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*Front cover photo: State Theatre by Scott Herder (Bobo & Chichi). Left: New Roots Charter School mural by Lachlan Chambliss (Ithaca Murals).*
MESSAGE FROM THE EXECUTIVE DIRECTOR

With the rollout of vaccines and adherence to health and safety guidelines, downtown Ithaca was able to remain open for businesses, workers, residents, and tourists in 2021, despite a resurgence in COVID-19 infections during the latter part of the year. Economic activity, however, did not return to pre-pandemic levels and many offices and stores felt the impact.

The biggest news of the year took place in early November, when in an unprecedented move the Common Council approved a plan developed by the City Sustainability Director Luis Aguirre-Torres to fully decarbonize buildings in Ithaca, a development that attracted national and even international media attention. Part of a larger commitment made in 2019 to achieve community-wide carbon neutrality by 2030, the adoption of this initiative created new momentum for the Ithaca Green New Deal. Buildings make up 73 percent of greenhouse gas emissions in Ithaca, with commercial buildings accounting for 48 percent, so energy efficiency and electrification will have a key role to play in reaching carbon neutrality. The Ithaca 2030 District’s focus on improving the performance of commercial buildings can help accelerate the reduction of the community’s carbon footprint.

The Ithaca 2030 District—the flagship program of the Tompkins County Climate Protection Initiative (TCCPI)—is a voluntary effort by property owners and building tenants to meet ambitious energy and water use reduction targets as well as to bring about cuts in commuter transportation emissions. District property members, by committing to the goals of the 2030 District, are not only having a positive effect on the environment; they are also saving money on utility costs, improving the well-being of those who live and work in their buildings, and stimulating the local economy.

We have grown considerably in the last 16 months, due in part to the reopening of downtown as well as the excitement generated by the City’s building decarbonization campaign. Currently, there are 30 commercial property owners, 40 buildings, and 522,375 square feet of committed space, compared to 25 property members, 29 buildings, and 375,371 square feet at the end of 2020. For the purposes of this annual report, we focus on the 27 property members, 33 buildings, and 417,089 square feet that belonged to the District for most of 2021.

The Ithaca 2030 District is part of a network that includes 22 other cities in the United States and Canada, many of them among the largest cities in these two countries. We work with our members to collect, analyze, and benchmark the energy and water use of their buildings, and aggregate this data to track progress at the district level. In addition, we carry out an annual survey to track the greenhouse gas emissions generated by commuters to and from the member buildings. We also bring together the District property members as well as professional and community stakeholders on a quarterly basis to share strategies, best practices, tools, resources, and other information that will improve building operations and increase asset value.

We are pleased to report on the growth and performance of the Ithaca 2030 District in 2021, and we look forward to continuing our work in 2022 to help create a sustainable, healthy, and resilient built environment for our community.

Peter Bardaglio
May 2022
Established in June 2016, the Ithaca 2030 District is a public-private collaboration seeking to create a groundbreaking high-performance building district in downtown Ithaca. It is part of a larger effort in the City of Ithaca and Tompkins County to dramatically reduce greenhouse gas emissions that threaten to set off runaway climate destabilization.

By making the business case for efficient operations, the 2030 District is driving innovation through collaboration, leveraged financing, and shared resources. It builds upon the TCCPI model to provide a non-competitive and supportive environment in which building owners, professionals, and community organizations come together to share best practices and accelerate market transformation in Ithaca’s built environment.

The Ithaca 2030 District provides members with a roadmap and the support they need to manage and improve the water and energy performance of their buildings by creating new tools, partnerships, and opportunities to reduce their carbon footprint. It represents a major investment in Ithaca’s future and reflects the collaborative nature of our community.

The Ithaca 2030 District is part of the 2030 Districts Network, an independent organization founded by Architecture 2030. The Network includes 23 established urban building districts across the United States and Canada.
The Ithaca 2030 District follows the 2030 Challenge for Planning, a series of building performance targets adopted by the 2030 Districts Network to address energy consumption, water consumption, and transportation emissions in the building sector. For existing buildings, the targets are the same for all three metrics: a 20% reduction from baseline by 2020, with incremental targets reaching a 50% reduction by 2030. New buildings must meet the upcoming design target: an immediate 50% reduction in each of the three metrics, and incremental energy targets reaching net zero in 2030. As of 2021, all property members of the Ithaca 2030 District are treated as existing buildings.

