

# DRAFT PLAN FOR CREATING A MANDATORY BENCHMARKING AND TRANSPERANCY PROGRAM FOR

## EXECUTIVE SUMMARY

Energy efficiency is one of the most effective ways to cut costs. Understanding energy consumption is the first place to start when considering any energy efficiency effort. Energy use benchmarking is measuring a buildings energy use over time, and comparing it to other similar buildings. Energy benchmarking helps us understand our energy use, so that we can make changes that will help plan and prioritize limited resources in order to save money and save energy. According to ENERGY STAR® “Energy expenditures average more than \$2 per square foot in commercial and government buildings, making energy a cost worth managing.” ENERGY STAR® also notes that buildings that benchmark their energy use on a regular basis tend to reduce their energy consumption by 2.4 percent per year, on average. Benchmarking:

- provides objective data on energy use and the benefits of improvements;
- increases awareness, which may lead to behavior change;
- facilitates planning;
- provides a baseline for measuring improvements, and helps to develop a comprehensive energy management action plan
- provides data to evaluate the business case for capital investments in energy retrofits.

Many cities across the United States, including Austin have already implemented mandatory benchmarking programs. A mandatory program assures the participation of most of the covered properties, it provides additional information for comparison, and increased participation in benchmarking should lead to greater energy savings. Efficient buildings are not only more cost-effective, but also provide healthier and more comfortable spaces to live, play, and work—qualities that attract top talent and investment. Mandatory benchmarking programs are designed to improve air quality, boost the local economy, forecast resource planning, and attract new industry and talent.

Therefore, has prepared this plan to create a mandatory benchmarking program for the community. To achieve this goal we propose to create an ordinance covering , requiring them to benchmark . In order to develop and implement a successful program, we will work closely with a number of stakeholders, including government personnel, building owners and operators, and other partners and allies in the community. As we develop the proposed ordinance, we will work with stakeholder to refine which buildings will be covered, an implementation schedule, exceptions, penalties for on-compliance, and transparency requiremnts. The estimated budget for this project is:

Personnel	\$
Salary/fringe/overhead	\$
Marketing Material Development and Production	\$
Travel	\$
Outside Consultants	\$
Total	\$

The project will use several different tools to empower participants to benchmark their buildings and use that data to identify savings opportunities. We will also recognize the achievements of participants to help demonstrate the value of benchmarking to the wider community. After the program kicks off, we will regularly evaluate the impact of the policy and report to the stakeholders.

## INTRODUCTION

Benchmarking is the process of measuring a building's energy performance and comparing it with its energy baseline, or comparing the building's energy performance with the energy performance of similar types of buildings. Benchmarking buildings can provide owners with valuable data so that they can save money, reduce maintenance requirements and improve renovation cycle planning. Mandatory benchmarking programs are those where a community has adopted a policy requiring energy benchmarking and transparency from community members such as commercial property owners.

A mandatory program assures that most of the covered properties benchmark their properties and share their data. Having this data available helps building owners and operators better understand how they compare to their peers, and provides consumers information to help with energy strategy and planning. If a building owner realizes that their building is not performing as well as other similar buildings, they will be more likely to explore energy efficiency opportunities. Further, the benchmarking data can help government and planning entities better understand existing resource demands and potential resource constraints within the community, such as those for electrical distribution or water treatment infrastructure.

Overall, these policies typically lead to greater energy savings across the community. Cities pass these policies to ensure a clean, vibrant and competitive environment for local businesses and residents. Efficient utilization of resources serves to protect public health as well as improve the local economy through job creation from the resulting improvements as well as a way to set a community apart from its peers. These programs can help fight rising electrical rate payer costs because energy efficiency is typically less expensive than new generation. According to the Institute for Market Transformation<sup>1</sup>:

- Energy-efficient properties have occupancy levels up to 10% higher than less-efficient properties, rental premiums over 10% higher than less-efficient properties, and sale prices up to 25% higher than less-efficient properties.
- EPA data has shown that buildings that consistently benchmark save energy, the average annual savings is 2.45, with a total average savings of 7% over baseline in 3 years of change<sup>2</sup>. And the data looked even better for poorly performing buildings, buildings starting with below average energy efficiency in 2008 (i.e., score under 50) saved twice as much energy as those starting with average scores. Further, the EPA reported that for a 500,000 square foot office building, a savings of 2.4% for three consecutive years is equivalent to cumulative energy cost savings of \$120,000<sup>2</sup>.

For example: In Washington, D.C., buildings that benchmarked from 2010 to 2012 under the District's ordinance have reduced energy use by 9% on average, adjusting for weather, over that 3-year period.

- Local businesses in markets with existing benchmarking and transparency laws reported significant new demand for energy efficiency services and are hiring new employees after the adoption of a benchmarking ordinance, with this demand driven by increased awareness of building energy efficiency opportunities.

For example: Out of Philadelphia's 7,000 commercial buildings, 77% need energy upgrades. Retrofitting them would generate more than \$600 million in local spending and support 23,000 jobs. Benchmarking was identified as a solution for helping identify buildings most in need of improvement.

- Benchmarking data provides unparalleled insight into how buildings perform, enabling more informed decisions.

For example: In San Francisco, account representatives of Pacific Gas and Electric Company use benchmarking data to streamline outreach efforts and reach out to building owners about specific efficiency programs.

We have designed this customized guide to help you create a mandatory benchmarking program for your community. The information in this plan has been built using the Texas State Energy Conservation Office on-line energy benchmarking planning tool.

## **STEP 1 - CREATE INTERNAL STAKEHOLDER GROUP TO DEFINE GOAL, OBJECTIVES, AND SCOPE**

Successful benchmarking programs require the active involvement of multiple internal and external stakeholders. The first set of stakeholders that you need will be city employees, including the people who will plan, organize, and implement the program, along with your communications team. These stakeholders will help draft the ordinance/resolution; engage with council members and other key decision makers; and conduct data gathering management, and analysis, policy enforcement, outreach, capacity building; etc.

A worksheet has been provided in the **appendix** to help you identify your internal stakeholders.

