUse Center, and on one of our box trucks.

We celebrated the completion of our Mural Project, a collaboration started in 2019 with Ithaca Murals and Words Into Deeds. Now finished are five beautiful,

In addition, a major portion of our backstock of used clothing was sorted through by our team of summer youth workers, and we held a tent sale at the Ithaca ReUse Center with the clothing items priced at \$1 or less. At the end of 2021, we started a collaboration with Cornell University's Circular Construction Lab, Historic Ithaca/Significant Elements, and the Local Laborers 785 to deconstruct several buildings in Collegetown in order to maximize salvage of usable materials. We maintained 77 full-time equivalent jobs and added 16 new people to our team. We generated over \$2 million in sales revenue of used materials, a total sales growth of 37% over 2020.

In 2021, Finger Lakes ReUse:

- Completed a Mural Project with 5 local artists in partnership with Ithaca Murals, Words Into Deeds, and more
- Celebrated the grand opening of the ReUse MegaCenter at Triphammer Marketplace, more than doubling our retail capacity in Lansing
- Received awards and honors from multiple groups:
 - "Best Thrift Store" in Ithaca Times' Readers' Poll
 - "Best Department Store" in Ithaca Journal's Readers' Poll

- “Recovery Friendly Employer 2021” by the Alcohol & Drug Council of TC
- Recycling Leadership Award “Lifetime Achievement” for Executive Director Diane Cohen, New York State Association of Reduce, Reuse, and Recycling
- 2021 Town of Ithaca Conservation Award
- Assisted a record 333 households and 17 organizations in need through the ReUse Materials Access Program
- Maintained a staffing level of 77 employees
- Collaborated with the Alcohol & Drug Council of Tompkins County and Significant Elements on a “Reuse for Recovery” salvage sale event
- Worked with 13 apprentices through ReUse Skills and Employment Training (ReSET)
- Introduced the ReUse Pilot Training Center & Warehouse for our ReSET programs, in addition to the ReUse Caboose for pop-up sales such as the “Last Chance Saloon” for used items
- Diverted an estimated 1,023 tons of materials through our three locations, including furniture, building materials, housewares, electronics, books, textiles, appliances, and more

Fossil Free Tompkins

The pandemic continued to cast a shadow over FFT’s activities in 2021 save for a few moments. Nonetheless, we stayed busy enough...

NYSEG – Following approval of the NYSEG rate case by the PSC in late 2020, NYSEG was obligated to undertake various studies related to the transition away from fossil fuels. FFT provided feedback on the scoping plans for NYSEG’s Grid Modernization Study, Depreciation Study, and Gas Resiliency and RNG study. NYSEG was not obligated to include the recommendations we made. Results of these studies will inform NYSEG’s next rate case, which will get underway May 2022.



Lansing Non-Pipe-Alternative – In June 2021 the PSC approved the projects NYSEG had selected to be funded for the Lansing NPA project. Of special note is the fact that the projects did not clear the Benefit-Cost-Analysis test. In other words, based on NYSEG’s calculations, it would have been cheaper to install the mini-compressors rather than fund the NPA projects. Also, by NYSEG’s estimates the projects would not fully remedy the reliability concerns on really cold days. Nonetheless, both NYSEG and PSC agreed the projects should go forward. As of April 2022, none of the projects are yet underway.

Renewable Heat Now Coalition – FFT continued active participation in the RHN coalition. Our efforts included collaborating with other RHN members on comments in response to the PSC’s whitepaper on Gas Planning. In addition, FFT submitted our own comments that presented our unique insights gained as a result of our Lansing NPA project. RHN undertook an enormous project to draft legislation to revise Public Service Law to allow utilities to comply with the mandates of the CLCPA, and FFT was part of that drafting process.

Cryptomining – Our efforts to halt cryptomining accelerated markedly in 2021 thanks to the amazing leadership of Seneca Lake Guardians, Earthjustice, and Assemblymember Dr. Anna Kelles. FFT first flagged concerns about cryptomining in 2020 when a case came before the PSC to allow the Greenidge Power Plant on Seneca Lake to begin cryptomining at their facility, an action that would markedly increase the plant’s operation and GHG emissions. In early 2021 we had a conference call with DEC leaders to educate them about the problem. In subsequent months, we talked with counsel to Senate Environmental Conservation and Energy Committees to discuss legislation, participated in meetings with Governor Hochul’s staff, and provided comments to several working groups of the Climate Action Council. We spoke to incoming NYC Mayor Adams’ tech team about the climate impacts of cryptomining and provided written comments to the NYS legislature. In addition, we gave several webinars on the issue. Thanks to SLG’s leadership, the StopCryptomining coalition has expanded its membership, and a national Stop Cryptomining coalition was established.

Bell Station – In 2021, the NYSEG owned Bell Station property along the shores of Cayuga Lake, north of the Cayuga Power Plant, was put up for public auction. This parcel, which included nearly 4,000 feet of unspoiled shoreline along Cayuga Lake was a local environmental treasure, and the community was in an uproar over the prospect of seeing the parcel sold to the highest bidder. NYSEG maintained that they

were required to conduct a public auction under PSC rules. The Finger Lakes Land Trust had long been interested in purchasing the parcel and began a campaign to enable NYSEG to sell to FLLT as the DEC's agent. Assemblymember Kelles jumped into action and had multiple conversations with the DEC and Governor Hochul's office. FFT worked behind the scenes, conducting legal research into NYSEG and PSC's obligations regarding the public auction. We found a notable exception to the usual requirement since NYSEG ratepayers had not paid for the Bell Station property; hence NYSEG was not under obligation to achieve the best price to reimburse them. This information was pivotal in allowing NYSEG to halt the public auction and instead negotiate a price to sell the parcel to the FLLT, which will preserve and manage it as a public recreation area.

Get Your GreenBack Tompkins

Energy Advising



While the pandemic significantly reduced the number of people, we were able to engage and support through in-person outreach, we still reached over 6,000 people using a variety of approaches, including online presentations, television interviews, and referrals from partners. We supported almost 600 people in taking action, the vast majority of whom are households with limited income (under 80% of the area median

income). The actions are mostly focused on whole home energy retrofits—insulating and air sealing homes to reduce heating load—but also include renewable heating system installs, going solar, and purchasing electric vehicles. The numbers below from our work in Tompkins County and the Southern Tier region show our cumulative impact from January 2020 through December 2021.

Cumulative Impact (2020-2021)			
	# Reached	# Supported	# Actions Taken
2020	3,622	1,037	328
2021	2,518	546	244
TOTAL	6,140	1,583	572

These numbers include those from GYGB staff and Energy Navigator volunteers, as well as one full-time and several part-time staff funded exclusively through the NYSERDA CEEP program, which is coordinated by GYGB staff.

These numbers are only slightly lower than our all-time high of 368 actions taken in 2019, the year before the pandemic began. Our continued impact demonstrates both the creativity of our small team, and the fact that we are now an established entity and do not have to rely as much on outreach, as people and partners are familiar with our work, and provide referrals or seek us out directly.

We are also proud that the numbers of people reached, contacts supported, and actions taken for our eight-county region are the highest in the state. When compared to the nine other economic development regions through which NYSERDA organizes the work of the Community Energy Engagement Program (CEEP), our results were both the highest in absolute terms, as well as the most effective per dollar spent. Comparing results from the beginning of the program in 2018 through fall of 2021, our Southern Tier region had registered 1,031 actions at a cost of \$386 per action (calculated by dividing the funding received by the number of actions registered). While we were among the regions that received the least amount of funding from NYSERDA, the next highest region's totals were 365 total actions, and a cost of \$1,070 per action—that is, three times less effective.

These actions not only contribute to a decrease in household carbon emissions, but also represent a significant financial investment in our local economy. The actions account for a combined total of close to \$4.8 million spent locally on home energy improvements, with the greatest portion, over \$3.6 million, leveraging infusions of grant funds from state, federal, and utility programs. Every dollar our staff received from NYSERDA and the Park Foundation to do this educational work generated over ten dollars in

outside investment in clean energy actions. The financial impact is significant. Most of the cost of energy efficiency work is labor, and thus these figures also represent dozens of living wage jobs in the region.