To measure the District’s progress against the 2030 Challenge for Planning, individual property members’ building energy and water data were collected, analyzed, and aggregated to determine the overall results at the District level. While building-level data are only reported to each property member, the District-level data are publicly available in order to guide sustainable planning measures for the Ithaca community. The baselines and performance metrics used to track the District’s progress are listed in the table below.
|                      | ENERGY                                      | WATER                                      | TRANSPORTATION                          |
|----------------------|---------------------------------------------|--------------------------------------------|------------------------------------------|
| **Baseline Type**    | Regional Baseline                           | Local Baseline                             | Local Baseline                           |
| **Baseline Source**  | 2003 Commercial Building Energy Consumption Survey (CBECS) | 2014-2016 Water Consumption Data Provided by the Ithaca Water and Sewer Division (IWSD) | 2012 Ithaca Commuting Survey Results for City Workers, Data from the EPA and EIA |
| **Baseline Considerations** | Climate Zone, Space Type(s), Occupancy | Climate Zone, Space Type(s) | Location |
| **Impact Metric**    | Annual Energy Use Intensity (EUI)            | Annual Water Use Intensity (WUI)            | Carbon Emissions per person per trip per year |
| **Units**            | kBtu/square foot                             | Gallons/square foot                        | kgCO2/person/trip/year                    |
| **Data Tracking Method** | NYSEG + Energy Star Portfolio Manager       | IWSD + Energy Star Portfolio Manager       | Annual Transportation Emission Survey    |

The City of Ithaca has embarked on an ambitious project to retrofit and electrify all residential and commercial buildings in the city. To achieve this, the City has partnered with the Ithaca 2030 District to analyze available data, as well as to identify immediate opportunities to engage and secure the participation of commercial building owners.

**Luis Aguirre-Torres**  
Director of Sustainability  
City of Ithaca
THE DISTRICT IN NUMBERS (as of 12/31/2021)

417,089
SQUARE FEET COMMITTED

33
BUILDINGS

27
PROPERTY MEMBERS

PROPERTY TYPE BREAKDOWN BY SQUARE FOOTAGE

- Educational/Cultural: 21.0%
- Office: 35.3%
- Restaurant: 5.4%
- Hotel/Inn: 3.5%
- Mixed Use: 15.1%
- Retail: 18.8%
- Other: 0.8%
Energy data for the Ithaca 2030 District are collected through NYSEG, the local utility, and tracked using the Energy Star Portfolio Manager. After data for the full year are gathered, we aggregate building members’ energy data to calculate the District’s overall energy performance. The 2021 District Baseline EUI, calculated as the weighted mean of individual buildings’ energy baselines, is 108.2 kBTU/sq ft.

In 2021, all 31 properties (33 buildings) of the District reported energy use data. Twenty-one property members met or nearly met the 2020 target of 20% reduction from their building baselines; of these 8 properties met the 2030 target of 50%. The average percentage of reduction for all properties was 14%. At the district level, the aggregated EUI of 2021 was 84.57 kBTU/sq ft, surpassing the 2020 target and representing a slight improvement over the 2020 results, so we are making progress toward the 2025 goal. The best news, though, is that the launching of the City’s decarbonization program later this year will provide exciting opportunities for substantial improvement in the performance of the District buildings.

$161K 148K lbs 11,482
Energy Cost Avoided CO2e Emissions Avoided Equivalent Number of Young Trees Planted (Each icon equals 500 trees)
As they did with energy data, all 31 properties (33 buildings) reported water use data in 2021. Twenty-one properties met the 2020 target of 20% reduction from their building baselines, with 15 of those properties meeting the 2030 target. The average percentage of reduction from the baseline for all reported properties was 33%.