In order to get the internal stakeholders engaged and involved in the project, it will be necessary to explain to them the benefits of energy benchmarking. Discuss with your internal stakeholders why this is being proposed and make sure that there is buy-in. The Institute for Market Transformation has a two-page fact sheet, "Energy Benchmarking and Transparency Benefits" that can be downloaded from here:

[http://www.imt.org/uploads/resources/files/IMTBenefitsofBenchmarking\\_Online\\_June2015.pdf](http://www.imt.org/uploads/resources/files/IMTBenefitsofBenchmarking_Online_June2015.pdf)

Once you have commitment from the internal stakeholders to participate, work with them to develop the initial scope and project goals and objectives, with the understanding that these may be later modified based on input from external stakeholders. First, work with internal stakeholders to clarify the intent of the ordinance. Typical goals for mandatory benchmarking programs include:

- Reduce energy use in commercial office space
- Motivate energy efficient behavior by tenants
- Build a reputation as a sustainable community
- Improve air quality and public health
- Reduce rate payer costs by avoiding adding generation
- Increase economic competitiveness through sustainable business attraction

Once you have determined the overall goal of the mandatory program, set up clear, measurable and achievable objectives so that the team can track progress toward the goal. Examples of specific

objectives include:

- Have 95 % compliance with the law by the end of year 1
- Educate 100 people about how to use benchmarking information to help create an energy management strategy
- Establish a baseline and accompanying goals for community wide energy intensity reduction.

You can use the Benchmarking and Disclosure Toolkit to help you create your proposed objectives, strategies, tactics, and success measures, or you can use the worksheet provided in the Appendix

## **Developing Policy Scope**

Once you have reached consensus on the project goals and objectives, work with stakeholders to create the scope for the project. This first step in scoping the project should be developing an inventory of buildings that may participate in the program. It is important to develop this inventory and learn about the building stock early on in the process. It will allow you to better define the parameters of your program, such as building size threshold, as well as key stakeholders that you will need to engage. The best place to get this information is from the tax appraisal district and possibly the permitting department. The primary data you are looking for is:

- Building Address
- Building Square Footage
- Property Type
- Building Owner
- Building Owner Contact Information
- Building Manager Contact Information

Other data that is helpful includes:

- Building Age
- Building Occupancy
- Building Use

Based on the analysis of your community building stock and stakeholder feedback, you will need to include the following in the policy scope: The proposed scope includes:

With the following building data to be benchmarked:

## **STEP 2 - WORKING WITH OUTSIDE STAKEHOLDERS TO DEVELOP AN ORDINANCE**

Successfully passing a benchmarking and transparency policy requires that a considerable number of stakeholders be actively involved in the process. This requires developing marketing collateral, developing a stakeholder base, scheduling multiple one on one meetings, stakeholder group engagement meetings, and presentations to a variety of audiences.

Building owners and operators of covered buildings have the greatest stake in this policy and will likely have the most questions to be answered. Therefore, it is important to engage them early and often. You will also need to engage with specific industries and associations, such as realtor associations, the Building Owners and Managers Association (BOMA), commercial real estate

investor groups, etc.

It is also important to engage a wider group of stakeholders. Stakeholders that are potential allies and advocates for these policies include: community planning groups, energy system vendors, energy services contractors, consultants, academic institutions, and other governmental entities such as the county public health department, local school district and the state energy office, and environmental non-profits. These groups can help with clearly communicating the value of the policy. Other stakeholders come from all areas of the energy ecosystem. For example:

- Local utility providers can provide explain what data is available and how to best access that data, and can discuss what (if any) efficiency incentives are available to utility customers.
- Engineers, and architects can provide technical support.
- Third party organizations such as universities or research institutes can assist with data collection and analysis that will be used as you develop the ordinance.

Some stakeholders will be easier to engage and get buy-in than others. This should be expected and planned for. Those on the energy services and supply side will typically be supportive. They see a business opportunity for greater energy efficiency investment. However, this support should not be taken for granted and they should be regularly engaged and included in stakeholder meetings.

It may be more challenging to build support among building owners, operators, property managers and brokers. These stakeholders are typically concerned about the time and expense related to implementing these policies. The costs and benefits of the program, along with reasonable exemptions, should be considered in the planning phase of the ordinance development. Further, many argue that they are already doing benchmarking and why is government requiring this to be done. This argument can be carefully managed with the proper evidence and materials explaining that this program is very low cost both in time and resources. Resources include:

- ENERGY STAR® two-page fact sheet “Benchmarking and Energy Savings”<sup>3</sup>
- ACEEE two-page fact sheet, “Energy Efficiency and Economic Opportunity”<sup>4</sup>
- ACEEE research report, “Multiple Benefits of Business-Sector Energy Efficiency: A Survey of Existing and Potential Measures”<sup>5</sup> Russell, 2015

For those stakeholders that are already benchmarking, acknowledge that they are good stewards and this should be minimal cost to them. Then, discuss how the policy will help those who are not benchmarking improve their ability to manage their buildings and identify opportunities to save energy and operating costs. Poorly performing buildings are more expensive to operate and typically result in energy savings twice that of high performing buildings when they undertake a benchmarking program. Larger property owners and managers with national portfolios are likely to have seen these policies in the past in other communities, and may be more willing to participate as they have systems in place and have seen the benefits of these programs in other communities. Therefore, it can be helpful to engage these entities at both the local and national level

Some stakeholders may express that it is not the appropriate role of government to improve the economic performance of a privately held building. For these conversations, you can explain that poorly performing buildings result in greater costs to the community and society as a whole and it is government’s role to properly manage and reduce externalities that negatively impact the community. In addition, positive economic impacts from the policy are good for the community as a whole. Some resources explaining these benefits to communities include:

- The ACEEE two-page fact sheet, “Energy Efficiency and Economic Opportunity”<sup>6</sup> - ACEEE
- The ACEEE white paper, “Energy Efficiency Job Creation: Real World Experiences”<sup>7</sup> Bell, 2012

- The research paper, “Understanding the True Benefits of Both Energy Efficiency and Job Creation”<sup>8</sup> Bell, 2014
- The research paper “Energy Benchmarking of Commercial Buildings: A Low-Cost Pathway toward Energy Efficiency”<sup>9</sup> Sun, Cox, and Brown , 2013

