It is with great pleasure that we release the Cleveland 2030 District’s 2015 report. The City of Cleveland’s Office of Sustainability holds an annual summit for all stakeholders of the community to come together to advance the city’s sustainable vision and mission. It was at the September 2010 summit that a working group was formed to explore ways in which commercial building owners and property managers could be engaged in drastically reducing energy consumption. That working group led the way to Cleveland becoming the second established 2030 District following Seattle.

We have made significant progress since the District was formed in 2011. We have 40 million square feet of commercial building space, representing 168 buildings participating. Our footprint has expanded from the original downtown business district to now include the cultural, medical and educational center of the city, University Circle.

Cleveland 2030 District is proud of its collaboration with several other environmental organizations in Northeast Ohio. Through these collaborations, we’ve been able to provide our property owners, managers and tenants with a variety of educational sessions, financing seminars, green lease initiatives and networking opportunities. These organizations are all working together as a testament to the community’s dedication to create what we call here in Cleveland, a Green City on a Blue Lake. Cleveland 2030 District is proud to be part of this movement, focusing attention on one of the largest users of energy: the commercial building.

The 2030 Challenge for Planning calls for more than just energy reduction. We have also made great progress toward creating a baseline for water use and transportation emissions. With the assistance of local agencies, we’re confident that both these baselines will be created by the first quarter of 2016.

I would like to take this opportunity to thank all our supporters. We are fortunate to have an engaged Board of Directors who volunteer their time and talents to guide the organization. Each of our Professional Partners have made a commitment to help our properties assess their buildings and create a roadmap to reduce operating cost and increase efficiencies. Our Community Partners have supported our mission and collaborated with us to reach property owners and managers. Of course, we are deeply grateful to our funders and sponsors, making our District a sound and sustainable organization. But we would be nowhere without the property owners and managers who have shown leadership in our community by joining the District to focus attention on conservation, operational efficiency and furthering the City of Cleveland’s sustainable development.

CYNTHIA CICIGOI, EXECUTIVE DIRECTOR
Cleveland 2030 District seeks to develop realistic, measurable, and innovative strategies to assist property owners, managers, and tenants in meeting aggressive energy reduction goals.

The Cleveland 2030 District is an interdisciplinary private-public collaborative working to create a groundbreaking high performance building district in downtown Cleveland, Ohio. With the Architecture 2030 Challenge for Planning providing the District’s performance goals, Cleveland 2030 District seeks to develop realistic, measurable, and innovative strategies to assist participating property owners, managers, and tenants in meeting aggressive goals that reduce environmental impacts of facility construction and operations. This collaborative, which as of October 2015 represents a combined 168 buildings and approximately 40 million square feet of real estate located in Downtown Cleveland and University Circle, is actively working to achieve 50% reductions (below baseline) in energy use, water consumption, and transportation emissions by the year 2030.

The Cleveland 2030 District is focused on building energy performance due to the fact that buildings consume a significant portion of the energy used in the U.S. According to the US Energy Information Administration, the building sector consumes nearly half (47.6%) of the energy produced in the U.S. More specifically, 41.7% of total energy consumption is used in building operations, with building construction and materials accounting for 5.9% (Architecture 2030, 2012). The building sector consumes energy more than other sectors such as transportation and industry. Additionally, nearly 75% of the electricity produced in the U.S. is used just to operate buildings.

Despite these statistics, there are great opportunities to reduce the energy consumed by existing buildings and maximize the efficiency of new construction. Energy efficient buildings have lower operating costs, higher rates of occupancy, enhanced asset values, and improved occupant health. Building owners become more competitive in their market while increasing their profits.

District Goals for Existing Buildings+

- Energy Use: * A minimum 10% reduction below the national median (based on CBECS 2003) by 2015, reaching a 50% reduction by 2030.
- Water Use: ** A minimum 10% reduction below the Cleveland District average by 2015, reaching a 50% reduction by 2030.
- CO2 of Auto & Freight:

  - 10% by 2015
  - 50% by 2030

+ Goals represent the combined reductions for all 2030 district bldgs.
The 2030 District’s model arises from a shared vision of what we want the future of our cities to look like.

168 Buildings

—a total of—

40 Million sq. ft.

have joined the challenge since the District formed in 2011.
It is about intentionally shaping our future by leveraging the collaborative strength of our communities, businesses, and governments to achieve common environmental, economic, and social goals.

Cleveland 2030 District buildings, which are represented by owners, managers or tenants whom have signed up to participate in the District, are known as Property Adopters. As of this writing, of the 168 properties in the Cleveland 2030 District, approximately 66% are reporting their energy consumption in Portfolio Manager, which is energy tracking software developed by the US Department of Energy’s EnergyStar program. These sharing buildings make up 40 million square feet, which is approximately 77% of the total square footage of Property Adopter buildings in the District. Cleveland 2030 District staff provide assistance to new Property Adopters in setting up their Portfolio Manager accounts and also provide training on entering data.

