

BEPSDC Task Force

March 31, 2020



@DOEE_DC
#BEPSDC

*** DEPARTMENT
OF ENERGY &
ENVIRONMENT
GOVERNMENT OF THE DISTRICT OF COLUMBIA

WE ARE
WASHINGTON
DC GOVERNMENT OF THE
DISTRICT OF COLUMBIA
MURIEL BOWSER, MAYOR

AGENDA

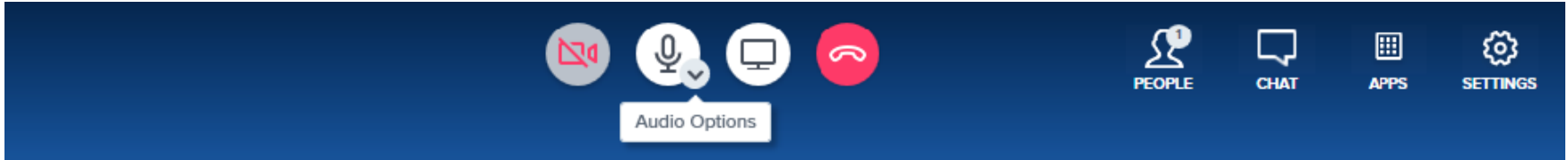


- Administrative Items
- Vacancy sub-committee report-out
- Public Building Sub-committee report-out
- Setting Standard above Local Median
- Standard Target Pathway
- Higher Education/Hospital carve-out introduction
- Announcements

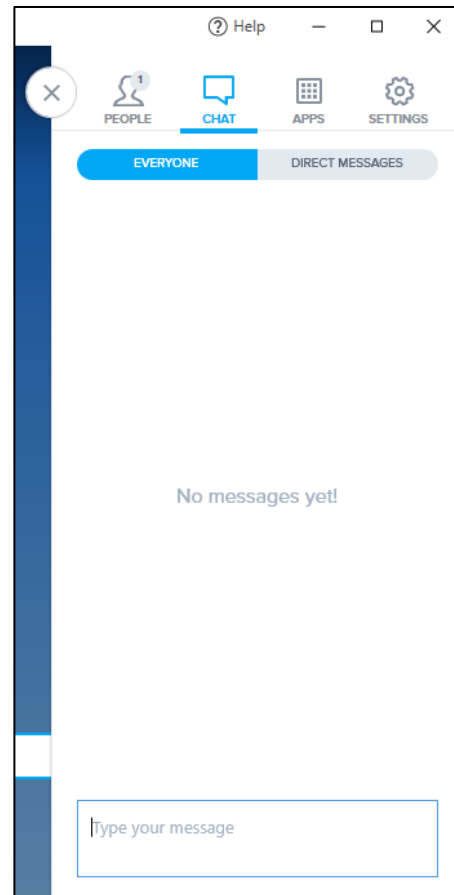
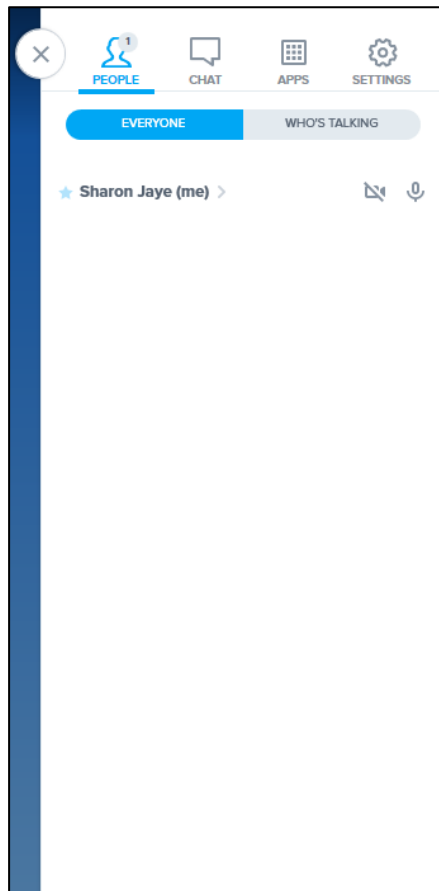
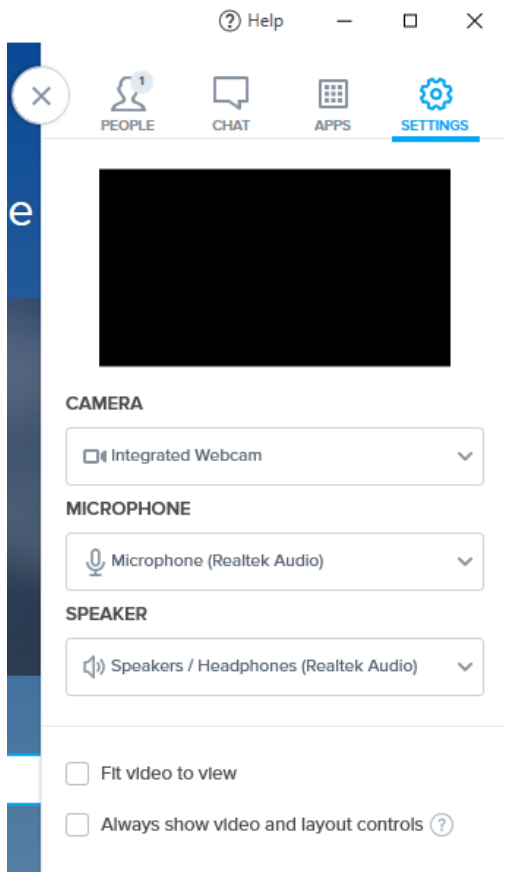
ONLINE MEETING