## Outside stakeholders for this project include

Building Owners/ Operators / Property Mangers	Industry Associations for Buildings - owners/ operators / realtors	Energy Vendors/Engineers/ Architects	Industry Associations for Vendors/Engineers/ Architects	Public/Non Profit
CBRE	BOMA	Energy Service Companies - Schneider Electric; Siemens, McKinstry	American Society of Heating Refrigerating and Air-Conditioning Engineers (American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc. (ASHRAE))	SECO
Transwestern	IFMA	JCI	AEE	SPEER
Hines	IREM	Gensler	AIA	HARC
Brookfield	CORENET		National Electrical Contractors Association (NECA)	IMT
Stream Realty	NAIOP			NRDC
Jones Lang LaSalle	Hotel and Lodging Association			DOE
Crimson				Public Utility
Boxer Property				
Trammel Crowe				
Lincoln Property Trust				
Pro-Logis				
Colliers				

There are a wide range of materials that can help support your stakeholder engagement. Examples include:

- One page summary:
  - Why is City doing this
    - Make it a narrative that ties to previous city activity in this area;
  - What are the benefits
  - What is the proposed scope
- Overview of benchmarking and transparency landscape
  - National status of benchmarking and transparency
    - [www.buildingrating.org](http://www.buildingrating.org)
  - Include table that has:
    - Who has enacted
    - When
    - Who must comply, i.e. industry, commercial, etc.
    - Square footage requirements
    - How data is being shared
- Summary of Ordinance - one to two pages (This document evolves over time. As you go through the negotiation with stakeholders, present different options that are under consideration and negotiation points)
  - Scope
  - Requirements
  - Exceptions
  - Example is included as Appendix ?
- PowerPoint presentations for stakeholder meetings
  - Summarize the who, what, why, when, and how of the proposed program

The work with the external stakeholders typically takes place in two phases, one targeted outreach meeting with a small group of key stakeholders and two or three meetings with wider stakeholders. Once you have worked with stakeholders to refine the scope, you can begin drafting a benchmarking and transparency ordinance. There are two basic approaches to ordinance development:

- Gather key stakeholder input and then begin drafting the ordinance internally.
  - Draft ordinance is presented at first wider stakeholder meeting.
  - Typically the fastest approach
- Stakeholders help draft the ordinance.
  - Involvement by a wide range of stakeholders early in the process allows for better acceptance of the ordinance.
  - Likely increases the ordinance development timeline.

## **Targeted Outreach**

The targeted outreach typically consists of one-on one meetings with key stakeholders. These key stakeholders are the largest property owners/property managers and large energy vendor/consultants. These one-on-one meetings should be used to solicit initial feedback on the goals, objectives, and scope of the project. During these meetings, explain why City is proposing this program. Be sure to tie it to a narrative of why the City passes these policies, focusing on any history of these types of programs and their benefits. Discuss the initial goals of the project as developed by the internal stakeholders. Attached are example talking points for these meetings. The references above can be used as further documentation when discussing benefits. In addition, these meetings should provide a general overview of proposed scope implementation, and compliance timeline for

the policy.

Once you have completed this series of one-on-one meetings and received key stakeholder feedback, it would be valuable to meet again with the internal stakeholder group and discuss the outcomes of these meetings. Were there comments on the goals or scope that should be addressed before presenting the plan to a wider stakeholder group? Were there specific concerns that will need to be addressed before presenting the plan to a wider stakeholder group? Are there messages that need to be updated, tailored, or added? Use the feedback to revise the goals, scope, message, presentation, and materials as appropriate to address comments and concerns.

If your community chooses, it can complete a draft ordinance after gathering feedback from the key stakeholders. The SECO Energy Benchmarking toolkit can help you write your ordinance. Additional guidance can also be found in the State & Local Energy Efficiency Action Network document “Benchmarking and Disclosure: State and Local Policy Design Guide and Sample Policy Language”<sup>10</sup>

The ordinance that you develop should address issues such as what size and types of building will be covered, when the compliance period begins, if there is a phase-in period, what are the penalties for non-compliance. A mock ordinance with notes and options is included for your reference in Appendix A” and then include the text I currently have in Appendix A - keeping the highlighting and footnotes in the document

## **Wider Outreach**

The purpose of the wider outreach is to engage the broad spectrum of external stakeholders that have been identified, such as building owners, operators, utility providers, energy consultants, architects, and engineers. This outreach is an opportunity to educate stakeholders on the value of benchmarking and solicit input and feedback before finalizing the scope and the ordinance itself. If the community is including the wide stakeholder group in the ordinance drafting process, there should be a first informational and input meeting, followed by a meeting to present the draft ordinance and solicit feedback, and finally a third meeting to present the revised ordinance. If the community developed a draft ordinance after meeting with key stakeholders, then they only need to have two meetings, one to present the draft ordinance and receive feedback, and one to present the revised ordinance. The contents of these meetings are further described below.

### **Wider Outreach - Information and Input Meeting**

The purpose of the first wider outreach meeting is to reach the broad spectrum of external stakeholders that have been identified, such as building owners, operators, utility providers, energy consultants, architects, and engineers. Similar to the one-on-one targeted meetings this meeting should describe the program and gather their input for the ordinance. At the meeting explain why City is proposing this program. Discuss the goals of the project, a general overview of the proposed scope, implementation, and compliance timeline for the policy. Be sure to communicate that these were informed not only by city personnel, but also by meetings with building owners, operators, and energy services vendors. During the meeting, be prepared to answer questions and concerns, and solicit feedback. Be sure get feedback on key points of the program. These key points would include, property types to be included, square footage thresholds, compliance time lines, fees and penalty amounts, and exceptions.

Once you have this feedback, use this information to prepare the initial draft of the benchmarking and disclosure ordinance. You can also use this information to revise the message, presentation, and materials to address comments and concerns. Ask yourself: Was there additional information that



the stakeholders needed that wasn't addressed in the first meeting? Were there some concerns that need additional education or outreach? Were there specific concerns that will need to be addressed in the ordinance? Are there messages that need to be updated, tailored, or added?

### **Wider Outreach - Initial Draft Ordinance Feedback Meeting**

The purpose of this meeting is to present the draft ordinance to the wide stakeholder group. This meeting should begin by describing why the City is implementing the program and what are the benefits. Even if these stakeholder have previously gotten this information at the "information and Input" meeting, repetition can help change attitudes and persuade people. After this background, provide outline of ordinance/policy and explain this is a first draft and you are looking for input. Keep the conversation focused on key points (property types to be included, square footage thresholds, compliance time lines, fees and penalty amounts, and exceptions.) Focusing the negotiation with stakeholders on key points can speed up the policy development process. Once you have received feedback from the wider audience on the draft ordinance, you can use that input to inform the final ordinance.

