DENVER'S ENERGY BENCHMARKING ORDINANCE

SOLUTION OVERVIEW
As a part of its 80x50 Climate Action Plan, the City and County of Denver set a goal to reduce greenhouse gas (GHG) emissions 80% by 2050. In response to this overarching target, Denver set sector-specific goals to establish a clear path to 2050 with a strong emphasis on measurable carbon reductions from all key sectors. Denver determined that commercial and multifamily buildings produce 51% of local GHG emissions, the largest contributor of any sector. To combat these emissions, Denver set the goal to reduce energy consumption in commercial buildings 10% by 2020, 30% by 2030, and 50% by 2050. It also set a related goal to reduce heating emissions 50% by 2040.

ORGANIZATION TYPE
Local Government

GOAL
To reduce greenhouse gas (GHG) emissions 80% by 2050 in the City and County of Denver by reducing energy consumption in commercial buildings 10% by 2020, 30% by 2030, and 50% by 2050, and reducing heating emissions 50% by 2040

BARRIER
Commercial and multifamily buildings were responsible for a majority of the GHG emissions in Denver, but due to low market awareness lacked effective energy efficiency resources and toolkits to address the problem

SOLUTION
Denver’s Energy Benchmarking Ordinance requires building owners and managers to annually assess and report their building’s energy performance while providing them with targeted resources to improve energy efficiency

OUTCOME
Since 2016, benchmarked buildings have cut energy use by 0.4% on average annually while all buildings have increased energy use by 1.2% on average annually. Denver achieved a 90% compliance rate in each of the first three years (2017-2019) of the ordinance.
POLICIES
The Denver City Council passed the Energize Denver Benchmarking Ordinance in 2016. The ordinance established an energy efficiency program that requires covered building owners to benchmark building energy performance and make that energy performance information publicly available to raise awareness and drive action. As of 2017, the ordinance requires buildings 25,000 square feet or larger to annually assess their energy performance using ENERGY STAR® Portfolio Manager and report it to Denver. Denver publishes the building energy performance data annually at www.energizedenver.org to enable the market to better value energy efficiency.

PROCESS
In 2016, Denver’s Department of Public Health & Environment (DDPHE) created the Energize Denver Task Force to gather feedback on recommendations aimed at significantly increasing energy efficiency in the commercial and multifamily building sectors. The Task Force consisted of local commercial and multifamily building owners, managers, and investors, as well as housing advocates, green building experts, and representatives from Xcel Energy, Denver’s local investor-own utility. DDPHE staff managed the Task Force process to ensure Denver captured stakeholder feedback.

Over approximately five months, the Task Force met eight times to draft recommendations for how Denver could reach its GHG emission reduction goals. The Task Force’s report included a recommendation that Denver adopt a building benchmarking requirement.

After receiving the recommendation from the Task Force, DDPHE staff and the Denver Attorney’s Office wrote the ordinance, implementation rules, and regulations.

To make Denver’s Energy Benchmarking Ordinance possible, Denver established a process to submit energy reports using ENERGY STAR Portfolio Manager, as well as a Help Center (click on “Benchmarking Help” for more details) to answer questions via phone and email. Denver developed the benchmarking report submission process in partnership with the U.S. Environmental Protection Agency (EPA), which manages the ENERGY STAR Portfolio Manager. Building owners submit energy benchmarking reports based on utility data, and the reports are tracked in a Salesforce-based system. Denver hired Overlay Consulting, a third-party vendor, to set up and customize the system to collect and track compliance, contacts, and addresses, in addition to running data quality checks in Salesforce. Overlay Consulting provides Denver with continued support through managing both the Salesforce system and the Help Center, including managing phone and email questions sent to the Help Center and assisting with compliance email reminders.

The benchmarking process is now under the leadership of the Office of Climate Action, Sustainability & Resiliency, and is no longer led by DDPHE.

OUTREACH
Denver sends compliance notices in the mail to inform building owners and managers of the
ordinance’s reporting requirements. Denver also provides building owners and managers with building scorecards (see template scorecard in the “Tools and Resources” section below), so they can compare their current energy usage with other Denver buildings and access information to help them implement energy efficiency improvements. With support of Overlay Consulting, Denver created an online public map of the benchmarking data and scorecards that is updated annually and provides unique information for each building in the portfolio, including building size, site energy use intensity (EUI), and ENERGY STAR Score. In addition, Denver partnered with the local utility, Xcel Energy, to train building owners and managers on how to upload their energy billing data automatically into ENERGY STAR Portfolio Manager each month eliminating the need for staff to manually update data into the system.

Denver also offers building owners and managers in-person training sessions to learn about the benchmarking process.

MEASURING SUCCESS
One of the key metrics that Denver tracks is the compliance rate with the Benchmarking Ordinance, because more consistent tracking and reporting of energy consumption data can lead to increased identification of energy and cost savings opportunities. Denver achieved 90% compliance rates in each of the first three years (2017-2019) the program was active. To assess energy consumption and savings, Denver uses the ENERGY STAR Score and site EUI metric measured in Btus per square foot. The ENERGY STAR Score is a simple and useful measure for building owners and managers to compare themselves to their peers while site EUI can be used to measure year over year energy efficiency improvements for individual buildings as well as city-wide.

Compliance rates are tracked through an automated report that updates as Denver receives and approves energy benchmarking reports from building owners for each compliance period. All of this is done in the same Salesforce system that receives and manages the individual building benchmarking reports. Each building’s energy benchmarking report lists its ENERGY STAR Score and site EUI. In addition, Denver’s third-party vendor created metrics on the online map and in each building’s scorecard that automatically calculates how a building’s ENERGY STAR Score compares to other buildings and how its site EUI has changed over time. Denver analyzes the data annually to see year-over-year trends and overall energy performance improvement rates. The analysis is published in the Energize Denver Annual Report.

OUTCOMES
Since 2016, the 3,016 benchmarked buildings have cut energy use by 0.4% on average annually while all buildings have increased energy use by 1.2% on average annually. Benchmarked buildings over 50,000 square feet saw 0.8% energy savings since 2016, while buildings between 25,000 and 50,000 square feet showed 1.25% energy savings. Energy performance has also varied by sector, where hotels and apartments or condominiums have seen a 4% and 3% improvement in weather normalized (“weather normalized energy is the energy a building would have used under average conditions”) site EUI, respectively. Additionally, Denver achieved a 90% compliance rate across all reporting years.

TOOLS AND RESOURCES
Denver created several resources to aid building owners and managers with the benchmarking

https://betterbuildingssolutioncenter.energy.gov/implementation-models/denvers-energy-benchmarking-ordinance

For more information, visit https://betterbuildingssolutioncenter.energy.gov
process, including: checklists (see below), scorecards (see below), a how-to video series, in-person trainings, one-on-one help sessions, and a Help Center (click on “Benchmarking Help” for more details) that provides assistance via phone or email. Overlay Consulting and a number of benchmarking service providers partner with Denver to provide building owners and managers additional on-the-ground support from pre-approved professionals to ensure best practices for each buildings’ energy performance benchmarking. In addition, Denver publishes the Energize Denver Annual Report that utilizes the benchmarking data reported each year to present the energy-saving progress and impacts of buildings covered by the Energize Denver Benchmarking Ordinance.