REVISING THE CITY'S TOD ENVIRONMENTAL BONUS PROGRAM

January, 2021

Stakeholder input gathered by ULI Charlotte

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ABOUT ULI - THE URBAN LAND INSTITUTE

The Urban Land Institute is a global, member-driven organization comprising more than 46,000 real estate and urban development professionals dedicated to advancing the Institute's mission of providing leadership in the responsible use of land and in creating and sustaining thriving communities worldwide.

ULI's interdisciplinary membership represents all aspects of the industry, including developers, property owners, investors, architects, urban planners, public officials, real estate brokers, appraisers, attorneys, engineers, financiers, and academics. Established in 1936, the Institute has a presence in the Americas, Europe, and Asia Pacific regions, with members in 80 countries. The ULI's mission is to provide leadership in the responsible use of land and in creating and sustaining thriving communities worldwide. ULI Charlotte carries forth that mission by serving the Charlotte, Piedmont, and Western North Carolina's public and private sectors with pragmatic land use expertise and education.

ABOUT ULI CHARLOTTE

ULI Charlotte is a District Council of the Urban Land Institute. The District Council offers ULI services and benefits at a regional level. The mission of ULI Charlotte is to complete the ULI experience at a local and regional level through education, research and the exchange of ideas and experiences.

SUPPORT FOR TAP

Support for this TAP was provided by the City of Charlotte's Sustainability and Resilience Office and the Planning, Design, and Development team. Additional research (Appendix C) conducted by ULI's Greenprint Center for Building Performance was supported through a grant from the Bloomberg Philanthropies American Cities Climate Challenge.

ABOUT ULI TAPS

The ULI Charlotte Technical Assistance Panel (TAP) Program is an extension of the national ULI Advisory Services program. ULI's advisory services panels provide strategic advice to clients (public agencies, nonprofit organizations, or nonprofit developers) on complex land use and real estate development issues. The program links clients to the knowledge and experience of ULI and its membership.

Since 1947, ULI has harnessed the technical expertise of its members to help communities solve difficult land use, development, and redevelopment challenges. More than 700 panels have been conducted in 12 countries.

While most TAPS are a two-day intensive work session and feedback by the volunteer panelists, this TAP was requested to collect input from the development community on a specific set of questions. This TAP was held remotely via online video conferencing with staff members and stakeholders due to the COVID-19 pandemic.

TAP PANEL

Members of ULI were selected to provide a variety of experiences. Full biographical sketches are included in the appendix to this report. Panelists for the study were:

- Craig Lewis | Principal | Stantec |Panel Chair
- Irene Dumas Tyson | BOUDREAUX
- Todd Okolichany | City of Asheville

Theresa Salmen | Executive Director | ULI Charlotte
Eddie Moore | Contract Writer | McAdams Co.

KEY CITY STAFF

A special thank you to the following individuals who provided the briefing materials and discussion to prepare the panel for the engagement:

- Sarah Hazel, Chief Sustainability and Resiliency Officer, City of Charlotte
- Katie Riddle, Energy & Sustainability Coordinator, SEAP Project Manager, City of Charlotte
- Laura Harmon, Entitlement Services, Planning Department, City of Charlotte
- Andrew Ausel, UDO/Annexation, Planning Department, City of Charlotte

STAKEHOLDERS

The following individuals participated in the stakeholder interviews:

- Rob Cox, UNCC
- Tom Coyle, Childress Klein Properties
- Jason Fish, Spectrum Co.
- Jeff Harris, LMC
- Kory Jeter, Greystar
- Mike Lizotte, UNCC
- Matt Lucarelli, Beacon Partners
- Keith MacVean, Moore & Van Allen
- Katie Maloomian, Crescent Communities
- Summer Minchew, ecoImpact Consulting
- Colin Walker, Grubb Properties

PANEL PROCESS

The City of Charlotte's Strategic Energy Action Plan (SEAP) creates the framework for the City of Charlotte to become a low carbon city by 2030 and for City buildings and equipment to be zero carbon by 2050. The City requested assistance through the ULI Technical Assistance Panel Program to interview developers to learn more about the environmental bonus program as a policy tool for implementing the SEAP. The SEAP acknowledges combining public and private investment in certain districts to incentivize projects that promote and help achieve the City's goals.