### **Wider Outreach - Final Draft Ordinance Meeting**

Once the ordinance has been revised, plan a meeting to present the revised plan. It may be useful to begin the meeting with another brief overview of why the City is creating and ordinance and what the expected benefits could be. Then provide a detailed description of the revised ordinance, explaining that it has been updated with their comments. Ask for additional feedback, and provide a timeline for implementation that includes steps such as hearings and passing through council.

## **STEP 3 DEVELOP STRATEGIES, TOOLS, AND TACTICS TO REACH YOUR OBJECTIVES**

Once the ordinance is completed, you will need to implement multiple strategies to achieve your project objectives. These should be high-level strategic ideas. Try to include a target audience for each strategy. Examples of objectives with related strategies include:

**Sample objective:** Have 95 % compliance with the law by the end of year 1

#### **Sample Strategies:**

- Work with industry association leaders to educate their membership.
- Develop communication plan that includes material/marketing collateral/web sites/ social media explaining who is covered and how to comply;
- Provide a "Help Desk" to answer questions and provide support.

**Sample Objective:** 3% Annual Energy Savings

#### **Sample Strategies:**

- Feedback and education of under-performing facilities.
- Annual reporting to the community highlighting value of achieving the savings goal.
- Awareness campaign for best practices to improve energy efficiency or capital improvements.

Next, develop tactics to achieve each strategy. What steps are you going to take to make the above strategies happen? Be as specific as possible.

## **Examples of tactics:**

**Sample strategy:** Work with industry association leaders to educate their membership.

## **Sample Tactics:**

- Schedule a meeting with BOMA leadership by the end of the first quarter
- Provide BOMA leadership with brochures that include links to the website and the Help Desk Number
- Prepare an educational presentation for the BOMA membership at a regularly scheduled meeting

There are several tools that you can use to support your strategies tactics. Keep in mind that different tools are more effective for different audiences. For a more general audience use web sites, mass emails, social media, government press releases, newsletters, etc. The content on these should be on the general benefits of energy efficiency, information on available resources, as well as general programmatic announcements.

- Training
- EPA off-the-shelf information and tools for Portfolio manager, including EPA training, data collection worksheets, and step-by-step quick reference guides. These tools are available at [www.energystar.gov/benchmark](http://www.energystar.gov/benchmark).
- On-line Reporting
- Website
- Mass emails
- Press releases
- Advertisements
- Brochures
- Newsletter(s)
- Bulletins
- Monthly meetings
- Facebook
- Twitter
- YouTube
- Linked-In
- Other social media
- Seminars/Workshops
- Presentations for outside groups such as BOMA, IFMA, IREM, HREC, Chambers of Commerce and other owner representative associations

## **Some of the tools to develop include:**

- One pager - Infographic
  - Why is City doing this?
  - What are the benefits?
  - What is the scope
- Overview of benchmarking and transparency landscape
- Summary of Ordinance - one to two pages
- Website that:
  - Explains who, what, where, when, why, and how
  - Links to resources

- Reports progress
- Provides information on local incentive programs for energy efficiency, such as utility-sponsored programs or Property-Assessed Clean Energy (PACE) programs that could help owners implement energy efficiency programs.
- See websites such as those for Houston, Austin, Chicago, New York, Seattle
- Help desk

Finally, you need to evaluate how you will measure success for each of your objectives. That way you can adjust your strategies and tactics if the objectives are not being met. It also allows you to easily report on the results.

You can use the Energy Benchmarking Toolkit to help you create your proposed objectives, strategies, tactics, and success measures, or you can use the attached worksheet.

## STEP 4 BUDGET AND PERSONNEL

The next step is to work with the internal stakeholders to define the budget and resources needed to support the program you have developed.

When developing the budget, be sure to consider:

Personnel	\$
Salary/fringe/overhead	\$
Marketing Material Development and Production	\$
Travel	\$
Outside Consultants	\$
Total	\$

## STEP 5 EDUCATION AND OUTREACH

Over the course of this process you have identified the strategies, tools, and tactics to reach your project objectives. Education and outreach is critical. In general, the community outreach activities should use your strategies, tools, and tactics to:

- Communicate the value of benchmarking
- Explain the requirements
- Provide information and training
- Provide a way for a real person to answer questions

The online Energy Benchmarking Toolkit includes summaries of the outreach and education activities implemented by the successful programs in New York, San Francisco, and Seattle.

## STEP 6 DATA COLLECTION AND ANALYSIS

After the program has been implemented, calculate the community savings and costs of implementing this program. The purpose of having this data is to help with your messaging as you communicate with your stakeholders and the larger community. The DOE has prepared an excellent guide, “Benchmarking & Transparency Policy and Program Impact Evaluation Handbook,”<sup>11</sup> that can

be used to guide your evaluation efforts. This publication will provide information on you the methodology to estimate the energy impacts along with the non-energy impacts, such as jobs and economic growth, real estate value analysis, and greenhouse gas emissions. Many Texas universities and research institutes have the capability and experience in conducting this type of assessment. New York City completed it's first "Benchmarking and Transparency Policy Impact Evaluation Report" in May of 2015. A copy of this report can be found at:

<http://energy.gov/sites/prod/files/2015/05/f22/DOE%20New%20York%20City%20Benchmarking%20and%20Transparency%20Policy%20Impact%20Evaluation....pdf>

## **STEP 7 EVALUATE RESULTS**

After the initial program kick off, the team should regularly evaluate the program and determine

- Are the goals being met?
- Are the original objectives still appropriate, so should they be refined?
- Is information accessible and usable to appropriate parties?
- What is the feedback from covered buildings, and should changes be made?

Be sure to use this information to identify opportunities to improve to achieve the project goal.

## **STEP 8 CELEBRATE SUCCESS AND COMMUNICATE RESULTS**

It is important that the project team communicate the results of the benchmarking project. Consider the following tips when communicating the benchmarking results.