- The meeting is being recorded and will be posted to our website
- Questions and Comments throughout the meeting:
 - Task Force Members – will stay un-muted but please mute if you are not talking to avoid background noise
 - Non-Task Force Members will be muted on entry - please use the chat box to request to talk
- Attendance
 - Task Force Members - roll call (will also use this for voting)
 - Non-Task Force Member – please use the chat box at this time to register your name, organization and email to “sign in”

ONLINE MEETING



ONLINE MEETING



ROLE OF TASK FORCE

- Advise DOEE on creation of an implementation plan for the Building Energy Performance Program;
 - Recommend amendments to proposed regulations issued by DOEE; and
 - Recommend complementary programs or policies.
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- If topic needs in-depth discussion, anyone can suggest moving to a committee
 - This is an open meeting - everyone is allowed to participate

MEETING SCHEDULE

- January 7 – Property Types, Equivalent Metric
- January 21 – Performance Path, Other Pathways
- February 4 – Penalties and Enforcement, Exemption Criteria/Process
- February 18 – Prescriptive Pathway and Penalty Structure
- March 3 – Sub-Committees, Prescriptive Pathway process, Bike Rack items
- March 31 – Vacancy/Occupancy, Equivalent metric, 5% Property Type Group Issues, Setting Standard above Local Median, Standard Target Pathway, Higher Ed/Hospital Carve-out introduction
- April 14 – Tradable Allowances, Extended ACP for Deep Retrofits, Higher Ed/Hospital Carve-out Recommendations, additional rule items

VACANCY/OCCUPANCY QUESTIONS

- How to treat unoccupied properties at beginning of compliance cycle for
 - determining the standard
 - determining if BEPS is applicable for that cycle
- How to treat properties that become unoccupied during the compliance cycle?

Analysis results - No statistically significant trends

VACANCY/OCCUPANCY RECOMMENDATIONS

- Set the occupancy threshold for property types the same as EPA's [recommendations](#)
 - Office/Bank/Courthouse/Financial Center must be at least 55%
 - Hotel must be at least 60%
 - Multifamily must be at least 80%
- For building types that can receive a score but do not have specific EPA recommendations for the occupancy threshold, the threshold should be set by [EPAs criteria](#) for receiving the ENERGY STAR Score
- For all other property types that EPA does not have recommendations, set the occupancy threshold at 50%

VACANCY/OCCUPANCY RECOMMENDATIONS

- Buildings that are below this threshold for the preceding two years (2019-2020) before compliance period are exempt until the following compliance period.
- Buildings that do not meet the standard at the beginning of the compliance period and that fall below this threshold during the compliance period are eligible for an extension of up to 3 years to comply with BEPS.
- Building owner will need to apply directly to DOEE for exemptions and extensions noted above so that DOEE can accurately determine if they meet the criteria.
- DOEE will remove low occupancy buildings when determining the standard regardless if they apply for the exemption or not. This is to ensure data quality.

PUBLIC BUILDINGS SUB-COMMITTEE

Affect Rule-making

- Local median ENERGY STAR score (or equivalent metric)
- By property type – several groupings where District owns 100% of the buildings;
- small property group types < 10 buildings

How Do We Comply

- 50% of portfolio is less than 50K sq. ft. – smaller building challenges?
- 40% are schools (55% of sq. ft.)
- Using the SEMP strategically?

EQUIVALENT METRIC EXAMPLES



Name ▼	Energy Current Date ⬆	ENERGY STAR Score ⬆	Site EUI (kBtu/ft²) ⬆	Source EUI (kBtu/ft²) ⬆
Garrison Elementary School 3365814	12/31/2019	68	60.3	108.1
Garrison Elementary School w/o SOLAR 10174170	12/31/2019	46	60.3	136.3

Name ▼	Energy Current Date ⬆	ENERGY STAR Score ⬆	Site EUI (kBtu/ft²) ⬆	Source EUI (kBtu/ft²) ⬆
Burrville Elementary School 3365776	12/31/2019	40	66.9	118.5
Burrville Elementary School wo SOLAR 10174817	12/31/2019	20	66.9	148.0

Recommendation
to Task Force –
Use Source EUI for
Equivalent Metric

PROPERTY TYPE GROUPS WITH ONE BUILDING OWNER

Property Type Group – Level 3 CBECS	Count
Library	19
Police Station/Fire Station	38
Other Lodging (Shelters/Temp Housing)	14
Repair Services (Fleet Maintenance)	5