Largely due to the success of our efforts in the Southern Tier region, NYSERDA asked our office to take on the coordination of the CEEP work in the Central NY region after it was dropped by another agency. The GYGB coordinator agreed to manage the work and trained four staff from Cooperative Extension agencies in other counties in that region to conduct the outreach and oversee much of the management, while he continued to coordinate the overall work. Note that the numbers provided above do not include those from Central NY, where thousands more were reached in those five counties.

Others have also noticed the effectiveness of our energy advising program. The GYGB coordinator has been asked to join various NYSERDA task forces, including one on Energy & Equity, invited to an award panel and to present at a statewide energy-related conference, and staff have provided training to community energy advisors in other regions. While the CEEP program is slated to end in June 2022, the work is expected to continue with an expanded team through a larger NYSERDA program called Regional Clean Energy Hub (more on this below).

The PowerHouse

After years of planning and fund-raising, the tiny home PowerHouse was completed and has been active for over a year, providing support with general outreach even as we continue to develop fee-for-service programming for schools. Over 680 adults and 500 youth have visited the tiny home and, as hoped, the tiny home has provided support to many partners' public presence and outreach efforts, including HeatSmart campaigns in several regions (photo on the left shows outreach in the Town of Dryden), the NYSERDA Community Energy Engagement Program, the City of Ithaca, Historic Ithaca, and others. Several videos were developed as complements to the in-person experience, which are included on our companion PowerHouse website. GYGB staff and an intern also worked with Sustainable Tompkins to develop a custom poster to advertise the Finger Lakes Climate Fund, our local carbon offset fund (see image below).



Energy Navigators

We were successful in securing NYSERDA funding to support the expansion of the Energy Navigator program. The original curriculum was revised to make it relevant statewide (previously it was centered on Tompkins County), and four staff from other Cornell Cooperative Extension offices throughout the state were trained to facilitate the training and manage volunteer efforts. They worked with over 40 volunteers in St. Lawrence, Chemung, Dutchess, Sullivan, and Ulster counties. Despite the ongoing pandemic, the volunteers reached over 5,700 individuals with messages about energy efficiency and clean energy through neighbor-to-neighbor discussions, tabling at festivals, and outreach at food lines.

Locally, another cohort of 11 volunteers primarily based out of Tompkins County, representatives of 2 community partners (the Newfield Public Library and the Paleontological Research Institution), and 3 staff from other Cornell Cooperative Extension associations completed the updated training in 2021. Since June 2021, these volunteers have dedicated at least 200 hours to outreach, tabling at 10 events (some featuring the PowerHouse) and assisting a dozen or more personal contacts in taking high-impact actions. In addition, the Energy Navigator training was used with over 20 NYSEG, RG&E and National Grid employees, to boost their energy literacy and enhance their capacity to assist consumers in navigating costs related to home energy use.

Workforce Development

The GYGB coordinator and director of the Energy Warriors program (another CCETC program), became certified trainers using the “Roots of Success” curriculum. In 2021, in collaboration with the Finger Lakes ReUse Center, they carried out a small pilot effort using the curriculum to train a small group of people in green jobs while simultaneously building up skills by working at the ReUse Center. The idea has now spread locally and to other parts of the region; Roots of Success has been adopted at New Roots and a Binghamton high school and is being incorporated into the City’s workforce development plans as part of the Ithaca Green New Deal. It is gratifying to see how a little seed of summer research is growing into what may eventually be a mighty tree!

The Regional Clean Energy Hub – Paving the Way

In October 2021, NYSERDA released an RFP for the establishment of Clean Energy Hubs in each of the ten economic development regions of the state. The Hub structure was designed to build on the experience of the CEEP program and ramp up clean energy education and outreach efforts, incorporate and continue the clean heating and cooling (“HeatSmart”) campaigns, as well as add two more components: supporting clean energy workforce development efforts and engaging stakeholders—especially those from what the state is calling “disadvantaged communities”—in conversations about clean energy policies and programs. Significantly more funding has been awarded to the Hubs than CEEP, with the Southern Tier region slated to receive approximately \$880,000 a year, as compared to the \$130,000 a year for CEEP. GYGB was well poised to continue doing the work in the region and teamed up with several other organizations to build a stronger proposal. Over a period of three months, GYGB staff worked with others from the CCE-Tompkins Energy & Climate Team, the Network for a Sustainable Tomorrow (NEST) out of Broome County, HeatSmart Tompkins, and staff from CCE offices in Delaware, Chemung, and Schuyler counties, to put together a very strong proposal. We are hopeful that this coalition will be awarded the contract, which would be managed by the GYGB coordinator, beginning in the summer of 2022. If successful, the contract will support a total of 15 full- and part-time staff, for a combined total of close to 10 full-time equivalent positions.



Sustainable Tompkins staff Maggie Mowrer and GYGB intern Sarah Huang show off the almost-completed Finger Lakes Climate Fund poster exhibit for the PowerHouse.

Other Initiatives

In addition to the work focused on energy advising, education, and outreach, we have also led and supported a number of other initiatives:

- **Reuse Trail** - Once again, we worked with over 30 secondhand stores to continue the Reuse Trail joint advertising initiative and will soon be reprinting 15,000 copies of a new edition of the rack card which is made available to shoppers at the stores and other venues in the county. For this round, we counted on the stores to take more of a lead in designing and distributing the rack card. They continue to cover the printing costs.
- **Earth Day 2020 & 2021** – Get Your GreenBack Tompkins, in coordination with Southside Community Center, DCI/Building Bridges, and Ithaca College/Sunrise, helped orchestrate an all-online four-hour+ celebration for Earth Day 2020 with over 50 presenters and hosts from a wide variety of organizations, reaching over 10,000 people with more than 4,000 views and a significant number of interactions. In 2021, an online Earth Day Trivia event was organized, with questions that helped participants learn about things they can do to reduce their carbon footprint and ways to get involved with local organizations. Despite technical difficulties and lower attendance than hoped for, the event was enjoyed by all, and was a means to strengthen connections with various sustainability organizations in the County.

- **Communications & Media** – We continue operating four websites—Get Your GreenBack, Smart Energy Choices, the Reuse Trail, and the PowerHouse as well as two Facebook pages for GYGB and Smart Energy Choices. We produced semi-monthly newsletters and blog pieces, and got a few stories published in local media. In 2020, with the help of a student intern, we revamped our Get Your GreenBack website, and worked with a graphic designer to develop a series of new brochures, posters, and flyers to use in outreach in a way that coordinates both GYGB and our regional work under Smart Energy Choices (see example poster on right).
- **Supporting & Influencing Other Projects** – GYGB continues to support many other initiatives, including [Bike Walk Tompkins](#) (where the GYGB coordinator continues to serve on the steering committee) and [Building Bridges](#) (where he used to serve on the steering committee). In addition, the coordinator served on the [City of Ithaca's Green New Deal interim advisory committee](#), providing input into the City's efforts to achieve carbon neutrality by 2030, until the Director of Sustainability was hired, and the committee was dissolved. One major undertaking in this regard was carried out by two interns during the summer of 2021, who researched well-functioning community bike shops around the country, in order to inform local efforts to strengthen and grow community bike shop presence and programming. In 2020, the GYGB coordinator worked with a group of municipalities in Tompkins County, led by the [Town of Ithaca](#), to develop an idea for bringing renewable electricity as a default option for thousands of homes and businesses in the county through Community Choice Aggregation (CCA). The coordinator co-wrote a proposal to hire staff that would be able to implement the idea (a proposal submitted to the Park Foundation).



HeatSmart Tompkins

HeatSmart Tompkins enjoyed unprecedented success in its final full year of serving the Tompkins County community. As of July 1, 2022, HeatSmart Tompkins will be turning over our day-to-day customer support operations to the newly minted Southern Tier Clean Energy Hub headed up by Cornell Cooperative Extension of Tompkins County and other regional partners. The HeatSmart Board, staff, volunteers, and community partners can take great pride in knowing they pioneered a successful model for grassroots education and guidance for building electrification that has now spread throughout NYS and beyond.