This brief assignment included the Panel receiving a short verbal briefing with supporting briefing documents. Though TAPs are usually in-person events, this TAP was conducted remotely to ensure the safety of all participants during the COVID-19 pandemic. ULI worked with the City to identify developers in the Charlotte community to provide open feedback. The Panel interviewed two stakeholder groups, utilizing the questions provided by the City of Charlotte. Additionally, ULI is conducting research on incentives offered in TOD zoning to encourage additional energy efficiency. Upon completion of this research, it will be included in the appendix of this report.

OVERVIEW OF THE ASSIGNMENT

The City of Charlotte's Sustainability and Resilience Office and the Planning, Design, and Development team are seeking feedback on proposed revisions to the Transit Oriented Development Environmental Bonus, as part of the Unified Development Ordinance process. So far, the City has not seen participation in the Environmental bonus, and therefore, are seeking feedback on some draft changes and elements of those changes to better understand what would encourage more participation, and more sustainable practices. These draft revisions are made specifically with a focus on supporting the City's goals to reduce energy usage and our carbon footprint, as outlined in the Strategic Energy Action Plan.

INTERVIEWS WITH STAKEHOLDERS

Based on specific questions provided by the City, below is a summary of the responses received from the stakeholders. Comments are intentionally provided without direct attribution to a stakeholder to encourage more open sharing of views.

1. **Of all zoning bonuses – which ones do you most often utilize? Why?**
    a. TOD office development – Willing to pay for additional height.
    b. TOD residential development – Building height typically up to 5 stories or less and not much development gain for a height bonus.
    c. Affordable housing buyout or LEED bonuses primarily utilized. Other bonuses are not feasible on most projects or too vague with staff on when they can be used (for example, providing a public or private street).
    d. LEED bonus, open space for office development only, and affordable housing fee in lieu as last resort.
    e. New street bonus has been considered and the number of potential points is attractive.
    f. Based on cost, utilizing new street bonus must benefit the development and not to just provide connectivity to nowhere.
    g. LEED is typically not used for residential development for stick built residential up to 5 stories or less, but commonly used for office development, primarily for core and shell. Default to payment in lieu as last option and when only necessary.
    h. South End is currently the only TOD market where it pencils out to exceed five (5) stories for residential development.
    i. Outside South End, there is not a market reason to utilize the bonuses.
    j. Any fee in lieu bonus must benefit the development.
    k. For residential development, may want to consider National Green Building Standard (NGBS) as a potential bonus option in addition to LEED.
    l. For governmental buildings and structures, the U.S. General Services Administration (GSA) accepts LEED and Green Globes Building Certification for building standards.
    m. City may want to explore Enterprise Green Communities and Green Globes Building Certification standards as bonus options.
    n. Current City staff seem to have difficulty tallying up and justifying bonus points.
    o. Any potential bonuses for adaptive reuse? This would be helpful due to the complexities of these projects.

2. **What makes utilizing a zoning bonus easy and or difficult?**
    a. The setup and affordable housing buyout is fairly simple to navigate.
    b. Incremental steps in LEED certification, from a bonus standpoint, should result in a higher points system, particularly for Gold or Platinum.
    c. A residential developer is currently seeking height and building length bonuses by utilizing on-site affordable housing option. Project is large enough to provide on-site affordable units. Working with

the City Housing +Neighborhood Services Asset Management Team for the affordable unit structure. Environmental incentives did not offer enough points.
d. Wood frame residential projects is the primary residential building type and height incentive does not assist with this type of construction.
e. In some instances, rezonings to TOD and other Urban districts have resulted in City staff making unrelated offsite improvement requests due to deferred infrastructure maintenance issues.