- ~~Food Sales (Eastern Market)~~
- ~~Fitness Center/Health Club/Gym~~
- ~~Laboratory~~
- ~~Social/Meeting Hall~~

SUGGEST RECOMMENDATION FOR ACP

Property Type Group – Level 3 CBECS	Count	Savings
Library	19	7,379,213 kBtu
Police Station/Fire Station	38	9,540,569 kBtu
Other Lodging (Shelters/Temp Housing)	14	7,222,173 kBtu
Repair Services (Fleet Maintenance)	5	7,379,213 kBtu

Recommendation to Task Force – Offer an Alternative Compliance Path for property type groups with one building owner. Step 1 - Buildings in that group are determined to meet/not meet the standard normally. Step 2 - Performance path 20% savings are calculated for the buildings that do not meet the standard. Step 3 - Savings are aggregated as a portfolio goal for an alternative compliance path.

SUGGESTED RECOMMENDATION – BLDGS < 10

- CBECS – Public Order and Safety (Prison)
 - Source EUI – 340
 - National Median – 156
- CBECS – Laboratory (Laboratory)
 - Consolidated Forensic Laboratory - 443
 - National Median - 318

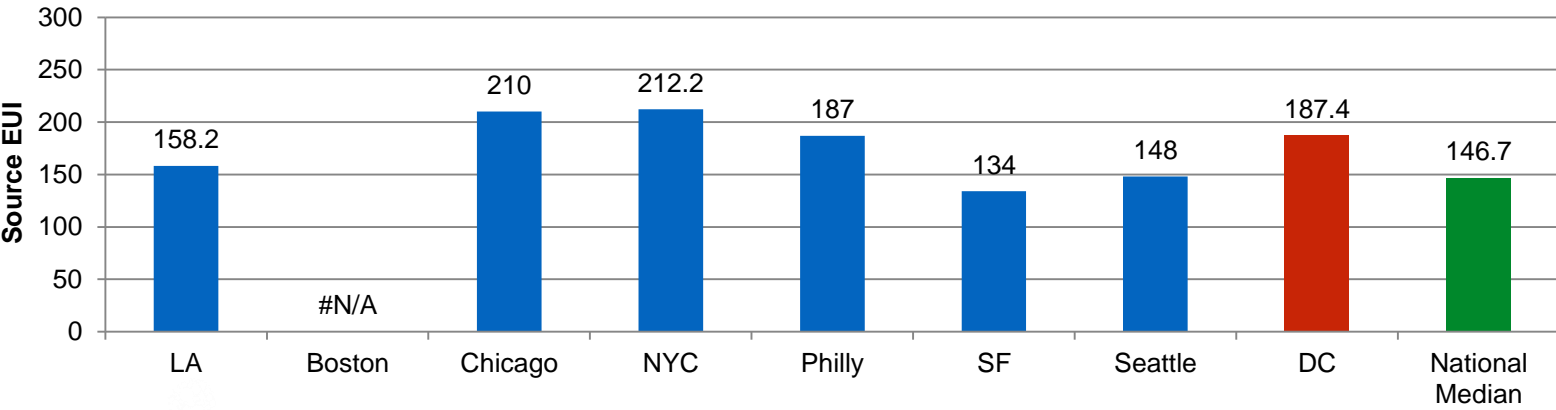
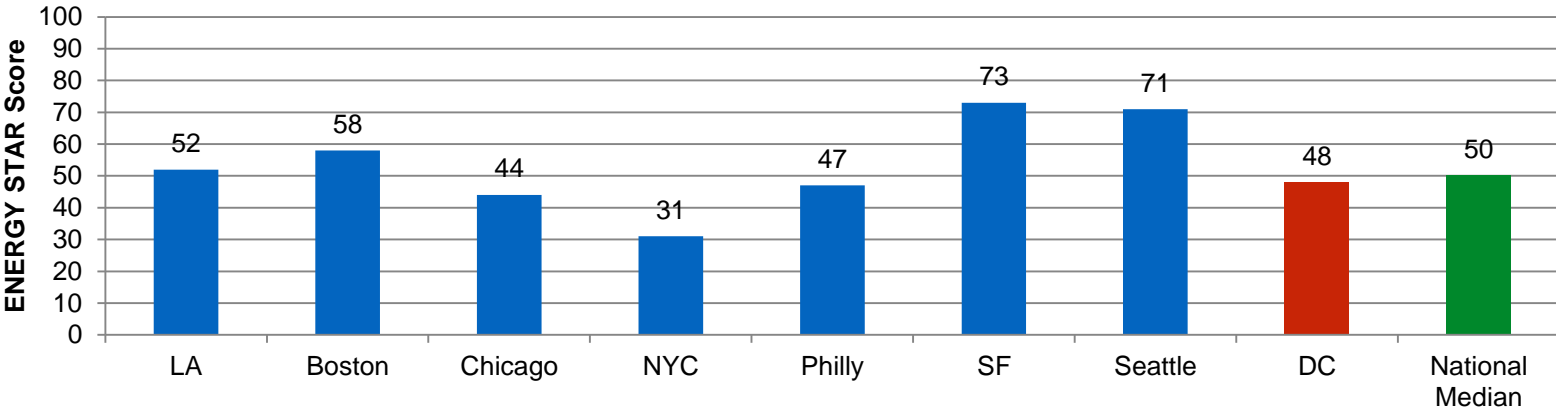
Recommendation to Task Force – Property type groups with less than 10 buildings are ranked individually against the national median