The 2021 District Baseline WUI, calculated as the weighted mean of all building members’ water baselines, is 26.26 gal/sq ft. The District met and exceeded the 2030 target with a WUI of 12.76 gal/sq ft. It should be kept in mind, however, that a resurgence of the COVID-19 pandemic in the latter part of the year led to a discernible dropoff in downtown business activity. Although the slowdown did not have a dramatic impact on energy consumption due to the need to keep buildings heated as fall arrived, it did affect water use.
$162K
Water Cost Avoided

5.6M
Gallons Saved

325K
Equivalent Number of Showers Saved (Each icon equals 10,000 showers)

TRANSPORTATION UPDATE

Transportation emissions data for commuting were obtained via an online survey sent to tenants and workers in member buildings. The response rate rose slightly from 40% in 2020 to 42% in 2021. The transportation emissions of the District are benchmarked as the annual emissions of carbon dioxide equivalent (CO2e) per commuter. The baseline for the District is 1501 kg CO2e/commuter/yr.

Our survey in 2020 was designed to capture the dramatic changes in commuting patterns due to the arrival of COVID-19. The survey
questions were divided into three periods: 1) Pre-COVID (January to mid-March); 2) Lockdown (mid-March through June); and 3) Reopening (July through December). Responses for each period were analyzed separately and then weighted by the number of days to determine the overall transportation emissions for the entire year.

![2021 Commute Modes Pie Chart]

Not surprisingly, the COVID-19 pandemic led to a notable decrease in the use of transportation. Before COVID, only about 10% of respondents worked at home. With the 2020 spring lockdown, the proportion of remote workers jumped to 45%, and even with the reopening in the second half of the year, 32% of the respondents continued to work remotely. Taken as a whole, in 2020 the District achieved 1172.8 kg CO2e/commuter/yr, below the 2020 target of 1200.8 kg CO2e/commuter/yr.

For 2021 we dropped the periods and asked about the year as a whole. Although the pandemic continued in 2021, with an upsurge in the latter part of the year, the proportion of remote workers declined to 28%. In addition, the percentage of commuters who drove alone jumped from 39% during the 2020 lockdown to 51%. The increase in driving to work saw a corresponding rise in transportation emissions to 1706.6 kg CO2e/commuter/yr, well above the 2020 target and actually exceeding the level of emissions generated before the onset of the pandemic in 2020. Clearly, commuter emissions will be a major area of concern as the City of Ithaca works to achieve its goal of community-wide carbon neutrality by 2030.
**CASE STUDIES**

For a complete list of case studies, please visit our [website](#).

**Press Bay Court**

John Guttridge, along with his business partner David Kuckuk, has forged an innovative path on the west side of the Commons, breathing new life into West State/MLK, Jr. and Green Streets. Their company, Urban Core, LLC, has provided an exciting example of how to transform old structures into fresh-looking, low-carbon buildings that help create a vibrant neighborhood.

Press Bay Alley, just down the street, was one of the original fifteen buildings in 2016 when the Ithaca 2030 District officially launched. In 2021, Urban Core added two more buildings to the District: Press Bay Court and the old Ithaca Journal building. Press Bay Court is especially impressive because Urban Core took a rundown, vacant building and turned it into a distinctive mixed-use destination that provides a nice complement to Press Bay Alley and, like the latter, is fossil-fuel free.

The renovation, completed in late 2018, created several small-scale retail spaces on the ground floor and four one-bedroom apartments on the second floor, adding some moderate-income housing to a market seriously deficient in this category. Some main features implemented during the renovation include:

- High-efficiency air source heat pumps that provide heat and air conditioning
- All LED lighting
- New EnergyStar electric appliances, including for cooking
- Airtight spray foam insulation and high-performance rigid foam on the roof
- Expansive new windows on the ground floor that take advantage of the natural light

The building sailed past the 2025 reduction targets in 2021 for both energy and water performance and came very close to meeting the 2030 reduction targets. Similar to the 104 East State St. building on the Commons, which we highlighted in last year’s annual report, Press Bay Court demonstrates what existing properties can achieve by incorporating standard green improvements, and underscores the fact that bleeding-edge technology is not necessary to significantly reduce the carbon footprint of an already existing structure.
GreenStar Cooperative Market

The flagship store of the GreenStar Food Co-op opened at its new location in May 2020 as a model of environmental stewardship. From the beginning GreenStar has sought to support regional farmers and producers, and provide its customers with as many local products as it can. Currently, local products make up more than 25% of its sales. Now the Co-op has a building to match its commitment to sustainable foods.