The key highlights for 2021 included:

- A huge increase in enrollments which totaled 607, a 104% increase over 2020 enrollments, which was our previous best year. At least 113 projects were sold by our installers.
- A dramatic uptick in heat pump installations in low-moderate income households
- Community Campaigns for Clean Heating with nearly every municipality in Tompkins County
- A successful workforce development partnership with TST BOCES
- Strong partnership with the City of Ithaca on mapping out their building electrification plan and applying for a \$25 million workforce development grant in support of Ithaca's Green New Deal
- Won \$100,000 from NYSERDA (PON 4614) for a scoping study for community geothermal for Ithaca's Southside neighborhood together with Taitem Engineering and the Gray Edge Group.
- HeatSmart Tompkins has been a leader on advocating at the state level for the [Renewable Heat Now legislative package](#). This has resulted in major commitments from Governor Hochul in her State-of-the-State plan and in her executive budget and the passage of a \$5,000 geothermal NYS



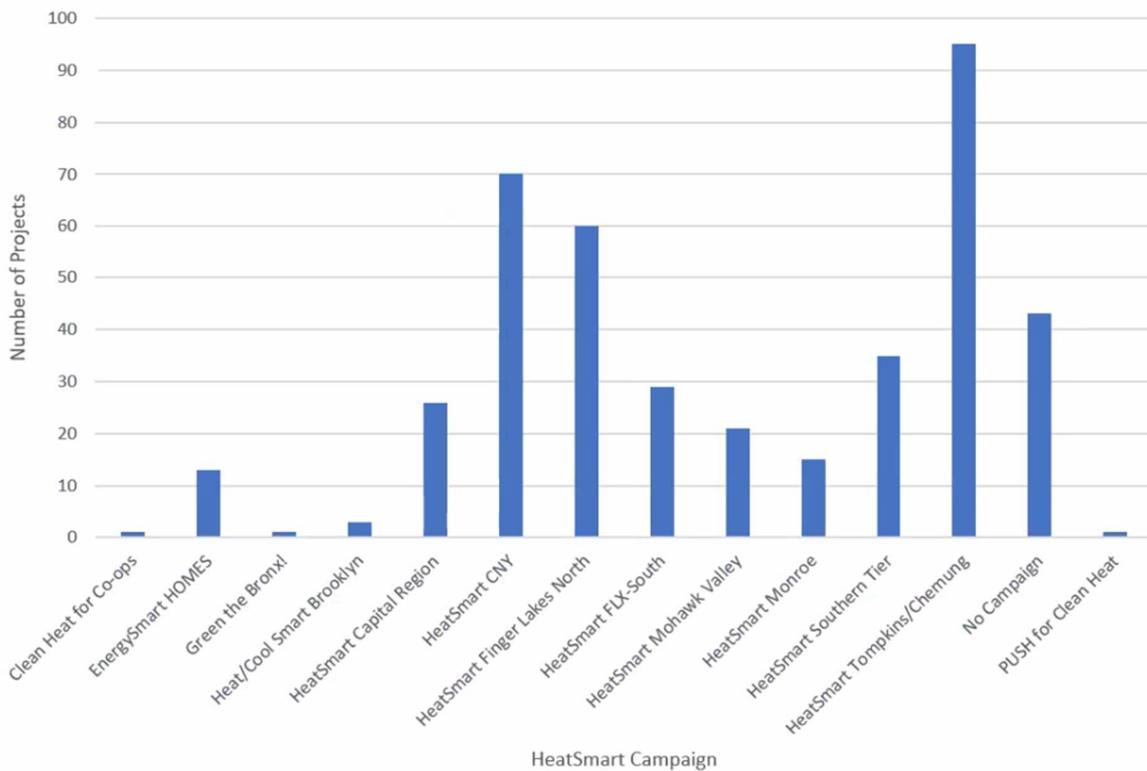
tax credit. We expect to see the passage of the Advanced Building, Appliance and Equipment Standards Act as part of the legislature's Earth Day package.

Low to Moderate Income Initiatives

NYSERDA Heat Pump Demonstration Study

HeatSmart Tompkins was a leading organization in the implementation of NYSERDA's low-to-moderate income heat pump demonstration study. Ninety out of the 413 total projects were in Tompkins County, representing about 22% of all the projects in the study, and a few more were in Chemung, bringing our program's participation to about 25% of all projects completed through the study.

Single Family Projects by HeatSmart Tompkins



NYSEG LMI Adder

HeatSmart Tompkins also negotiated with NYSEG and the other HeatSmart teams to allow the HeatSmart programs to administer a program awarding \$500,000 for NYSEG customers from the rate case settlement. There 50 funded projects total. 29 projects (58%) were HeatSmart Tompkins projects totalling \$446,130. Four projects were GSHP, the rest were ASHP. Nine ASHP projects included a HPWH.

Community Campaigns - Clean Energy Communities

HeatSmart Tompkins embraced the opportunity to engage elected officials in community campaigns for clean heating and cooling and energy efficiency through the Clean Energy Communities Leadership Round. This was a terrific way to share information about the role of building electrification in meeting the state's climate goals with elected officials in the region, as well as a new way to reach potential enrollees in the program. We are proud to report that every municipality we approached to do a community campaign voted to do so unanimously.

Completed Campaigns	Campaigns In Progress
Newfield	Lansing Village
Ulysses	Village of Cayuga Heights
Danby	Groton
Dryden	Lansing Town
Town of Ithaca	
Caroline	
Enfield	
Village of Trumansburg	

Last, but not least, HeatSmart Tompkins wants to acknowledge and thank founding member Brian Eden, who retired from HeatSmart after his many years of dedicated service to our organization as a volunteer and Board Chair. The impact of Brian’s stalwart and tireless advocacy at both the state and local level cannot be overstated. It’s safe to say that we would be nowhere without him.

HOLT Architects

- HOLT continued championing and participating in the efforts of TCCPI and its flagship project, the Ithaca 2030 District, through:
 - In-kind contribution of Andrew Gil’s time serving on the TCCPI Steering Committee.
 - In-kind contribution of Andrew Gil’s time serving on the Ithaca 2030 District Advisory Board.
- HOLT has continued to investigate methodologies for better understanding the energy needs of its 619 West State Street offices as well as potential actions for lowering the overall energy use. HOLT used the real-time monitoring from the “Internet of Things” monitoring, along with a one-month data collection/recording device installed on rooftop Air Handling Units to help analyze if, and how, the HVAC mechanical equipment at 619 West State Street might be more efficiently operated.
- Principal Quay Thompson, AIA, LEED AP presented a lecture to Alfred University Architecture students on net-zero design.
- We developed a design for a 5,500 sq. ft. all-electric, geothermal, net-zero office building for a local accounting firm, to be located in the Community Corner neighborhood.
- We continue to track energy and water usage and report data for publication through the Ithaca 2030 District.
- We submitted a case study and current HOLT Office Building energy data to the New Buildings Institute (NBI) for publication in their “Getting to Zero” annual report.
- HOLT renewed its prior commitment to the AIA2030 Challenge and will be tasking all project managers with entering their projects performance metrics data in the AIA2030Dx website. The AIA 2030 Challenge is based on the original Architecture 2030 Challenge, which was the basis for the formation of the 2030 Districts.
- HOLT has committed to incorporating into its practice knowledge and expertise with the Well Building Challenge and will be pursuing Well Building certification of its offices, which should be completed in 2022.





- HOLT has committed to incorporating into its practice knowledge and expertise with the Well Building Challenge and will be pursuing Well Building certification of its offices, which should be completed in 2022.
- HOLT and Cayuga Medical Center are pursuing LEED v4.1 and WELL v2 certification with the proposed downtown Medical Office Building. The project will also meet the NY Stretch Energy Code

as well as the Ithaca's Energy Code Supplement and NYSERDA's New Construction Program.

- HOLT assisted three clients with proposed building projects to be located in the City of Ithaca, drawing on the City's Energy Code Supplement review process.
- HOLT Principal Associate Cindy Kaufman, together with LEED APs Andrew Gil and Catherine Blakemore and Well Building-Accredited Architect Krysta Schell, established a committee to research known harmful chemicals in building products and materials, specifically to:
 - Identify harmful chemicals by category of harm (e.g., mutagenic, carcinogenic, etc.) and to develop or adopt a system that identifies those considered to be most harmful, thereby helping to identify those products that would be banned from projects designed by HOLT Architects.
 - Investigate/analyze/develop a means of identifying those products and materials that incorporate those chemicals identified as posing significant risk to occupants of buildings.