Our efforts here in Cleveland are part of a growing network

The 2030 District model is currently being emulated in 11+ cities across North America.
In less than a year 21 University Circle properties representing 7.5 million square feet have committed to the goals of the Cleveland 2030 District.

Photo Courtesy of the Cleveland Museum of Art
University Circle contains several historic properties, and many properties in the area are undertaking major new construction, efficiency, and operational improvements to buildings of all types and sizes.

District Expansion Into University Circle

In early 2015, the Cleveland 2030 District expanded into University Circle in addition to the Downtown footprint. University Circle is a world class center of education, medical, and arts/cultural institutions located four miles from Downtown. This area contains many unique buildings and offers a tremendous opportunity to expand the impact of the Cleveland 2030 District. While University Circle contains several properties which are historic in nature, many properties in the area are undertaking major new construction, efficiency and operational improvements to buildings of all types and sizes.

University Circle contains an estimated 28,200,000 square feet of commercial building space, which is approximately 25% of the total District’s area of 111,000,000 square feet. University Circle, Inc., which owns several buildings, was the first Property Adopter in the area. Their commitment was followed by an additional 7 Property Adopters as of October 2015; there are currently 21 Property Adopter buildings in University Circle representing approximately 7.5 million square feet.
The State of Ohio does not currently have a mandated energy efficiency resource standard. In addition, the energy providers used in Cleveland do not typically provide energy efficiency incentives to commercial customers. Given this limited incentive climate, Cleveland 2030 District is committed to providing Property Adopters with information regarding programs pertaining to energy efficiency and financing options for renovations to increase building performance.

Cleveland 2030 District collaborates with several organizations that promote environmental conservation. These collaborative efforts have resulted in a number of educational events and programs.

With the Northeast Ohio Chapter of the US Green Building Council (NEO USGBC), C2030D has offered a series of events that help building owners and managers review the process of assessing their building, targeting projects, delivering and measuring results. Each session included professional speakers as well as building owners sharing real experiences and best practices. These sessions were presented as part of NEO USGBC's Green Building Challenge which C2030D supports. Several of the C2030D participating buildings also participated in the Green Building Challenge.

COSE (Council of Smaller Enterprises) and C2030D came together to present an informative session on Commercial Property Assessed Clean Energy (C-PACE) financing options. This session allowed building owners to learn about this alternative financing option. C2030D also collaborated with COSE on a Green Lease Program with the City of Cleveland’s Office of Sustainability and IMT. These sessions were designed to start the conversation between building owners and tenants to learn ways in which energy efficiency projects can be mutually beneficial.
Cleveland 2030 District also provides its Property Adopters with a list of Professional Partners. These professionals can provide assistance with anything from energy audits, low cost/no cost assessments to solar arrays, financing, plumbing supplies and more. These partners support the work of C2030D and offer discounts or special services to Property Adopters.

On a national level, Architecture 2030 is working to develop a network-wide Special Purchasing Alliance which will offer discounts on a variety of products and services focused on the reduction of energy and water consumption and CO2 emissions from transportation; the three targets of the 2030 Challenge for Planning.

According to the U.S. Department of Energy, 90% of commercial buildings in the U.S. are less than 50,000 square feet. Through a U.S. Department of Energy grant targeting such small buildings, Cleveland 2030 District participated in a program called the Small Commercial Toolkit Project. This project developed an online tool to be used by small commercial building owners and managers to ascertain which types of retrofits and efficiency projects would provide the most value for their property in terms of energy savings with the shortest payback period. Cleveland 2030 District worked with their small commercial buildings to test this new tool and provide feedback for improvements in the project’s prototype phase. The Small Commercial Toolkit will soon be available for use by all the Districts.

**For Building Owners, Managers and Developers**

![Symbol](image)
Utilize special financing programs

![Symbol](image)
Improve competitive positioning

![Symbol](image)
Receive comparative analysis reports

![Symbol](image)
Access exclusive incentives, discounts & programs

**For Professional Stakeholders**

![Symbol](image)
Bring the cutting edge of building performance to your customers

![Symbol](image)
Interact with market-leading clientele

![Symbol](image)
Get recognized

![Symbol](image)
Connect to new ideas, education & opportunities for your customers

**For Community Stakeholders**

![Symbol](image)
Extend your organization’s influence

![Symbol](image)
Connect with building owners/operators & like-minded organizations

![Symbol](image)
Expand your outreach

![Symbol](image)
Gain access to new thought leadership
In order to create a high performance building district as described by the 2030 Challenge for Planning, Cleveland 2030 District must have a way of understanding trends in individual building and whole-district utility use. Therefore, in addition to committing to specific energy, water, and transportation emission reduction goals, Property Adopters agree to work with the Cleveland 2030 District to create an account for their property(ies) in EnergyStar’s Portfolio Manager energy and water tracking software, or to share their Portfolio Manager account with Cleveland 2030 District if they already have one.