- Demonstrate the value—by showing the benefits of acting on the information.
- Be clear about the program intent. Focus on finding opportunities to improve performance cost effectively.
- Empower stakeholders to integrate benchmarking and strategic energy management into existing operations and provide training

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## END NOTES

1

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2

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3

[https://www.energystar.gov/sites/default/files/buildings/tools/DataTrends\\_Savings\\_20121002.pdf](https://www.energystar.gov/sites/default/files/buildings/tools/DataTrends_Savings_20121002.pdf)

4

<http://aceee.org/files/pdf/fact-sheet/ee-economic-opportunity.pdf>

5

<http://aceee.org/research-report/ie1501>

6

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7

<http://aceee.org/white-paper/energy-efficiency-job-creation>

8

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10

[http://energy.gov/sites/prod/files/2014/05/f15/commercialbuildings\\_benchmarking\\_policy.pdf](http://energy.gov/sites/prod/files/2014/05/f15/commercialbuildings_benchmarking_policy.pdf)

11

<http://energy.gov/sites/prod/files/2015/05/f22/DOE%20Benchmarking%20and%20Transparency%20Policy%20and%20Program%20Impact%20Evaluation%20H....pdf>

## Internal Stakeholder Identification Worksheet

Mayor's Office -Leadership	
Name:	
Phone Number:	
Email:	

Program Development	
Name:	
Phone Number:	
Email:	

Program Development	
Name:	
Phone Number:	
Email:	

### Department Heads or Delegate

Public Works / Municipal Utilities for bill data	
Name:	
Phone Number:	
Email:	

<b>Public Works / Municipal Utilities for bill data</b>	
Name:	
Phone Number:	
Email:	
Name:	
Phone Number:	
Email:	

<b>Property Assessor for property data</b>	
Name:	
Phone Number:	
Email:	

<b>Legal to provide support when legal questions come up about data access and data sharing.</b>	
Name:	
Phone Number:	
Email:	

<b>Other Department</b>	
Name:	
Phone Number:	
Email:	

Optional to involve at minimum the Chief of Staff of Council Members; largely provide information

<b>City Council</b>	
Name:	
Phone Number:	
Email:	
Name:	
Phone Number:	
Email:	
Name:	
Phone Number:	



<b>City Council</b>	
Email:	
Name:	
Phone Number:	
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Name:	
Phone Number:	
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Email:	

Help with development of marketing collateral, press releases and social media.

<b>Communications/Public Relations</b>	
Name:	
Phone Number:	
Email:	

if separate from the developing department. Helpful if, for example, the Office of Sustainability is developing the policy but is not an institutionalized department. If the program is implemented in a department that has been institutionalized, it is more likely to maintain operations regardless of administration.

<b>Head of implementing department</b>	
Name:	
Phone Number:	
Email:	

**NOTES**

### Cities with voluntary commercial programs include:

- Houston has started a Green Office Challenge Program for the business sector, to encourage commercial buildings to benchmark and share energy usage data. - See more at:  
<http://database.aceee.org/city/benchmarking-disclosure#sthash.iYbY4Y9h.dpuf>
- In June 2014, the City of Columbus, launched the Columbus Energy Challenge, with a goal to reduce energy use from buildings over 50,000 square feet by 20% by 2020 and benchmark 70% of those buildings (approx. 680 buildings). Currently 41 buildings (10.5 million sq ft) are benchmarked through the program. - See more at:  
<http://database.aceee.org/city/benchmarking-disclosure#sthash.iYbY4Y9h.dpuf>
- Denver has a voluntary programs to encourage building benchmarking in the commercial sector. Watts To Water is a program dedicated to energy and water use reduction from the commercial sector in the Denver metro area. Participating buildings must share data in ENERGY STAR® Portfolio Manager. - See more at:  
<http://database.aceee.org/city/benchmarking-disclosure#sthash.iYbY4Y9h.dpuf>
- Los Angeles is encouraging commercial benchmarking through the Better Buildings Challenge. Commercial buildings that have joined the challenge are required to benchmark energy and water use through ENERGY STAR® Portfolio Manager. - See more at:  
<http://database.aceee.org/city/benchmarking-disclosure#sthash.iYbY4Y9h.dpuf>
- Orlando Through the Kilowatt Crackdown Program that ran from 2010-2013, Orlando encouraged building owners to benchmark energy and water use using ENERGY STAR® Portfolio Manager. - See more at:  
<http://database.aceee.org/city/benchmarking-disclosure#sthash.iYbY4Y9h.dpuf>
- A voluntary program called Pittsburgh Green Workplace Challenge encourages benchmarking of office buildings using ENERGY STAR® Portfolio Manager. - See more at:  
<http://database.aceee.org/city/benchmarking-disclosure#sthash.bnskIxsB.dpuf>
- Portland encourages building owners/managers to benchmark their properties and disclose their energy usage data through the Kilowatt Crackdown Program.  
<http://www.kilowatt-crackdown.com/portland>
- Salt Lake City has a voluntary program that encourages building owners to benchmark their energy use called the Mayor's Skyline Challenge. This initiative encourages building owners in the city to meet and exceed air quality and energy-saving targets of the Sustainable Salt Lake Plan.
- The St. Louis High Performance Building Initiative encourages buildings to benchmark their energy use. - See more at:  
<http://database.aceee.org/city/benchmarking-disclosure#sthash.jBtZgcPD.dpuf>
- Virginia beach encourages voluntary benchmarking of commercial buildings through their Energy Benchmarking Training Program. - See more at:  
<http://database.aceee.org/city/benchmarking-disclosure#sthash.jBtZgcPD.dpuf>
- Envision Charlotte: <http://www.envisioncharlotte.com/>

Multi-family programs typically involve measuring energy use, and then reporting on this information to prospective and current tenants. Prospective tenants can then use the energy efficiency of a property as one evaluation criteria when they are choosing a residence. Residents of multifamily properties can be given information on energy performance and tips on how to save money on their energy bill. Privacy and data access issues can make this a challenging sector to benchmark. The following communities have taken steps to support energy efficiency in multifamily buildings: Fort Worth

Building Energy Reporting and Disclosure Ordinance also requires that all residential buildings over 35 units benchmark their energy and water use using Portfolio Manager and report the data to the city annually. The city publically discloses the building-level energy use information on a website annually. The policy includes mechanisms for enforcement and penalties in cases of non-compliance. - See more at:  
<http://database.aceee.org/city/benchmarking-disclosure#sthash.oRTsJpPE.dpuf>