SETTING STANDARD ABOVE LOCAL MEDIAN

Property Grouping	Count	District Median ES Score	District Median Source EUI	National Median Source EUI
K-12 School	133	39	144.7	104.4
Hotel	105	48	187.4	146.7
Fire station/Police station	27		185.7	124.9
Warehouses/Dist. Center	19	35	117.7	52.9
Worship Facility	17	23	142.3	58.4
Library	12		190.7	143.6
Recreation	12		250.6	112.0
Senior Care Community	10	43	248.3	213.2
Public assembly	8		216.2	112.0
Social/meeting	8		206.0	109.6

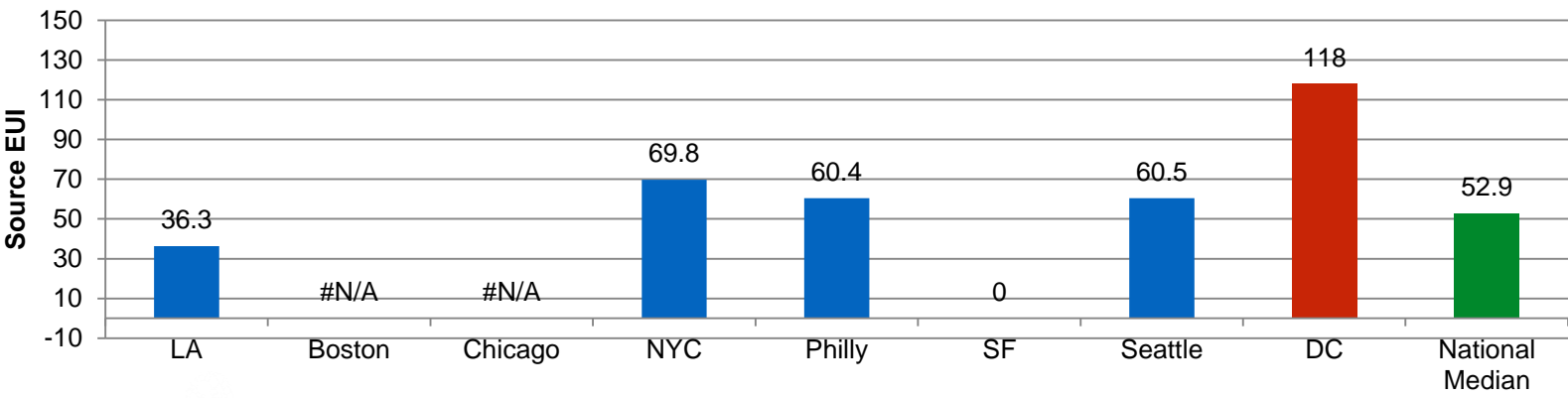
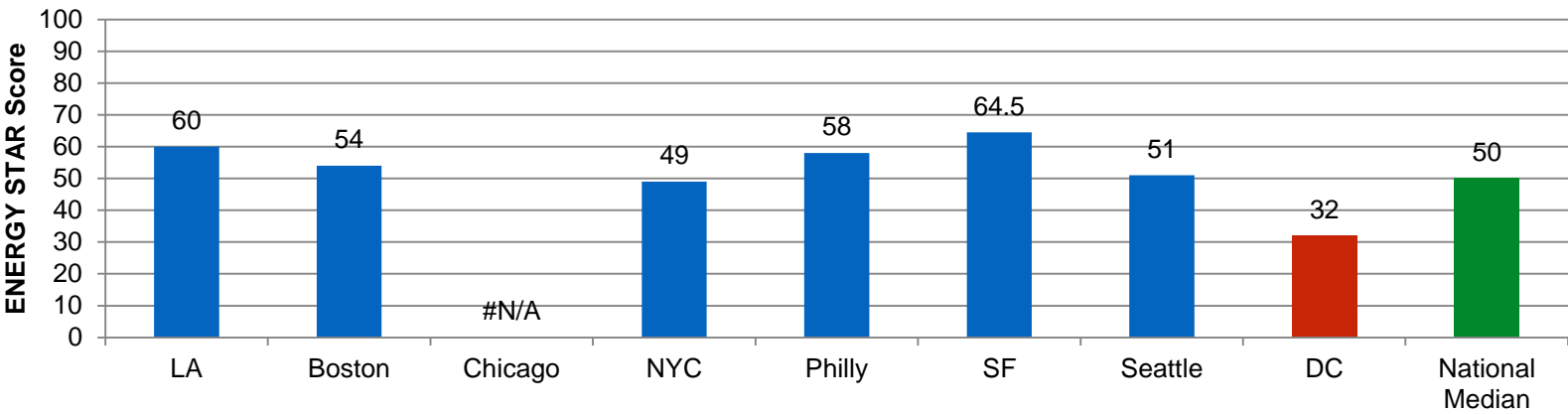
*Property types in this chart fall below the national median based on 2018 data.