Cleveland 2030 District provides participating Property Adopters with a performance report for their building(s) twice annually. This report allows Property Adopters to have a snapshot of their building’s performance, as well as details about how the building compares to an expected baseline and other similar District buildings. Anonymity of other buildings and Property Adopters is assured by the individualized report formatting and details.

A summary of the Cleveland 2030 District’s collective progress in measuring energy performance is described in the next section. Additionally, the District’s progress as of this writing in developing baselines for measuring water use and transportation emission are outlined in the following sections.
The Cleveland 2030 District challenges its members to unite toward aggressive, yet attainable, goals which are specific to either existing buildings or new construction. Pursuing these goals as a district sets us on a path to carbon neutrality while benefiting local businesses and creating jobs.

**District Goals for Existing Buildings**
- **Energy Use**: 10% by 2015, 50% by 2030
- **Water Use**:
- **CO₂ of Auto & Freight**:

**District Goals for New Construction**
- **Energy Use**: 60% by 2015, Carbon Neutral by 2030
- **Water Use**
- **CO₂ of Auto & Freight**

An immediate 60% reduction below the national median, with incremental targets and reaching carbon neutrality by 2030.

How Each Building Helps the District Meet these Goals

1. **Assess**: Compare your building to similar buildings to figure out what you should be using.
2. **Target**: Set your target.
3. **Deliver**: Use the District resources to improve your building's performance.
4. **Measure**: Save time, money, resources, and measure progress.

How We Set your Targets

- **The Method**
- Your Building (Existing or New) compared to Similar Buildings

C2030D determines an energy, water and transportation use baseline for your building based on what other similar existing buildings are using.

For Example: Energy Use for an Existing Building

<table>
<thead>
<tr>
<th>District Goals: Reductions of</th>
<th>50%</th>
<th>35%</th>
<th>20%</th>
<th>10%</th>
</tr>
</thead>
<tbody>
<tr>
<td>You</td>
<td>Annual energy use</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>National Median</td>
<td>Baseline annual energy use*</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Congratulations!** Your building uses 8% less than the national median (CBECS 2003). Therefore to reach the 2015 goal of 10% reduction below the national median you would need to make a 2% reduction in your building’s energy use.
Existing buildings participating in the Cleveland 2030 District are committed to a 50% reduction in energy consumption (below a specific baseline for their building type) by the year 2030, as measured by the national median site energy use intensity (EUI) set by the 2003 Commercial Building Energy Consumption Survey (CBECS). Energy demand reduction targets for participating buildings which are newly constructed or major renovations are more aggressive, with a goal of carbon neutrality by 2030. EUI is a common measure of energy performance, and is simply a building’s normalized annual energy use divided by its gross square footage.

In accordance with the 2030 Challenge for Planning, the Cleveland 2030 District includes incremental targets, beginning with a 10% energy reduction by 2015 (70% for new construction). Using Portfolio Manager, Cleveland 2030 District works with each participating property to establish a property-specific EUI baseline that takes into account current use types, operational characteristics (operating hours, occupancy, etc.), and Cleveland’s climate region.

As of October 2015, total of 107 Cleveland 2030 District’s Downtown properties (73% of the buildings participating from the Downtown District) have set up and shared their Portfolio Manager accounts with C2030D. Of these, 62 were aggregated to provide a snapshot of Cleveland 2030 District progress toward the energy reduction goal of 10% below baseline by 2015. That total represents 53% of participating Downtown properties (by square footage).

One of the benefits Cleveland 2030 District provides to Property Adopters is working with them to develop accurate and complete Portfolio Manager accounts, an ongoing process given that several new accounts are added to the District each quarter. The 62 buildings’ performance data analyses are considered by Cleveland 2030 District to have such accurate and complete accounts. The properties which were excluded for this report had incomplete information in their Portfolio Manager accounts at the time of the analysis, or may represent a non-conforming space type for which the energy baseline is thought to be non-representative of the building’s actual performance. University Circle buildings were not included in the analysis at this time.

The 62 Downtown buildings with accurate and complete Portfolio Manager accounts collectively have impressive building performance – they are operating at 24.2% below the baseline used by Cleveland 2030 District to ascertain building energy use.
Collectively, these buildings have already exceeded Architecture 2030’s Challenge for Planning goal for the year 2020. In addition, Downtown offices collectively scored well for building performance, with a combined EnergyStar score of 77. Energy Star scores buildings on a scale of 1-100 with 50 representing the median and a score of 75 or higher representing a top performer. Congratulations to these building owners.