Voluntary single-family residential programs are typically managed in association with the local Multiple Listing Service (MLS), where the listing agent has the opportunity to highlight energy efficiency measures of the listed property. Examples of communities that support residential home programs include: Fort Worth

The Oregon Department of Energy has adopted voluntary rules for rating the energy performance of homes - See more at:  
<http://database.aceee.org/city/benchmarking-disclosure#sthash.jBtZgcPD.dpuf>

California has a voluntary energy rating program for homes. - See more at:  
<http://database.aceee.org/city/benchmarking-disclosure#sthash.jBtZgcPD.dpuf>

## Goal, Objectives, Strategies, Tactics, and Performance Measure Worksheet

### PROJECT GOAL:

#### Objective 1:

Strategy:

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Tactic:

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Tactic:

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Tactic:

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Strategy:

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Tactic:

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Tactic:

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Tactic:

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Strategy:

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Tactic:

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Tactic:

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Tactic:

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How we will measure success:

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A)

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B)

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C)

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**Objective 2:**

Strategy:

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Tactic:

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Tactic:

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Tactic:

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Strategy:

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Tactic:

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Tactic:

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Tactic:

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Strategy:

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Tactic:

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Tactic:

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Tactic:

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How we will measure success:

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A)

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B)

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C)

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**Objective 3:**

Strategy:

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Tactic:

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Tactic:

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Tactic:

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Strategy:

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Tactic:

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Tactic:

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Tactic:

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Strategy:

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Tactic:

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Tactic:

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Tactic:

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How we will measure success:

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A)

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B)

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C)

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**Objective 4:**

Strategy:

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Tactic:

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Tactic:

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Tactic:

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Strategy:

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Tactic:

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Tactic:

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Tactic:

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Strategy:

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Tactic:

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Tactic:

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Tactic:

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How we will measure success:

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A)

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B)

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C)

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**Objective 5:**

Strategy:

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Tactic:

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Tactic:

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Tactic:

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Strategy:

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Tactic:

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Tactic:

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Tactic:

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Strategy:

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Tactic:

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Tactic:

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Tactic:

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How we will measure success:

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A)

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B)

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C)

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## **EXAMPLE - Talking Points**

### **Elevator pitch**

The City has a strong history of implementing cost-effective and practical energy efficiency projects that grow the economy and improve the bottom line of building tenants and owners. The benchmarking program builds upon this legacy, with an eye on establishing a competitive advantage for the City through resource efficient buildings. Efficient buildings are not only more cost-effective, but also provide healthier and more comfortable spaces to live, play, and work—qualities that attract top talent and investment. By developing and implementing best-in-class programs designed to improve air quality, boost the local economy, forecast resource planning, and attract new industry and talent, this policy aims to make this growing city not only the energy capital of the world, but also the global energy efficiency capital.

### **Four Points**

- Benefits economic development and diversity through job creation, reduced operating costs and improved worker productivity
- Reduced emissions improves regional air quality and improves quality of life
- Cheaper for business and community to do energy efficiency than to pay for new electricity infrastructure
- Resource planning needed to reduce water supply constraints and enhance grid stability

### **Four points plus backup:**

1. Benefits economic development and diversity through job creation, reduced operating costs and improved worker productivity
  - Energy efficiency improves air quality and reduces costs of doing business in the City
  - Improve air quality thereby improving reputation of the City and makes it more attractive to new industry resulting in improved diversification of economy and improving economic resilience
  - Reduces cost of doing business by reducing T&D costs and lower O&M costs
  - The focus for cities and business is to attract skilled labor and knowledge workers.
    - Skilled labor and the service industry are much more flexible and are more likely to locate in places that have a better business climate and good quality of life; they tend to balance economic opportunity and



quality of life when selecting a place to live and work (Mathur and Stein 2005).

- Quality of life issues are provided through amenities, such as good air quality, that attract skilled labor and drives inter-regional shifts of the population (Arora et al 2000; Glaeser, Kolko, Saiz, 2000).
- Air quality plays a role in the retention and recruitment of resources to a state (Smith and Huang 1995).
- One of the stated reasons for adopting energy efficiency policies is to improve air quality by reducing emissions (Brennan and Palmer 2012; Nadel 2006)

2. Reduced emissions improves regional air quality (four main points)

- The region is in non-attainment with the Clean Air Act; emissions exceed the ozone standard
- Non-compliance with the ozone standard in the Clean Air Act may result in the withholding of federal transportation dollars
  - The City has a history of implementing energy efficiency policies to improve air quality
    - Energy Efficiency for City operations
    - Voluntary benchmarking programs
- In October EPA proposed a reduction in the threshold which will make it more difficult for the City to come into attainment; requires the City take additional actions to improve air quality and meet standards; this policy is one of the several policies that have been proposed, including the new anti-idling policy that is being considered

<b>Air Quality Stats - Reductions from CEP Policies</b>		
CO2	1,900,000	Metric Tons
PM2.5	57.40	Metric Tons
NO x	1,280	Metric Tons
SO x	5,940	Metric Tons
DALY	1010 years of saved life	DALY
Equivalency	400,000	Passenger Vehicles off the Road

3. Cheaper for business and community to do energy efficiency than to pay for new electricity infrastructure

- It is less expensive to do energy efficiency than build new Transmission and Distribution (T&D) Infrastructure/Power Generation;
  - At an average of 2.8 cents per kWh, electric utility energy efficiency programs are about one-half to one-third the cost of alternative new electricity resource options.
- Cost of T&D has doubled in the last 10 years due to expansion of infrastructure to meet new power loads
- Due to expected demand T&D in planning or conceptual stage is \$5.8 billion; this will be paid for by business and the community; over 5,000 miles of power lines **Example of 500,000 square foot buildings energy bill with a doubling of T&D in next 10 years**

- o \$100,000 increase in power prices for large commercial properties

Commercial			Commercial - increase 2Xs				
Monthly TDU	\$26.81		\$26.81				
TDU per kWh	\$0.0049		\$0.0098	over a 10 year period			
TDU per kW	\$5.67		\$5.67				
customer load	95	kW	95	kW			
customer	833,333	kwh per month	833,333	kwh			
	\$4,649.53	per month	\$8,732.86	per month	88%		
	\$55,794.32	per year	\$104,794.32	per year	88%		
kWh rate	0.045		0.045				
kwh Cost	\$37,500	month	\$37,500	month			
Total Cost monthly	\$42,150	month	\$46,233	month	10%		
Total Cost Yearly	\$561,589	yearly	\$659,589	yearly	17%	\$98,000	yearly difference
Square footage	500,000						
kWh/sqft	20	Houston					
	10,000,000	kWh					
	833,333.33	kWh per month					
	95	kW					