COMPARATIVE ANALYSIS: HOTELS



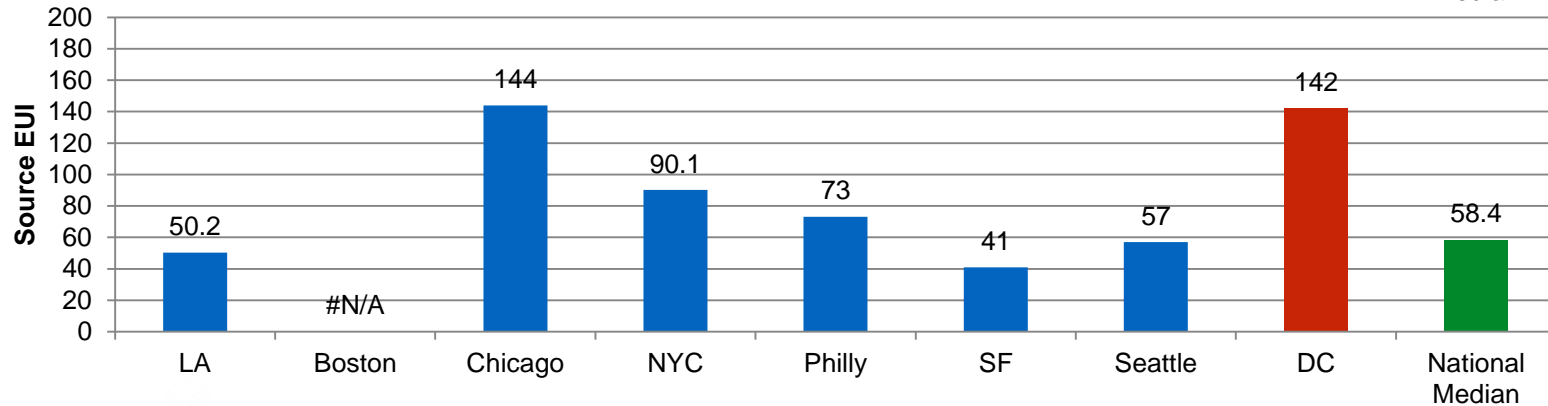
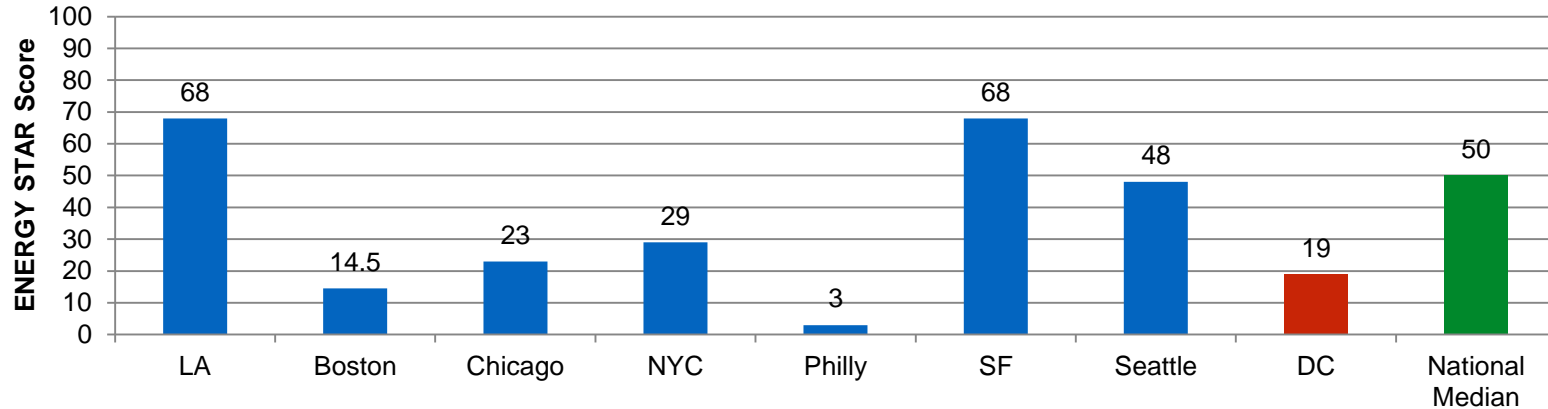
** - Boston does not disclose their Source Energy figures