Another way to look at building energy use is from a Downtown District-wide standpoint. To make this calculation, the energy use of the 62 buildings with accurate and complete Portfolio Manager accounts was considered along with all 989 properties in the Downtown District. For the additional 927 buildings, an assumption was made that these were operating at the expected baseline for their building use types in order to make the calculation. Given this, Downtown District-wide energy consumption is 4.7% below the aggregated baseline – in pursuit of the 2015 Architecture 2030 Challenge for Planning reduction goal of 10%. This Downtown District-wide calculation shows how the 62 sharing buildings positively impact the rest of the Downtown District, by bringing total energy use down by almost 5%.

Assuming all Downtown downtown buildings are operating at their expected baseline, total energy use in kBTUs per year is expected to be 7,818,145,643. However, including the 62 accurate and complete sharing buildings in the analysis brings the total annual energy use down to 7,450,479,918 kBTUs. This savings of 367,665,725 kBTUs per year is equivalent to removing the total energy use of almost 3,000 single family homes in the Midwestern US.

The Cleveland 2030 District is saving an average of 367,665,725 kBTUs per year, equivalent to removing the total energy use of almost 3,000 single family homes in the Midwestern US.
Cleveland 2030 District is working to create a water baseline. A water baseline can be thought of as being analogous to the energy baselines used in software such as Portfolio Manager which allow for the calculation of the Energy Use Intensity (energy use per square foot) of buildings. As such, a water baseline calculates the Water Use Intensity of buildings.

C2030D staff is working to obtain the necessary aggregated, anonymous water use data from the City of Cleveland’s Water Department. In order to create a water baseline, C2030D needs to understand the water use within commercial properties Downtown and in University Circle. C2030D is confident that with the help of the Water Department, the baseline will be in place by the first quarter of 2016. Once the baseline is created, C2030D can begin to measure and benchmark properties’ water use intensity and help them create a strategy for water conservation.

C2030D is working with the Water Department to understand historic consumption trends and use this to define water baselines.
Cleveland 2030 District has been working for quite some time to develop a transportation baseline and now has the necessary data to calculate this metric. Seattle was the first 2030 District to establish a transportation baseline, and their work allowed us to understand the variables and equations involved, some of which are locally specific and others which can be found in nationally relevant datasets. For the purposes of the 2030 Districts, a transportation baseline is a measurement of the annual carbon emissions of the average District commuter. Carbon emissions vary due to factors such as commuting distance and mode of travel.

Initially, the Northeast Ohio’s Metropolitan Planning Agency, NOACA (the Northeast Ohio Area-wide Coordinating Agency) provided us with survey and model data pertinent to the Downtown district. Their model used Cleveland’s Central Business District as the study area measuring commuting patterns into and out of Downtown. The Central Business District is nearly identical to Cleveland 2030 District’s Downtown District, therefore C2030D considers the NOACA model the best currently available data pertaining to commuting patterns.

For many commuting modes, nationally relevant data pertaining to carbon dioxide emissions compiled by the US Environmental Protection Agency is used by C2030D in the transportation metric. Other modes such as light rail, heavy rail, and various types of commuter buses require locally specific emissions factors. C2030D received such local data from the Greater Cleveland Regional Transit Authority.

The next step for C2030D is to begin surveying the employees of Property Adopter buildings on their commuting habits, such as miles traveled and modes chosen. These employee surveys will allow C2030D to understand how the carbon dioxide emissions due to transportation of Property Adopters compares to the District’s transportation baseline of average emissions per commuter. C2030D anticipates that these employee surveys will begin in the first quarter of 2016.
Get Involved: Everyone is Invited

In order to provide the most accurate and relevant information on building and district performance, each member property is asked to share its energy and water use data with the C2030D. By entering this information into ENERGY STAR® Portfolio Manager, building owners and managers ensure that the performance comparison reports you receive from the District give an accurate reflection of your building against that of its peers. All data is kept anonymous; your data will never be shared publicly in marketing or messaging without your explicit permission.

Join us today! .................................................................

Visit www.2030districts.org/cleveland

There are currently NO FEES associated with joining the Cleveland 2030 District.

For more information on membership requirements, or if you are interested in joining, visit http://www.2030district.org/cleveland/join-2030-district or email us at info@2030district.org.

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The Cleveland 2030 District Board of Directors mirrors its membership: large, diverse and engaged.

The Board of Directors helps keep the mission and goals of the 2030 District grounded in the realities of day-to-day business while bridging gaps in the built environment supply chain.

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Photo Courtesy of Will McKnight