#### 4. Resource planning needed to reduce water supply constraints and enhance grid stability

- o Electric power generation is the largest user of water in a region that faces significant water scarcity issues. Reducing energy demand reduces water demand.  
(<http://fuelfix.com/blog/2011/08/24/more-power-plant-woes-likely-if-texas-drought-draws-into-winter/>)
- o The city is growing, and with that comes an increase in the consumption of water. This policy will help with forecasting to ensure that sufficient water supply and infrastructure are in place to meet demands.
- o Policy improves ERCOT and utility resource planning - prevent brownouts and blackouts;
  - ERCOT conducts regulator generation capacity and transmission and distribution studies; models have been less than stellar largely due to lack of good data for some of its variables
- o Policy improves ERCOT modeling by providing additional, high quality data point for planning purposes to have a better understanding of growth in the market;

#### Misc.:

- Cost of benchmarking - 0.37% increase in operating expenses for the building, basically a rounding error.
- Cost of audit

100,000	square feet building
\$0.06<	cost per square foot
\$6,000.00	total cost
\$1,200.00	cost per year over five years
8,300,000	kBtu
415,000	5% savings - kBtu
132,081	converted to kWh
\$5,283.26	savings
\$26,416.30	savings over five years
4.40	savings to cost ratio
1.14 year	Payback

- Cost of building operator training
  - Stationary Engineer examination fee is \$137.61 and there is no required class; there is an experience prerequisite for the Level 1.
  - IFMA SFP is \$2,000, inclusive of materials and exam.
  - P.E. examination and registration is \$500.00 requires a four-year degree from an accredited program, a previous exam and four years of post-college work under a PE.

Consider Political Opt-outs - Green office challenge - participation in this - will not publish for three years - enrolled in a program then don't need to disclose or do audits - Allow them to participate in other programs - approved by City - and then they would not have to participate in the benchmarking

## **DRAFT Ordinance for Existing Building Energy and Water Efficiency (EBEWE)**

AN ORDINANCE, , OF THE CODE OF ORDINANCES, , ESTABLISHING THE REQUIREMENT THAT

Therefore, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF , :

### **A: DEFINITIONS**

For the purpose of this section, the following words and phrases are defined as follows:

1. "anonymized data" means data that does not reveal names, addresses or any other

- information that would identify an individual or business.
2. “benchmark” means to input and submit the total energy and water consumed for a building for the previous calendar year and other descriptive information for such building as required by the benchmarking tool. Total energy and water consumption shall not include separately metered uses that are not integral to building operations, such as broadcast antennas and electric vehicle charging stations, as determined by the official.
  3. “benchmarking submission” means a subset of:
    1. Information input into the benchmarking tool; and
    2. Benchmarking information generated by the benchmarking tool, as determined by the official.
  4. “benchmarking tool” means the U.S. Environmental Protection Agency’s ENERGY STAR® Portfolio Manager, and any additional tool adopted by the official, used to track and assess the energy and water use of buildings relative to similar buildings.
  5. “covered city building” means a building as determined by the Department of General Services
    1. With gross square feet or more; and
    2. That is owned by the city or for which the city regularly pays all or part of the annual energy and water bills.
  6. “covered non-city building” means a building, other than covered city building,
    1. With gross square feet or more, as determined by the Department of Building and Safety; or
    2. area or more as determined by the Department of Building and Safety.
  7. “covered building” means any covered city building or covered non-city building.
  8. “department” means the City of Department of .
  9. “energy” means electricity, natural gas, steam, heating oil, or other product sold by a utility to a customer of a building, or renewable on-site electricity generation, for purposes of providing heating, cooling, lighting, water heating, or for powering or fueling other end-uses captured by ENERGY STAR® Portfolio Manager.
  10. “ENERGY STAR® score” means the 1-100 numeric rating generated by the ENERGY STAR® Portfolio Manager tool.
  11. “ENERGY STAR® Portfolio Manager” means the tool developed and maintained by the U.S. Environmental Protection Agency to track and assess the relative energy and water performance of buildings nationwide.
  12. “energy use intensity” means total energy consumed per square foot per year measured in kBtus per square foot.
  13. “Financial hardship” (of a building) means a building that: (choose any or all, as appropriate)<sup>4</sup>
  14. “official” means the of the Department of .5
  15. “owner” means any of the following:
    1. An individual or entity possessing title to a covered building;
    2. The net lessee in the case of a property subject to a triple net lease with a single tenant;
    3. The net lessee in the case of a building subject to a net lease with a term of at least forty-nine years, inclusive of all renewal options;
    4. The board of managers in the case of a condominium;
    5. The board of directors in the case of a cooperative apartment corporation; or
    6. An agent authorized to act on behalf of any of the above.
  16. “system” or “subsystem” means a building assembly made up of various components that serve a specific function, including but not limited to exterior walls, windows, doors, roofs, ceilings, floors, lighting, piping, ductwork, insulation, HVAC system

equipment or components, electrical appliances, and plumbing appliances.

17. "tenant" means a person or entity occupying or holding possession of a building, part of a building or premises pursuant to a rental agreement;
18. "utility" means an entity that distributes and sells natural gas, electric, water or thermal energy services for buildings.
19. "water use intensity" means total water consumed per square foot of the covered building per year in gallons.