Ithaca 2030 District

- By the end of 2021, the Ithaca 2030 District consisted of 27 property owners, 33 buildings, and a total of 417,089 square feet of committed space, an increase of 41,718 square feet since December 2020. Buildings added in 2021 included:
 - Ithaca Journal Building
 - Press Bay Court
 - Silk Oak Studio
 - United Way of Tompkins County
- We continued to collect monthly energy data and quarterly water data for the property owners, which we uploaded to Portfolio Manager and then migrated to interactive, online building performance dashboards. We carried out reviews of the individual dashboards on Zoom with the owners or designated building managers to make sure that they understood how to operate the dashboards and to see if they had any questions. The dashboards track progress regarding energy and water consumption at both the individual building and district levels.
- As a District, we met the 2020 target – a 20 percent reduction from the baseline – for energy as well as the 2030 target – a 50 percent reduction – for water. Specifically, we reduced our energy consumption by 21.8% from the baseline and realized savings of 51.4% in water use.
- We carried out our third annual commuter transportation survey of member buildings. The increase in driving to work as downtown reopened in 2021, along with a decline in the number of remote workers, resulted in a rise in transportation emissions to a level well above the 2020 target. The full 2021 annual progress report can be found [here](#).
- We held monthly Advisory Board meetings and four District Partner meetings on Zoom as well as published four issues of the e-newsletter. The District Partner meetings bring together the property owners and other stakeholders to discuss issues of mutual concern and provide updates on the progress of the 2030 District.
- Topics discussed at the quarterly District Partner meetings included community solar, the Ithaca Green New Deal, the city's "1,000 Conversations" initiative, and the building decarbonization campaign.



- The executive director attended monthly meetings of the executive directors in the network to discuss issues of mutual interest, and he participated in the annual 2030 Districts Network Summit, all of which took place on Zoom in 2021.

Ithaca Neighborhood Housing Services



INHS is committed to encouraging the development of affordable, productive, and livable communities through incorporating smart growth practices and sustainable building into all real estate development.

- In 2020/21, INHS designed its first Passive House project for the Village of Trumansburg. Once funded, this project, designed to be all electric, will utilize air and ground source heat pumps for the HVAC systems.
- Founders' Way located in the City of Ithaca is under construction now and will comply with EPA Energy Star Homes V3.1, NYSERDA Low-Rise New Construction Program, and 2015 Enterprise Green Communities.
- In 2021, INHS was recognized by Historic Ithaca for its rehabilitation and green preservation of two buildings within its Cayuga Flats development, a scattered site project within the City of Ithaca. In addition, both buildings received the U.S. Green Building Council's LEED Silver Certification as well as the National Green Building Standard Silver Certification. According to an *Energy Cost and Features* report done by an independent HERS rater, one building will see an energy use improvement of 30.5% over what it previously used and the other will see a 37.8% energy use improvement.
- For the last two years, Taitem Engineering has been conducting energy audits for several of INHS' rental buildings as well as for the INHS offices. Through this partnership, Taitem has provided INHS with:
 - Energy reports for each building and recommendations for upgrading INHS' energy efforts.
 - A checklist to help guide tenants in saving energy within their rental unit.
- In support of the 24/7 Carbon-free Energy Compact and the City of Ithaca's Green New Deal, INHS is currently part of a working group that includes members from the County, the City, and various other partners to see if the conversion to all electric for at least two of INHS' tenant buildings is a viable option in the near future.
- Eighteen percent of INHS staff are now fully remote and an additional 20% work from home at least part of the time.

Ithaca-Tompkins County Transportation Council

Like most other agencies the Ithaca-Tompkins County Transportation Council (ITCTC) had to adjust its work program starting in 2020 to address pandemic conditions and needs. All our meetings continue to take place in a remote format. We continued to have strong participation from partners and our obligations managing surface transportation funding were met without interruption.

Specific activities during 2021 included:

- Organized weekly meetings of transportation, planning, and community health representatives to address COVID transportation challenges. This group eventually stopped meeting with an understanding that it would be reactivated if needed.
- The ITCTC leads biweekly online meeting of transportation planners and providers to help inform and coordinate activities among participants.
- Continued to work with the Center for Community Transportation to investigate service options and possible business models to reestablish a bike share system in Ithaca.
- The ITCTC gathered data needed for a new 2022 edition of its popular Ithaca and Tompkins County Bicycling Suitability Map. The current map is available online [here](#).

Local First Ithaca

- Produced our 11th Annual Guide to Being Local -- the 2021 edition featured murals by local artists.
- Continued our partnership in 2021 with the City of Ithaca, Tompkins County Chamber of Commerce, and Downtown Ithaca Alliance to support the [Ithaca Promise](#), to help ensure the health and safety of customers, staff, and owners in downtown businesses.
- Participated in the national "November is the New December campaign" to encourage shoppers to shop early and to shop local in response to disruptions of the supply chain due to COVID-related labor shortages and shipping issues.
- Campaigned throughout the year to encourage community members to support local businesses during the Covid-19 crisis.
- Continued our work with the Ithaca 2030 District Advisory Board and Tompkins County Climate Protection Initiative Steering Committee.



New Roots Charter School



New Roots is a small public high school with a big mission located in the heart of downtown Ithaca. Open to any student eligible for high school in the wider region, the tuition-free college and life preparatory program engages students in learning actively, thinking critically, and solving real world problems creatively and collaboratively, developing the knowledge and skills to turn 21st century challenges into

opportunities. New Roots features a unique four-year learning sequence that fully integrates Education for Sustainability (EfS) standards and interdisciplinary, community-based projects featuring sustainability themes while meeting all New York State graduation requirements. The lower school program (grade 9-10) cultivates foundational understandings and skills that prepare students to become actively involved in their school and local community as leaders, entrepreneurs, and activists when they move into the upper school program (grades 11-12).

The State University of New York on March 17, 2022 awarded New Roots Charter School a charter renewal for a [fourth charter term](#), which will run from July 1, 2022 to June 30, 2025. The charter renewal comes on the heels of the United States Department of Education ("USDE") designating New Roots as a Green Ribbon School at the beginning of the 2021-22 school year. The award recognizes schools that reduce environmental impact and costs; improve the health and wellness of schools, students, and staff; and provide effective environmental and sustainability education.

This Spring, New Roots juniors and seniors have been piloting the green workforce development program adopted by the City of Ithaca, Roots of Success, with support from the Park Foundation. Students will receive Environmental Literacy certification from the U.S. Department of Labor, a credential that regional employers will be looking for when hiring employees at all levels. New Roots is a member of a new regional green workforce development consortium which, along with partners such as Tompkins Cortland Community College, will open up pathways for young people to bring their unique gifts and passions to the growing green economy in our region.

"The project that the City of Ithaca and New Roots Charter School are undertaking has already become a leading example of a new type of partnership between academic and government institutions," City of Ithaca Director of Sustainability Luis Aguirre-Torres said in a letter in support of the charter renewal dated January 6, 2022. "Our partnership with New Roots Charter School is of great importance for the City of Ithaca, if we are to achieve our goals."



Student participants in the Youth Ecological Restoration Corps drafted a call-to-action letter to the Ithaca community after their experience volunteering for the [Cayuga Wetlands Restoration Project](#):

Dear Ithaca Community,

We would like to share a message from the Youth Ecological Restoration Corps.

We acknowledge that this is native land of the Gayo'goho:no'. We would like to give a special thanks to Paddledockers for partnering with us and hosting us this summer.

We write this as a collective unit and want to share what we witnessed and learned. Our project lasted from July 19th to July 30th, from the hours of 9:00am to 4:00pm through New Roots Charter School, funded by the Department of ENVIS Conservation with

resources supplied by Paddledockers.

Part of our intention is to bring the land back to its original ecosystems using the wisdom and teachings of the native Gayo'goho:no'. During our time, we reintroduced native wetlands plants, cleaned up trash from the Cayuga Inlet, removed destructive invasive species and collected water samples to test.

Through this experience, we have learned more than we expected from the process of giving back to Cayuga Lake and our community. We write this letter to spread awareness. Working with the water, we have received a sense of environmental justice for all. By working closely with the wetlands ecosystems, we built a loving community through working together.