COMPARATIVE ANALYSIS: WAREHOUSE



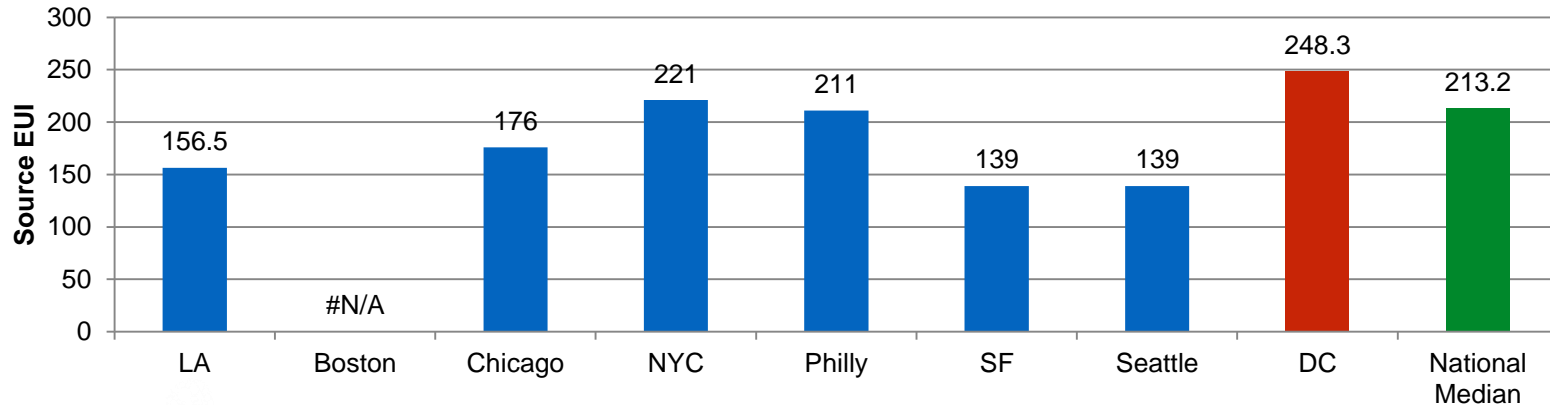
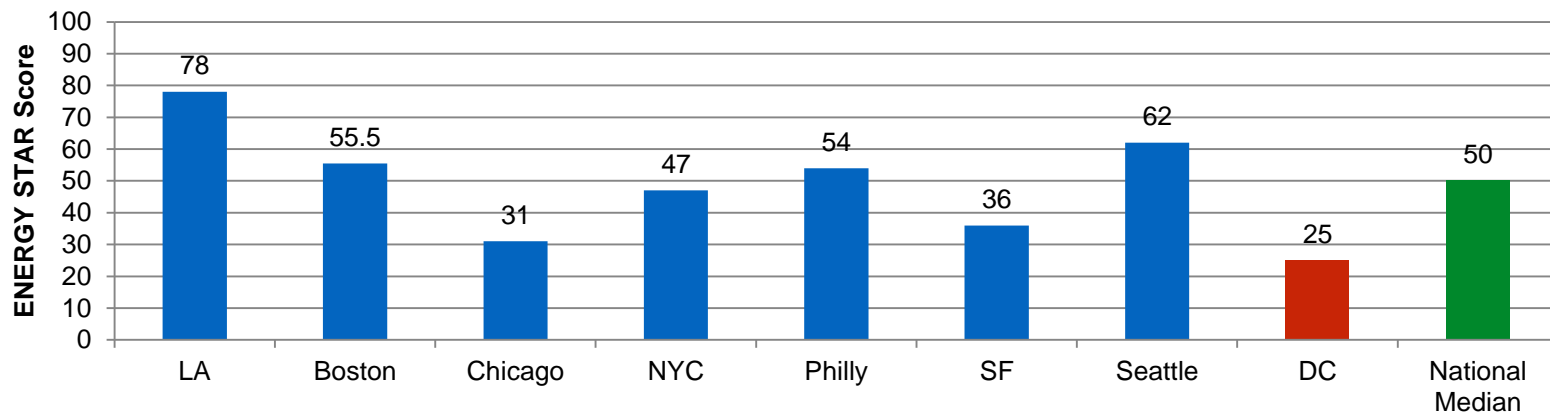
** - Boston does not disclose their Source Energy figures, Chicago does not have any warehouses in their public disclosure

COMPARATIVE ANALYSIS: WORSHIP FACILITIES



** - Boston does not disclose their Source Energy figures

COMPARATIVE ANALYSIS: SENIOR CARE



** - Boston does not disclose their Source Energy figures

SETTING STANDARD ABOVE LOCAL MEDIAN

Analysis – Marginal GHG savings from setting standard higher = 2%

K-12 School
Hotel
Fire station/Police station
Warehouses/Dist. Center
Worship Facility
Library
Recreation
Senior Care Community
Public assembly
Social/meeting

- Will there be significantly more of these facilities as the BEPS threshold area lowers?
- Does a higher BEPS impact how these facilities serve the community?
- Is a higher BEPS the only/best way to incentivize improvement to these facilities?
- What assistance could the District provide to help?