The 35,000 square foot facility at 770 Cascadilla St. repurposed an already existing building, incorporating under one roof not only the store but also the classroom, administrative office, and kitchen spaces previously housed in separate buildings. The expanded parking lot was constructed using pulverized material from a demolished warehouse, reducing the need for new materials, and upgraded insulation was added to the walls and roof.

Other sustainable features of the building include:

- Super-efficient air source heat pumps that meet 100 percent of the building’s space heating and cooling needs
- Building systems, including the heat pumps, powered entirely by electricity from a local community solar farm
- All LED lighting, energy-efficient appliances, and high quality windows
- Increased accessibility such as wider aisles, counter heights designed with wheel-chair users in mind, and accessible parking spaces in front of the store with open spaces on both sides, not just one

The building’s total energy efficiency is 40 percent higher than required by current codes, minimizing the building’s greenhouse gas emissions while enhancing comfort for customers and employees. In recognition of the Co-op’s impressive achievement in reducing its carbon footprint and promoting sustainable heat pump technology, HeatSmart Tompkins recently honored GreenStar with its Award for Outstanding Earth Stewardship. GreenStar joins Purity Ice Cream as the second 2030 District member to have won this award.

Founded the year after the first official Earth Day in 1970, GreenStar has maintained its commitment, in the Co-op’s words, “to ecological responsibility,” striving “to act with care and regard for the ecological consequences of our decisions.” This consistent adherence to green practices has resulted in GreenStar meeting the Ithaca 2030 District’s 2025 target for energy performance and 2030 target for water reduction.
WHO WE ARE (As of 12/31/21)

Property Members

• Alternatives Federal Credit Union
• Argos Inn
• Autumn Leaves Used Books
• City of Ithaca
• Cornell Cooperative Extension - Tompkins County
• Finger Lakes ReUse Center
• GreenStar Co-op
• HOLT Architects
• Homegrown Skateshop
• Ithaca Bakery
• Ithaca Connected / Cascadilla Oasis, LLC
• Kitchen Theatre
• New Roots Charter School
• Paleontological Research Institute & Museum of the Earth
• Petrune Vintage
• Printing Press / East State, LLC
• Purity Ice Cream
• Sciencenter
• Silk Oak Studio
• Tajem Engineering
• Tompkins County
• Tompkins County Chamber of Commerce
• Town of Ithaca
• Travis Hyde Properties, LLC
• United Way of Tompkins County
• Urban Core, LLC
• William Henry Miller Inn

Professional Stakeholders

• Building Performance Contractors Association of New York State
• HOLT Architects
• Performance Systems Development
• STREAM Collaborative
• Taitem Engineering

Community Stakeholders

• City of Ithaca
• Cornell Cooperative Extension - Tompkins County
• Downtown Ithaca Alliance
• HeatSmart Tompkins
• Local First Ithaca
• Park Foundation
• Tompkins County
• Tompkins County Area Development
• Tompkins County Chamber of Commerce
• Tompkins County Climate Protection Initiative
Advisory Board

• Terry Carroll  
  Sustainability Planner, Tompkins County

• John Guttridge  
  Managing Member, Urban Core, LLC

• Jan Rhodes Norman  
  Founder, Local First Ithaca

• Rebecca Evans  
  Sustainability Planner, City of Ithaca

• Conrad Metcalfe  
  Executive Director (ret.), Building Performance Contractors Association - NYS

• Lou Vogel  
  President, Taitem Engineering

• Andrew Gil  
  Associate, HOLT Architects

• Guillermo Metz  
  Energy Team Leader, Cornell Cooperative Extension - Tompkins County

Staff

• Peter Bardaglio  
  Executive Director, Ithaca 2030 District

• Dhruv Misra  
  Intern, Cornell University 2024

Dan Burgevin's Mural, "Sunrise on the Green New Deal," located on the corner of West Buffalo Street and North Fulton Street in downtown Ithaca, NY. (Ithaca Murals). Back cover photo: "City Lights" by Meghan Hess (Flickr, CC BY-NC-ND 2.0).