Our group reintroduced native cattail from other wetland areas in the region back into the inlet. Cattail filters nitrogen and phosphorus from the water. This is a way of combating harmful algal blooms caused by industrialization and the lack of protective wetlands ecosystems. In the last 30 years, big box stores were built on traditional wetland ecosystems. We feel burdened by the industrialization of this wetland ecosystem and condemn the decision made by local government to build on these wetlands. We also acknowledge that at large, Ithaca is a city that is built on top of traditional medicinal ecosystems of the Gayo'goho:no'.

Through this letter, we are making a call to action. While we are honored to move this important work forward, we recognize that every human being has a responsibility to dedicate ourselves to the health of the water and Earth. We are asking our community and local government to invest in programs that heal our regional ecosystems. By engaging in this work, the nine of us have reclaimed a connection with nature and a connection with others. We believe that by being of service to the Earth, this action heals relationships between peoples.

*With Love and Honor,
Youth Ecological Restoration Corps*

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

- We are exploring ways to move away from fossil fuel heating and cooling systems on PRI's West Campus.
- We began a partnership with Cornell to do outreach on Cornell's Earth Source Heat project and the Cornell University Borehole Observatory (CUBO).

- Together with partners at Cornell, Clarkson University, and SUNY ESF, we developed and implemented a climate change training course for the approximately 2,400 employees of the New York Power Authority and the New York Canal Corporation.
- We continued running our series of seasonal Social Distance BioBlitzes for the Cayuga Lake Basin. Participants could join in from wherever they were and collect observations using iNaturalist. This activity helps establish a record of biodiversity in our region as the climate is changing; information and the data we collected can be found on our [BioBlitz webpage](#).
- We launched an online version of [Climate Change in Central New York](#), our exhibit about local climate change at the Cayuga Nature Center.
- Our summer camp at the Cayuga Nature Center reopened in the summer of 2021, and we ran several climate, weather, and energy programs for campers (elementary school-age).
- We continued creating YouTube videos on climate science and solutions. Topics are collected in playlists, and include:
 - [In the Greenhouse: Exploring Climate Change](#)
 - [Data Demonstrate Climate Change](#)
 - [Climate Change Solutions, in No Particular Order](#)
- We conducted sessions on climate change education at national and regional conferences such as the annual conferences of the Geological Society of America, American Geophysical Union, and the Science Teachers Association of New York State. We also conducted online teacher professional development workshops on climate and energy literacy and continued to develop climate change teaching resources associated with our book *The Teacher-Friendly Guide to Climate Change*.



Park Foundation

- In 2021, the Park Foundation disbursed approximately \$4,067,770 in grant funds to 54 organizations around the country engaging in efforts to act on the climate crisis, with an emphasis on shifting from extractive fossil fuel practices, implementing climate solutions, and promoting healthy communities.
- Of that amount, seven grants totaling \$552,770, or approximately 14% of this total, were made to organizations in Tompkins County. These local grants support efforts to advance climate solutions, including progressing Ithaca's Green New Deal vision towards implementation. Grants also support efforts to build a green economy needed for a just transition. Funding has been provided for research, community organizing, and technical assistance, all with the essential goal of lifting up the voices of those most impacted by climate change.

Sciencenter

- 580 students from Tompkins County (and 63 from Cayuga County) participated in free virtual field trips in 2021. Students worked on engineering challenges to develop waterwheels and/or wind-powered vehicles while exploring renewable energy and climate change.
- Many of our 2021 family Saturday Free Community Science events and Science Connections presentations featured activities related to climate science and public discourse, including our celebration of Earth Day and events with Cornell's SEED (Science Education Engineering Development) student group.
- Our Future Science Leaders (FSL) program engaged in water quality testing and monitoring with connections to climate literacy and communication



- The Sciencenter served as a host site for the PowerHouse. The PowerHouse is a project of Get Your GreenBack Tompkins, an independent program of Cornell Cooperative Extension of Tompkins County. 168 adults and 164 youth visited the PowerHouse while it was onsite. This portable structure has a goal to increase energy literacy and educate residents on ways to reduce energy use.
- The Sciencenter is part of an NSF-funded project around youth leadership and climate change project led by the Oregon Museum of Science and Industry.

- As part of a NASA-funded project with the Gulf of Maine Research Institute, the Sciencenter co-leads a Community of Practice for Northeast museums and science centers related to locally relevant climate change education and data literacy.
- We added spray foam insulation under 2080 sq. ft. of flooring to decrease our energy consumption and make the space more comfortable.

Sunrise Ithaca

- Developed a series of proposed amendments for the Green Building Policy
- Participated in public comment to advocate for Green Building Policy amendments
- Hosted a Green Building Policy Town Hall to educate members of the public about the proposal and field questions
- Organized a banner drop outside of City Hall calling for an improved Ithaca Green Building Policy
- Organized a digital Global Climate Strike for Ithaca on March 19th
- Organized a chalk-out in support of the Global Climate Strike on March 19th
- Organized an Earth Day Rally in April
- Participated in an April rally urging the passage of the Climate and Community Investment Act, featuring Assemblymember Anna Kelles
- Surveyed local candidates about their position on social and environmental topics as part of our endorsement process
- Released endorsements for Tompkins County Legislature and Common Council
- Co-hosted a June rally with Ithaca DSA for the CCIA and NYBPRA



- Attended the 1000 Conversations launch event
- Hosted a July picnic to build community connections and develop a long-term vision for our work
- Organized an August rally urging Congress to pass a robust \$3.5 trillion budget reconciliation bill that invested in climate solutions, the care economy, jobs, and justice
- Participated in an October rally hosted by EANY that pushed for the passage of the Environmental Rights Amendment in New York
- Hosted a community forum with Luis Aguirre-

Torres to discuss the role of community organizations in supporting the implementation of the Ithaca Green New Deal

- Signed onto a letter asking Governor Hochul to invest in better buildings
- Canvassed for the Ithaca Solidarity Slate
- Presented at Dewitt Middle School to educate younger students about issues of climate justice
- Participated in a Renewable Heat Now lobby with Assemblymember Anna Kelles

Sustainable Tompkins

- We are pleased and proud of another successful year for the Finger Lakes Climate Fund (FLCF). We successfully distributed the remaining funds in our NYSERDA LMI Heat Pump grant (in partnership with Heatsmart Tompkins) to local families upgrading their heating equipment. We ran a number of successful campaigns (e.g., Facebook fundraisers, Giving Tuesday, and Finger Lakes Enterprises for Climate Action) to ensure we could pair these LMI grants with our Climate Fund awards. Our board and staff worked together to raise \$33,818 from 192 gifts, despite continuing all our efforts remotely and facing continued reduced air travel during the pandemic – a large source of our local carbon offsets.
- Despite depleting the Climate Fund from all the awards, we were giving out and the current supply chain shortages, we were able to award \$27,731 in 11 FLCF grants in 2021, keeping 1,382 tons of CO₂ out of the atmosphere from old fossil fuel equipment in classically leaky, upstate NY homes.
- We distributed an additional \$27,000 and 21 more grants through our NYSERDA LMI heat pump partnership program – that was an additional 1,215 tons of CO₂ kept out of the atmosphere, bringing the total CO₂ sequestering to 2,597 tons and our total give to \$54,731. With this grant, we were able to give an additional \$2,000 per air source heat pump system and \$300 per heat pump water heater, making these projects affordable to local folks. In total, we provided the gap funding for 23 heat pumps and 12 heat pump water heaters, with 9 of these projects installing just heat pump water heaters alone.
- It was a big year of work and results for us, reaching over \$125,000 in carbon offset grants to 74 lower-income households since the inception of the Climate Fund. That's a total of \$250,000 in funding support for those in need to make their homes low carbon, comfortable, and affordable. We hope to grow this success in 2022 by expanding our business and organizational partners, especially via our Finger Lakes for Enterprises for Climate Action (FLECA) program.



Taitem Engineering



A highlight of 2021 was the adoption of the Energy Code Supplement, aka “green building policy,” by the City and Town of Ithaca. Taitem was privileged to be part of the effort to develop the code. Taitem is in the planning stages with BlocPower to implement Ithaca’s electrification and decarbonization program. Taitem’s Energy + Sustainability and Quality Assurance departments continue to provide a broad range of services for our clients. We continue to provide a variety of services through New York State Energy Research and Development Authority (NYSERDA) programs.