PERFORMANCE PATHWAYS

- **Performance Compliance Pathway**

- Buildings that do not meet the standard must reduce Site EUI by 20%

- **Standard Target Compliance Pathway**

- Buildings that do not meet the standard must reduce Site EUI by 20% or reduce Source EUI to meet standard

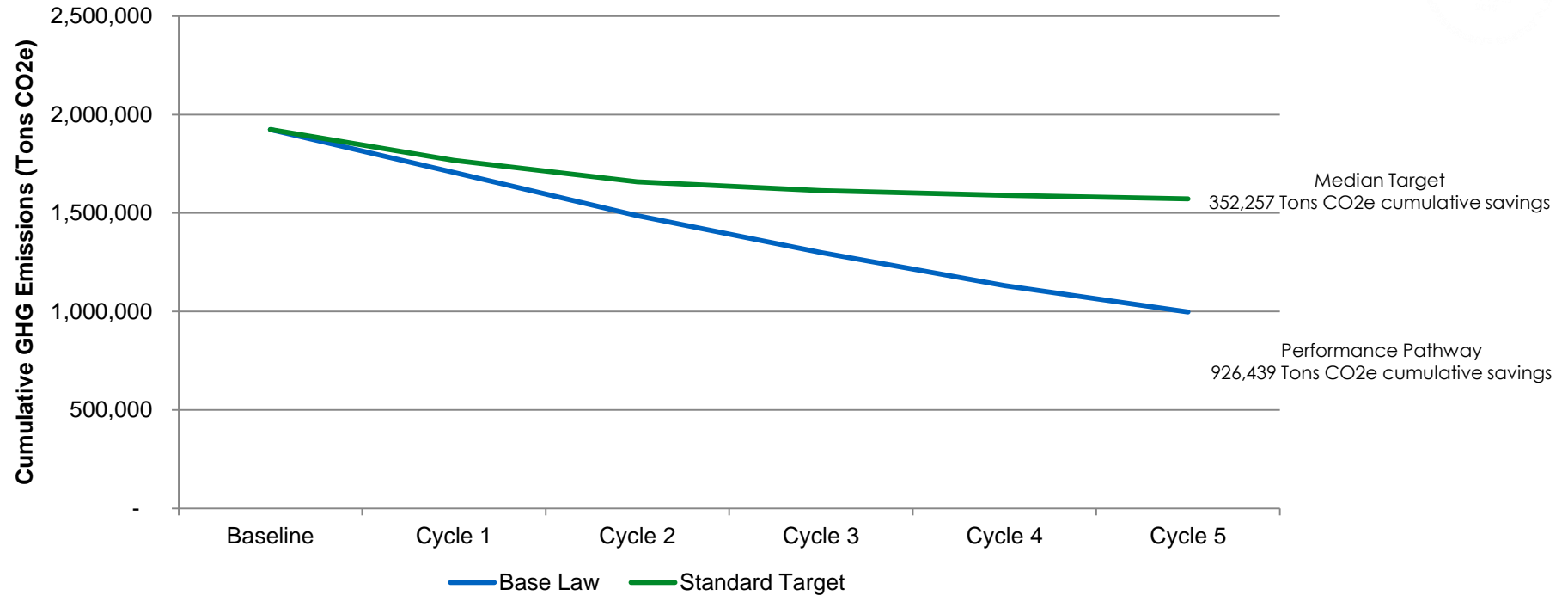
- ~~**Gap Reduction with Performance Compliance Pathway**~~

- ~~Buildings that do not meet the standard must reduce Site EUI by 20% or reduce the gap between Source EUI and standard by x% (We assumed 70% for this exercise)~~

- ~~**Gap Reduction removing Performance Compliance Pathway**~~

- ~~Buildings that do not meet the standard must reduce the gap between Source EUI and standard by x% (We assumed 70% for this exercise)~~ ~~**requires amendment to law~~

PERFORMANCE PATHWAY GHG SAVINGS COMPARISON



STANDARD TARGET PATHWAY DISCUSSION



- What are the remaining questions on whether or not to offer this as a pathway option?
- Do we re-evaluate this as an offering for cycle 2?
- What if it's a standard target plus (shooting for the median plus a few points)?

HIGHER EDUCATION/HOSPITALS - LEGISLATIVE LANGUAGE

“DOEE shall establish campus wide energy performance standards for post-secondary educational institutions and hospitals with **multiple buildings in a single location that are owned by a single entity**. Provided that the development of any standard by DOEE shall be based upon an analysis of existing building efficiency of each campus; and the compliance pathways shall achieve savings comparable to those outlined in subsection d.1 of this section.

DOEE shall consider:

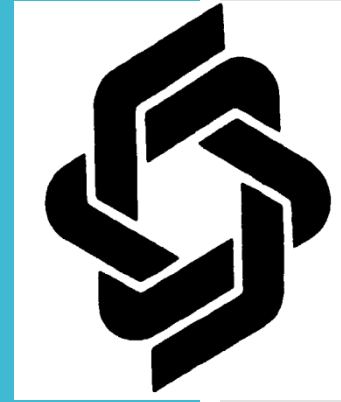
- a) the existence of any historic buildings and any restrictions related to the treatment of **historic buildings or districts**;
- b) the **diversity of building uses** and requirements for the campus and its operations; and
- c) the impact of any **zoning** regulation or **campus plan** requirement.”