## **B: BENCHMARKING AND BENCHMARKING SUBMISSION REQUIRED.**

1. No later than 90 days after the passage of this ordinance, and every June 1 thereafter, the owner of a covered non-city property shall benchmark such property for the previous calendar year. . The owner shall annually provide a benchmarking submission for each covered building to the department in an electronic form as established by the official. The first benchmarking submission shall occur according to the following schedule:

- a.) for all covered city building with or more gross square feet;
- b.) for all covered non-city buildings with or more gross square feet;
- c.) for
- d.) for

Exception: Benchmarking is not required for a covered building<sup>21</sup>:

## **C: PUBLIC DISCLOSURE AND ANALYSIS OF BENCHMARKING INFORMATION.**

1. The official shall make available to the public, on the internet, the shared benchmarking information for the previous calendar year according to the following schedule:
  1. For each covered city building, no later than , and each thereafter; and
  2. For each covered non-city building with or more gross square feet, no later than , and each thereafter.
  3. For each covered non-city building with or more gross square feet, no later than , and each thereafter.
  4. For each covered non-city building with or more gross square feet, no later than , and each thereafter.
  5. All cities are considering a variety of ways to share this data with the public. The ordinance requires that a certain time frame be established for when this data will be shared. The following allows you to set the time line for this data sharing.
2. The official shall make available to the public no later than , , , and any subsequent years at the discretion of the official, a report on the benchmarking of covered buildings, including an assessment of compliance rates, an assessment of accuracy

and issues affecting accuracy, summary energy and water consumption statistics, and trends observed, including an assessment of changes across the portfolio over time.

3. The City may disclose data from benchmarking submissions to a third party for academic or other non-commercial research purposes provided that such data is anonymized.
4. The City may provide non-anonymized data from benchmarking submissions to any utility serving a covered building or to any federal, state, or city-managed energy efficiency program, provided that the data will be used only for purposes of targeting incentives provided through energy efficiency programs, and provided that the City has first obtained the covered building owner's written or electronic permission to share the data with the utility or energy efficiency program. Where the building owner's permission can be granted electronically through acceptance of a default option, the City shall provide a clearly delineated option for owners of covered buildings to choose to opt out of granting this permission.
5. All third parties receiving anonymized or non-anonymized data from benchmarking submissions shall sign a non-disclosure agreement (NDA) with the city stipulating terms for acceptable use of the data, including assurances that such data shall not be disclosed to other entities, before receiving such data.

#### **D: WHOLE-BUILDING ENERGY AND WATER CONSUMPTION DATA ACCESS (If is with regulated utility or co-op that can provide the data)**

No Regulated Utilities Selected

#### **E: DATA REQUEST TO UTILITIES**

No Regulated Utilities Selected

#### **F: PROVIDING BENCHMARKING INFORMATION TO THE BUILDING OWNER.**

1. Each nonresidential tenant located in a covered building, within 30 days of a request by the owner and in a form to be determined by the official, provide all information that cannot otherwise be acquired by the owner and that is needed by the owner to comply with the requirements of this ordinance.
2. When the owner of a covered building receives notice that a nonresidential tenant intends to vacate a space within such building, such owner shall request information relating to such tenant's energy use for any period of occupancy relevant to the owner's obligation to benchmark. Such tenant shall report such information to the owner of the covered building within 30 days of a request by the owner.
3. When a covered building changes ownership, the previous owner must provide the new owner all information for the months of the calendar year being benchmarked during the time the previous owner was still in possession of the building.
4. Where the owner is unable to benchmark due to the failure of a utility and/or any or

all nonresidential tenants to report the information required by Section (X)(X), the owner shall complete benchmarking using such alternate values as established by the official. The official shall evaluate the quality of any alternate values no less than once every 10 years thereafter.

#### **G: DATA SHARING.**

1. The City may disclose performance report, summary audit report, summary retro-commissioning report, and retrofit report data to a third party for academic or other non-commercial research purposes provided that such data is anonymized.
2. The City may provide non-anonymized data to any utility serving a covered building or to any federal, state, or city-managed energy efficiency program, provided that the data will be used only for purposes of targeting incentives provided through energy and water efficiency programs, and provided that the City has first obtained the covered building owner's written or electronic permission to share the data with the utility or energy efficiency program. Where the building owner's permission can be granted electronically through acceptance of a default option, the City shall provide a clearly delineated option for owners of covered buildings to choose to opt out of granting this permission.
3. All third parties shall sign a non-disclosure agreement (NDA) with the city stipulating terms for acceptable use of the data, including assurances that non-anonymized data shall not be disclosed to other entities, before receiving any data from complete energy and water assessment or action submissions.

#### **H: NOTIFICATION AND POSTING.**

1. Between and of each of the first three years during which an owner is required to provide a benchmarking submission, the official shall notify those owners of their obligation to benchmark performance for the previous calendar year, provided that the failure of the official to notify any such owner shall not affect the obligation of such owner to benchmark.
2. By of each year, the official shall publicly post on the internet a list of all covered buildings that must provide a benchmarking submission to the official during the following year.
3. The official shall notify the owner of the requirements of this ordinance three years prior to the calendar year in which the covered building is due and in the calendar year prior to the calendar year in which a report is due, provided that the failure of the official to notify any such owner shall not affect the obligation of such owner to complete the performance or prescriptive path.

#### **I: MAINTENANCE OF RECORDS.**

1. Owners shall maintain records as the Official determines is necessary for carrying out the purposes of this article, including but not limited to the energy and water bills and reports or forms received from tenants and/or utilities. Such records shall be preserved for a period of three years. At the request of the official, such records shall be made available for inspection and audit by the Official.

## **J: VIOLATIONS AND ENFORCEMENT.**

1. The official will have the option to choose a select set of benchmarked buildings to review to ensure accuracy of data and compliance with benchmarking and transparency requirements.
2. It shall be unlawful for any entity or person to fail to comply with the requirements of this article or misrepresent any material fact in a document required to be prepared or disclosed by this article.
3. If the official determines that an owner has failed to report benchmarking information pursuant to Section B of this Code or the building owner submits incomplete or false benchmarking information, the official may seek the following remedies:
  1. A written warning may be issued for the first violation; and
  2. If initial benchmarking information or updated benchmarking information is not reported within days of the date the benchmarking was due, the official may issue a second notice of violation with a penalty of up to \$

## **K: RULES.**

The official shall promulgate such rules as are necessary to carry out the provisions of this ordinance. The official may require separate fees for filing and review of applications and reports filed pursuant to this ordinance.

## **L: SEVERABILITY.**

If any section, subsection, sentence, clause, phrase, or other portion of this ordinance is for any reason declared unconstitutional or invalid, in whole in part, by any court of competent jurisdiction, such portion shall be deemed severable and such unconstitutionality or invalidity shall not affect the validity of the remaining portions of this ordinance, which remaining portions shall continue in full force and effect.

## **M: TIMING.**

This law shall take effect immediately.