Sample local projects:

- Energy studies for small businesses and not-for-profits through the Green Jobs/Green NY program, including Kendal at Ithaca, Cancer Resource Center, First Baptist Church, Southside Community Center, Pi Beta Phi, Enfield Community Council, and Wide Awake Bakery,
- On-site energy manager services for Ithaca Neighborhood Housing Services
- Commissioning for area public schools, including Lansing, Auburn, Binghamton, and Union Springs.
- Energy consulting through NYSERDA's New Construction Program for new buildings in Ithaca, including Arthaus, Asteri Ithaca, Harold's Square, Ironworks, and others.
- Tompkins County Business Energy Advisors program, providing energy assessments to local businesses.
- Technical specialist support for Cornell University's Carbon Challenge project, an initiative with the aim of reducing CO2 emissions by 58,935 mt through implementing building controls and laboratory heat recovery.



Taitem's Design Department continues its work on new buildings and renovations/energy retrofits, often being able to provide integrated design and energy consulting services. Notable local projects include:

- Asteri, the new apartment building under construction on Green Street
- Ironworks, the new apartment building under construction on West MLK/State Street
- Ithaca Arthaus, the recently completed apartment building on the Cayuga inlet
- Cornell Groundwater Treatment Plant heat pump using effluent as a heat source

Farther afield, our teams are working on exciting projects that feature highly energy-efficient design:

- New student residence at College of the Atlantic, Bar Harbor, Maine
- A deep energy retrofit for a large multifamily building in Queens, New York for the New York City Housing Authority, under NYSERDA's RetrofitNY program.
- A new classroom building at Wolfe's Neck Center for Agriculture and the Environment in Freeport, Maine
- A heat-pump conversion of a co-op in New York City, the first fully monitored project of its kind.

Staff member Brendan Mangino presented at NESEA and PHIUS Con on the topic of heat pumps for domestic hot water. Taitem is recognized as a leader in designing hot water systems with this emerging technology.

Tier Energy Network

The Tier Energy Network (TEN) is an industry led collaboration of business, non-profits, government, and education to support the development of an industry cluster in clean energy technology in the Southern Tier. Our primary activities include:



- Collaborate, educate, and mentor
- Provide leading edge services to established businesses and start-ups: industry analysis, energy market analysis, evaluation of state energy policies and regulation, lean manufacturing, workforce development, trade missions etc.
- Support organizations and businesses to seek private and government funding
- Define the industry cluster in clean energy for the Southern Tier
- Support municipalities, schools, colleges, and universities to implement clean energy strategies

The Executive Committee provides a broad skill set in the energy industry:

Jeff Smith: President of TEN, retired utility executive, member of many regional organizations.

R. Michael Strait: VP of TEN, extensive experience in clean energy projects

Rick Mancini: Director of Wholesale Market Services for Customized Energy Solutions, retired from NYSEG with experience in electric supply and the NY energy markets

Cliff Olin: Chief Development Officer at C4V, Founder and Managing Director of Olin Capital Advisors

Dennis Lockhart: Principal of CIMSEE Consulting. Has developed lean manufacturing projects for Fortune 500 companies around the world

Sean Sullivan: Director of Smart Grids Innovation at Avangrid

Robert Lofthouse: Chair of Engineering Science Department at SUNY Broome

Diane Stefani: Broome County Environmental Management Chair, retired Human Resource Executive for Lockheed Martin Aerospace and Defense Business

Luis Acuirre-Torres: Director of Sustainability, City of Ithaca. Leader of the Ithaca Green New Deal and the Green Jobs Corridor

Sara Culotta: Market Lead – Energy & Sustainability – Siemens Smart Infrastructure
Support to the Executive Committee:

Adam Flint: Co-founder and steering committee member of Energy Democracy Alliance, Director of Clean Energy Programs for Network for a Sustainable Tomorrow (NEST)

Kelly Sullivan: Senior Project Developer for Bergmann PC

2021 Accomplishments:

- Completed ARC study on the emerging industry cluster in clean energy for an 11-county region of the Southern Tier. Study included identification of a start-up companies, established companies, and organizations that support and clean energy projects in the region. Several recommendations developed on marketing the region, barriers to clean energy development, and improvement of the eco-system for entrepreneurs.
- Maintain contacts in the industry and a long-term forecast of clean energy jobs.
- Provided support to workforce development organizations, including STEM development.
- Maintained the bi-monthly energy speaker series where energy companies, startups and organizations provide updates. This series serves as a regional networking opportunity.
- Supported and sponsored several significant grant opportunities, including the Build Back Better application by Southern Tier 8, Soft Landing application for Binghamton University, and early development of the Green Job Corridor.
- Served on the quarterly CED's committee of Southern Tier 8.
- Initiated long-term collaboration with the Watson School to develop grant opportunities, support the Capstone Project, and increase use of interns and volunteers in the region.

Southern Tier Update:

Clean energy took a major step forward in the Southern Tier in 2021. Major developments at the Huron Campus and the Ithaca Green New Deal are raising the profile of our region and providing significant job opportunities as noted below in the goals section.

Some of the accomplishments include:

- iM3NY received financing and regulatory approval for the first phase of a cleaner and less costly Lithium-Ion giga factory. Ultimately the company will require 1,500 employees, not counting supply chain companies that will co-locate.
- Ubiquity Solar announced manufacturing of solar cells at the Huron Campus beginning by the end of the year subject to financing. The first phase of development will require



150 jobs. If successful, the company can scale up over the decade and increase job needs significantly. Both Ubiquity and iM3NY have a focus on the North American supply chain.

- Phoenix Investors purchased the Huron Campus. Phoenix has expertise in transforming older manufacturing campuses. They will make investments in the campus and recruit additional companies to the region.
- The Village of Endicott is home to the Huron Campus and has received two major grants to upgrade the Village in order to attract and retain the resources we require. The village is also embarking on the development of a clean energy strategy.
- Binghamton University has received a grant to develop a “soft landing” program for international startups desiring to enter the US market through the Southern Tier. BU is leading a major Build Back Better grant opportunity to develop the US supply chain for the battery storage industry, accelerate business growth, maintain industry leadership, support workforce development and address Climate Justice.
- The City of Ithaca has announced the Ithaca Green New Deal, which has captured the interest of the White House and may be the most progressive program in the country to address climate change and justice. The city has already approved electrification of 6,000 businesses over the rest of the decade. To support workforce development for disadvantaged communities the city is leading the Green Jobs Corridor alliance of 5 large city areas in Upstate New York.
- Entrepreneurship for clean energy companies continues to grow with over 40 start-up companies in the region.
- Several innovative STEM programs are developing which will improve the jobs pipeline in the region.
- The scoping document of the CLCPA has been submitted for public comment up to June 30. The CLCPA represents the largest program ever developed in New York State. Business, education, government, and the general public will require significant support to understand and implement this program.

These developments will drive much of our activities for 2022 as we help the region to maximize the benefits. Workforce development is the number one priority. The major job categories are listed at the end of the report.

TEN Goals for 2022 include:

- Mentor and attract clean energy technology companies.
- Lead the 2022 Southern Tier annual meet up for the fall
- Support workforce development programs for clean energy and manufacturing. The region will need 7,000 to 14,000 new jobs by the end of the decade for manufacturing and, installation and services.
- Improve the eco-system for entrepreneurs in the Southern Tier
- Initiate the Southern Tier Capital fund to support early-stage investment and encourage local investors to get engaged with entrepreneurial community
- Seek public and private funding with partners
- Provide periodic updates on the CLCPA and the most cost-effective strategies to obtain compliance
- Grow the collaboration with the Watson School
- Hire an Executive Director and an assistant to meet regional goals
- Support regional marketing. 2021 developments at the Huron Campus and the Ithaca Green New Deal have increased the profile of our region. The region needs to be progressive to maximize long-term benefits.