Campus EPS Discussion

BEPS Task Force

March 31, 2020

Department of Energy and Environment



Meeting Agenda

- Impact of Covid 19 on College Campuses
- Overview of University Sector
- Campus EPS Discussion

COVID 19 Impact on DC College Campuses

- Immediate Impact:
 - March 2020: Campuses were closed and instruction went virtual through, at least, the end of the semester. Ongoing and planned construction was mostly halted. All campus, public, and athletic events, including 2020 Spring Commencement were canceled or postponed.
 - April 2020: Cash flow is a major issue as universities have lost most major sources of revenue (and will refund unused room and board). Federal funding for losses will likely cover only 10% of overall need. Some hiring freezes in effect. Universities supporting community by offering space for medical care surge.
- Longer-term Impact:
 - The impact of COVID 19 on summer and fall enrollments is unknown at this time, but are trending down nationally. These will significantly impact financial status moving forward.

University campuses face unique challenges

- Wide variety of uses and building sizes
- Central plants serving multiple buildings
- Lack of building level sub-metering
- Historic buildings
- Campus plan restrictions

Universities are committed to sustainability

Mayor's College and University Sustainability Pledge:

All DC Universities have collectively adopted a number of goals that align with Sustainable DC plan:

- Reduce greenhouse gas emissions by a collective average of 50% by 2032
- Increase the use of renewable energy to make up a collective average of 50% of the universities' energy supply by 2032.

Green Buildings:

- More than 12% of University space is LEED Certified, and almost 8% is certified LEED Gold or better.

What does benchmarking data tell us?

- 18 university campuses totalling ~21.5 million sf
 - 13 campuses currently classified as “College/University” (~18 million sf)
 - 3 campuses currently classified as “Residence Hall/Dormitory” (~800 k sf)
 - 1 campus currently classified as “Mixed Use” (~2.2 million sf)
 - 1 campus currently classified as “Library” (~500 k sf)
 - Each university has at least one “campus”
- Total university campus sf is ~6% of total benchmarked
- Total energy used by university campuses is ~10% of total benchmarked
- Wide variance in Source EUI in the 13 “College/University” campuses (125 - 600 kbtu/sf)
 - Median Source EUI of ~220 kbtu/sf
- Universities also benchmark 42 stand-alone buildings (~5.6 million sf)

Wide variety of universities in DC

Basing the Campus EPS on the median Source EUI for the sector may not make sense due to wide variation in university variables and the small sample size.

Institution	Size	Carnegie Designation	Research Activity	Highly Residential	Medical School	Engineering School
American University	large	Doctoral	High	Yes	No	No
Catholic University of America	medium	Doctoral	High	Yes	No	Yes
Gallaudet University	small	Doctoral	High	Yes	No	No
Georgetown University	large	Doctoral	Very High	Yes	Yes	No
George Washington University	large	Doctoral	Very High	Yes	Yes	Yes
Howard University	medium	Doctoral	High	Yes	Yes	Yes
Trinity Washington University	small	Master's College	NA	No	No	No
Univ of the District of Columbia	small	Master's College	NA	No	No	Yes

Benchmarking Breakdown

University owned and managed facilities > 50,000 SF

Classification	Facility Count	Square Feet (mm)	% of Total SF
CAMPUSES			
College/University	13	18.1	67%
Mixed Use Property	1	2.2	8%
Residence Hall/Dormitory	3	0.8	3%
Library	1	0.5	2%
Sub-Total	18	21.6	80%
STAND-ALONE BUILDINGS			
Residence Hall/Dormitory	17	2.2	8%
College/University	10	1.7	6%
Office	8	0.8	3%
Mixed Use Property	4	0.6	2%
Fitness Center/Health Club/Gym	1	0.2	1%
Parking	1	0.1	0.4%
Laboratory	1	0.05	0.1%
Sub-Total	42	5.6	20%
TOTAL	60	27.2	100%

~80% of benchmarked sf is on campuses

~70% of benchmarked “facilities” are stand-alone buildings

~80% of University space is in buildings >= 50K sf

Conclusion

It appears that the median source EUI of all university campuses is likely not a viable way to determine the sector EPS due to the large variance of space use across campuses.

The Consortium of Universities is committed to working collaboratively with DOEE and the Task Force to develop a viable Campus EPS.

ENERGY STAR PROPERTY TYPES FOR HEALTHCARE

- **Possible carve-out – “Hospital (General Medical & Surgical)” – ENERGY STAR Score**
- **Possible carve-out – “Other – Specialty Hospital” – Equivalent Metric**
- Regular Standard - Medical Office – ENERGY STAR Score
- Regular Standard - Senior Care Community – ENERGY STAR Score
- Regular Standard - Outpatient Rehabilitation/Physical Therapy – Equivalent Metric
- Regular Standard - Urgent Care/Clinic/Other Outpatient – Equivalent Metric
- Regular Standard - Ambulatory Surgical Center – Equivalent Metric
- Regular Standard - Residential Care Facility – Equivalent Metric

HIGHER EDUCATION/HOSPITAL DISCUSSION



Questions?

Recommendations on April 14 agenda



NEXT TASK FORCE MEETING



April 14

- Tradable Allowances – Presentation from Stormwater Credit Group
- Extended ACP for Deep Retrofits
- Higher Education/Hospital recommendations
- Additional rule items?

Bike Rack Add from Public Buildings Sub-committee

- Because the District has aggressive solar goals, discuss if solar could be counted towards performance or prescriptive pathways



ANNOUNCEMENTS