Clean energy job sources for the rest of the decade:

- iM3NY
- Ubiquity Solar
- Suppliers to Huron Campus companies
- Companies recruited by Phoenix Industries
- Established company growth (i.e., BAE, Raymond, Lockheed Martin, Corning Inc. etc.)
- Current clean energy start-up companies
- New clean energy start-up companies
- Soft landing program
- Clean energy installation and service: wind, solar, storage, biomass, insulation, controls, appliance replacement, EVs, etc.
- Supply chain and in-shoring opportunities
- Workforce retirement (30% over the next 5 to 7 years)
- Utility build-out

Tompkins County

- **Green Fleet Capital Fund:** Staff worked with Departments across County Government to begin utilizing the Green Fleet Capital Fund authorized by the legislature through the capital budget in 2020. The fund helped cover the purchase of two plug-in hybrid vehicles, four fully electric vehicles, and helped offset the cost of the purchase of 5 hybrid pursuit-rated police vehicles. The funds also supported EV charging infrastructure purchases.
- **Green Facilities Capital Plan:** Staff worked with the Facilities Department and Johnson Controls to establish a three-phased Green Facilities plan to help improve energy efficiency of buildings and to work to wean the County off fossil fuel combustion for County facilities. Staff presented the first phase of the plan with Facilities to the legislature and was successful in garnering support for a bond of over \$7 million to help support Phase 1 of the Green Facilities Capital plan, to be enacted in 2022 and 2023.
- **Chief Sustainability Officer:** The position of Chief Sustainability officer was created and funded for a three-year period by the legislature. The position will serve out of the Department of Planning and Sustainability office and focus primarily on reducing the emissions of County operations.
- **Business Energy Advisors New Construction Program:** This program is designed to assist businesses/organizations in making energy decisions for new construction, renovations, and expansion projects. Since its launch in 2018, the program has participated in 40 introductory meetings, produced 33 energy options reports, and participated in 33 energy charrettes, which have led to at least ten businesses applying to financing programs offering more assistance to implement energy efficiency measures in their buildings. In 2021, the program continued to be impacted by COVID but saw increased interest in the program in the latter half of the year. Participating business sectors have included manufacturing, retail, multifamily, R&D (technology), non-profit, and government.
- **Climate and Sustainable Energy Advisory Board:** 2021 was the second year that the CaSE board was in operation. Accomplishments included resolutions for the Energy Innovation and Carbon dividend Act and the PSC Gas Planning Proceeding; a letter of support for the TCAT grant application for electric buses; comments to the DEC regarding regulations to reduce methane and VOC emissions; and further comments to the Climate Action Council on energy and GHG emissions reduction barriers encountered in Tompkins County and the Southern Tier.



- **Tompkins County Harmful Algal Bloom Strategy:** This strategy, approved and endorsed by the Water Resources Council, focuses on actions to be undertaken in the next three years and includes 20 actions in four topic areas: agriculture, ditch management, stream buffers and wetlands, and collaboration.
- **Hazard Mitigation Plan:** Tompkins County's Hazard Mitigation Plan was approved by FEMA in 2021 and it has subsequently been adopted by the County and most municipalities. In addition, the Debris Management Plan; Critical Infrastructure Drought and Flood Analysis; Community Rating System Analysis; and Community Economic Recovery portions of the Resiliency and Recovery Plan all got under way, and several components have been drafted and are in review by topic-specific subcommittees.



Tompkins County Climate Protection Initiative

- The Ithaca 2030 District continued to be the flagship program of TCCPI in 2021. Fifty percent of the coordinator's hours are 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 in efforts to reduce the community's carbon footprint; 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 about 29 participants. That the meetings continue to attract a sizeable number of community leaders and activists after over twelve years, together with the high number of requests made to present at the meetings (most of the agenda topics come about this way) and the fact that the agendas for the meetings are usually set several months in advance, reflect the continued strong interest in TCCPI.
- Topics in 2021 included:

- **Community Energy as a Shared Municipal Service** – David Gower, Solar Power Developer, BW Solar
- **“Our Future, Our Choice”: Climate Change at PRI** – Ingrid Zabel, Climate Change Education Manager at the Paleontological Research Institution
- **The Climate Reality Project Scorecard** – Diane Stefani, Federal Policy Working Group, The Climate Reality Project, Capital Region, NY
- **The Energy Warriors** – Aloja Airewele, Program Leader and Staff Member at Cornell Cooperative Extension –Tompkins County
- **The Ithaca Green New Deal 2.0** – Luis Aguirre-Torres, City of Ithaca Sustainability Director
- **Going Net-Zero with Multi-Residential Affordable Housing** – David Shepler, Founding Partner at Net-Zero Development, LLC, and Guy Kempe, Vice President of Community Development at RUPCO
- **The NYS Climate Action Council** – Bob Howarth, CAC Member and David R. Atkinson Professor of Ecology and Environmental Biology at Cornell University
- **A Nationwide Carbon Capture Pipeline?** – Sandra Steingraber, Senior Scientist at the Science and Environmental Health Network and co-founder of Concerned Health Professionals of New York
- **1000 Conversations About Our Future** – Anne Rhodes, Cornell Cooperative Extension – Tompkins County



- **Cornell Earth Source Heat** – Ole Gustafson, Earth and Atmospheric Sciences Department geologist, and Terry Jordan, J. Preston Levis Professor of Engineering, Earth and Atmospheric Sciences Department
 - **Climate Change in the News** – Peter Bardaglio, TCCPI Coordinator
 - **Ithaca Green New Deal Scorecard** – Tom Hirasuna, Finger Lakes Chapter of Climate Reality, and Diane Stefani, Capital Region Chapter of Climate Reality
 - **INHS and Green Affordable Housing** – Johanna Anderson, Executive Director of Ithaca Neighborhood Housing, and Lynn Truame, Senior Real Estate Developer at INHS
 - **Cryptocurrency Mining in NYS** – Assemblymember Anna Kelles (D-125)
 - **The Climate Action Council Draft Scoping Plan** – Bob Howarth, CAC Member and David R. Atkinson Professor of Ecology and Environmental Biology at Cornell University
 - **NYS Agriculture, Forestry, and Climate Action** – Suzanne Hunt, Policy Director at Generate Capital and NYS Agriculture and Forestry Advisory Panel member
- The [TCCPI Newsletter](#), which comes out every two months, had a subscriber base of about 420 and the average open rate during 2020 was 39% for its six issues. The combined TCCPI/Ithaca 2030 District subscriber base was about 490; there is significant overlap among the two groups of subscribers. In March 2021 the high open rate for the two newsletters again earned the TCCPI Newsletter a “Constant Contact All Star Award,” which the company presents to only 10% of its users; it marked the ninth year in a row that our newsletter has been recognized in this way.
 
 - The TCCPI [website](#), which continues to be a rich resource on climate change and clean energy issues, was updated on a monthly basis. All of the meeting notes, annual reports, and newsletters can be found archived on the site, dating back to 2009. The website attracted, on average, monthly hits of about 2,250 in 2021.
 - 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 456 to 492 during the year. Currently, we have 590 followers. In addition, the TCCPI coordinator continued several times a week to post information about energy, climate change, and sustainability issues on Twitter, and has over 2,400 followers.
 - Efforts to get the word out about the work of TCCPI and Ithaca 2030 District included talks at the Cornell Institute for Public Affairs, Downtown Ithaca Alliance, and the Tier Energy Network as well as two articles in Tompkins Weekly.
 - The TCCPI coordinator served on the steering committee of Get Your GreenBack (GYGB) and the boards of the Groundswell Center for Local Food and Farming, New Roots Charter School, PRI/Museum of the Earth/Cayuga Nature Center, and EcoVillage at Ithaca, Inc, and he was a regular attendant at meetings of the Tompkins County Climate and Sustainable Energy Advisory Board.

Tompkins County Council of Governments Energy Committee

In 2021, based on the interest in moving forward with Community Choice Aggregation a grant proposal was submitted to the Park Foundation. The Park Foundation awarded the “Community Choice Aggregation in Tompkins County: Developing a Path Forward” proposal. This news, along with the following additional inputs, led to a series of summer discussions.



- Luis Aguirre Torres, Sustainability Director for the City of Ithaca became involved and brought a deep knowledge about CCA.
- The proposed timeline and scope of work shared in the Park Foundation proposal did not adequately capture the costs of the planning and documentation needed for implementation.
- A strong desire to create a smooth process for other Tompkins County municipalities wanting to sign on to any approved Public Service Commission plan.

Sustainable Tompkins and the City of Ithaca engaged Paul Fenn, Local Power LLC, to provide agreed-upon activities and deliverables over a 16-month period. Local Power will work with the City and Town of Ithaca to develop and submit a plan to the PSC that will include financial, data security, community education, and local energy development components. Once the plan is approved, other municipalities will have the opportunity to join the City and Town in the program.

Tompkins County Environmental Management Council

- 2021 marked the 50th Anniversary of the Tompkins County Environmental Management Council. Our goal for 2021 was revitalizing and better connecting the EMC, so we worked throughout the year to address two key areas:
 - Inreach: Creating a cooperative and engaged working group of the EMC by 1) increasing the effectiveness of both individual members and committees; and 2) improving our whole-council meeting process.
 - Outreach: Continuing to 1) host informative presentations at EMC's open monthly meetings; 2) reach out to partner organizations; 3) work more closely with the County Legislature and Planning Department; and 4) improve information sharing through the "Green Scene" biweekly email and partnering with Vanessa Greenlee on her Waste Reduction Podcast at Cornell.
- Progress: Along the way, we:
 - Learned a great deal from the monthly presentations
 - Encountered expected and unexpected challenges and took a hiatus from committees to re-evaluate them and close one (the Waste Reduction Committee, which continues as an independent entity)
 - Participated in a multi-step process to re-engage and reconfigure our committees as follows: Unique Natural Areas, Education and Communication, and Climate Adaptation
 - Reconnected with the New York State Association of Conservation Advisory Councils on their 50th anniversary via a presentation from the organization's president. At the virtual conference VP Cait Darfler hosted a poster session and Michelle Henry (CAC chair) also attended. Developing these ties greatly enhances our connection with similar councils statewide. Stephen Nicholson is our liaison.
- As in prior years, TCEMC provided written comments on relevant issues. We wrote letters to the governor about 1) the protection of the Bell Station parcel; and 2) conservation of the Camp Barton parcel, both on Cayuga Lake; and we also wrote a letter to U.S. Transportation Secretary Pete Buttigieg in support of a TCAT grant to obtain electric buses.
- Presenters and presentation topics in 2021:
 - Jody Enck and Paul Anderson, "The Christmas Bird Count and the Cayuga Bird Club"
 - Stephen Nicholson, "UNA committee chair on the background and mission of the UNA"
 - Dr. Thangamani, Thangamani Lab, SUNY Center for Environmental Health and Medicine, Upstate Medical University, "Ticks and Tick-borne Diseases in New York State"



- Simon Skoknick, NYSACC president, “NYS Association of Conservation Advisory Councils”
- Sarah Zemanick, Ole Gustafson, Terry Jordan, and Tony Ingraffea, “Cornell University Earth Source Heating”
- Scott Doyle, “Tompkins County Hazard Mitigation Plan”

Town of Caroline

Town Planning & Sustainability

Following on the findings and recommendations of the updated Comprehensive Plan reported last year,



Caroline initiated drafting of zoning regulations appropriate for the town in early 2021. That process required the establishment of a Zoning Commission to “*recommend the boundaries of the original zoning districts and appropriate regulations to be enforced therein, make a preliminary report, hold public hearings, and submit a final report to the local governing board...*” The Zoning Commission has been meeting regularly since March 2021 towards developing draft zoning regulations appropriate for Caroline. Our goal is to establish zoning regulations that guide development in ways that promote the visions of the Town’s Comprehensive Plan, protect the quality of life of Caroline residents, and support a diversity of livelihoods within the town.

Brighten Up Caroline (Clean Energy Communities Program)

Our Brighten Up Caroline town-wide LED bulb distribution was completed in 2021, with a final postcard mailing and concerted doorstep delivery managed by Program Director, Emily Adams. Our LED streetlight project was delayed due to a parts supply limitation but is now at the point of “substantial completion.” Completion of these two projects will close out our *Brighten Up Caroline* Clean Energy Communities grant.

Local Clean Heating & Cooling Campaign

Things came full circle in 2021 when we conducted a successful local Clean Heating & Cooling Campaign that was facilitated by Solar Tompkins/HeatSmart, an outgrowth of the Solarize Tompkins Southeast program back in 2013. Successful completion of this NYSERDA High Impact Action Item qualified Caroline for a \$5,000 grant to promote local energy efficiency and/or renewable energy, our seventh High Impact Action Item. We are exploring how best to use these funds to further our sustainability goals in the community.

Town of Dryden

- The Dryden Climate Smart/Clean Energy Community Task Force (CS/CEC TF) met monthly during 2021 to guide a wide range of actions to reduce greenhouse gas emissions and increase climate resiliency in the Town.
- Dryden was one of the first municipalities in the region to adopt the NYS Stretch Code to require higher energy efficiency measures in construction of new residential and commercial buildings and in rehabilitation projects in the Town. This action gained the Town a \$5,000 grant from the New York State Energy Research and Development Authority (NYSERDA).
- Dryden conducted a highly successful Clean Energy Heating and Cooling campaign which met targets for installing more energy efficient cold weather air source heat pumps, air source hot water heaters, insulation, and air sealing in existing Town buildings. This action brought another \$5,000 grant to the Town.



- A two-car electric vehicle charging station was installed in the Town Hall parking area. It was funded by an \$8,000 grant from NYSRDA for the charging units, and an earlier \$5,000 NYSERDA grant that was applied to installation costs. (The Village of Dryden also installed an EV charging station at the Village Hall.)
- Dryden was rated number two among municipalities in the eight counties of the Southern Tier Region of the NYSERDA Clean Energy Communities, having completed eight Clean Energy Community Leadership actions.
- The Town completed a \$105,000 upgrade to its Town Hall geothermal heat pump HVAC system, originally installed in 2008.
- The Town acquired LED fixtures to convert more than 90 streetlights to energy saving lights, in a project with the New York Power Authority (NYPA).
- The CS/CEC Task Force completed extensive research on options to buy 100% renewable energy for all municipal buildings and prepared a request for proposals. The Town Board approved the 100% renewable contract in early 2022, making all municipal buildings net zero.
- The CS/CEC TF initiated a collaboration with two groups of Dryden High School students to work on Climate Change and Sustainability actions in the Town.
- The Town of Dryden was approved as an employer for a Clean Energy Planning internship, with 90% salary paid through a NYSERDA grant. An earlier grant will be applied to the local match for the 15 hour/week internship work, which will focus on researching and documenting Town actions toward Climate Smart Community Silver status, and Clean Energy Community actions towards additional grants.
- The Town's Planning Board completed work on a proposed update to the 2005 Comprehensive Plan, including the Town's first proposed Climate Action Plan (CAP), prepared by Environmental Design and Research Associates of Syracuse and the NYS Planning and Development Board of Central NY.

Town of Enfield

- Completed the solar install on our highway garage
- Passed a Drinking Water Protection Law and are working on further Drinking Water Protection Plans
- Received a NYSERDA grant to install air-source heat pumps for our Courthouse
- We are working on a DEC grant to build a salt barn

Town of Ithaca

In 2021, the Town continued to work towards its Green New Deal goal of an equitable transition to carbon neutrality by 2030 and approved additional sustainability staff capacity.

- Adopted the Ithaca Energy Code Supplement, regulations for new construction, in partnership with the City of Ithaca. Developed compliance documents and trained code inspectors.
- Completed 2017 and 2019 greenhouse gas inventories for government operations, showing that the goal of reducing emissions 30% by 2020 was met
- Began development of Community Choice Aggregation program with City of Ithaca
- Continued working towards purchase and LED upgrade of about 270 streetlights. Installation is expected in spring 2022.
- Held a three-day charrette for the purpose of developing a master plan and regulating plan for a traditional neighborhood type development on South Hill, per the New Neighborhood Code
- Completed construction of the Gateway Trail, opened trail and bridge to the public
- Approved full-time Sustainability Planner position beginning January 1, 2022, to replace split position with City of Ithaca



- Conducted FlexTech energy studies of Town Hall and Public Works Facility
- Joined Ithaca 2030 District with Town Hall
- Concluded collaboration with Town of Bedford and Saratoga Springs on existing building policy with release of three model laws
- Adopted the Town's first Green Fleet Policy
- Conducted Clean Heating Campaign in partnership with HeatSmart Tompkins, resulting in community heat pump installations and grant funding