3. Regarding option #6

Do you already utilize any of these high-performance construction options? Why or why not?

a. Residential/multi-family projects should have the opportunity for bonus options by utilizing Energy Star, NGBS, or other formats, where LEED is not practicable.
b. LEED Silver for an office project is achievable.
c. LEED Certified Interiors is not often utilized.
d. Tenants drive LEED certification above the minimum standards.
e. NGBS utilized for multi-family development.
f. Equity partners and investors in developments are promoting LEED and similar certifications.
g. WELL Certification promotes occupancy standards for health and safety and does not compete with LEED standards.
h. Arc Skoru is an existing sustainability performance platform for energy, water, waste, and transportation. Possible option for the City to explore to broaden existing incentives.

What is your typical cost per square foot to be LEED certified in your experience?

a. LEED certified minimum for core and shell development is typically standard. Minimal expense.
b. Becoming more challenging to meet the LEED certified minimum standards based on recent revisions. LEED Silver and up becomes very expensive.
c. Payment in lieu makes sense for certification above LEED Silver.

Would this environmental bonus incentivize you to do more than you are currently doing and utilize them? Why or why not?

a. Either you are already doing it or not, might force the actual 'certification' which some developers do not want to do, and instead just track.

Duke Energy Design Assistance Program – Have you ever utilized this in your buildings? How was your experience? Would you do it again? Why or why not?

a. No.
b. Yes, from a residential developer. Duke has been responsive during the process.
c. Yes, from an office and industrial developer. Must engage Duke early in the process, so materials and equipment can be ordered to receive the incentive.
d. A positive is there is no upfront cost(s) associated with the program.

4. Do developers ever utilize RECs already? On a yearly basis? If so, are these local RECs or national RECs? Regarding utilizing them – why or why not? If yes, you utilize – how many and how much $ do you spend on them? Would receiving points be an incentive to doing more?

Renewable Energy Certificates (RECs) are a market-based instrument that certifies the bearer owns one megawatt-hour (MWh) of electricity generated from a renewable energy resource. Once the power provider has fed the energy into the grid, the REC receive can then be sold on the open market as an energy commodity. A renewable Energy Certificate (REC) acts as an accounting or tracking mechanism for solar, wind, and other green energies as they flow into the power grid. Since electricity generated from renewable energy sources is indistinguishable from that produced by any other source, some form of tracking is required.

a. Do not think this credit will ever be used and City staff has indicated the same.
b. Specific office and industrial developer has utilized RECs. Basically paying for points at the end of development with a REC purchaser. You can buy LEED points based on the performance of a building. Only used during a LEED process.
c. LEED ties RECs to on-site renewable energy options.
d. RECs are purchased for only a year and not maintained long term.

5. **Regarding option 7b: Would you be willing to pay to support the city's goal to address low-income housing experiencing energy burden through rehab projects that improve energy usage and therefore energy burden?**

   "Low-income households face disproportionately higher energy burden. Energy burden is defined as the percentage of gross household income spent on energy costs. According to the U.S. Department of Energy's (DOE) Low-Income Energy Affordability Data (LEAD) Tool the national average energy burden for low-income households is 8.6%, three times higher than for non-low-income households which is estimated at 3%. In some areas, depending on location and income, energy burden can be as high as 30%. Of all U.S. households, 44%, or about 50 million, are defined as low-income." – Energy.gov

   $4.75/square foot for building above the height – subject to change.
   a. Would assume so. It would be the same buyout as affordable.
   b. The easier to implement, the more this specific bonus will be utilized.
   c. Current affordable housing bonus is difficult. Even applies to locating potential offsite affordable housing locations.
   d. Existing difficulty drives residential builders to a pay a fee in lieu.
   e. Need to push on the affordable housing buyout amount. The reason it works in South End is the land prices and deal structures can support $4.75/sf. It should adjust based on the zoning market type and financial structure of deals.

6. **What type of bike facilities do you currently build and/or design for? Would you be willing to go above and beyond in your bike facilities to build higher? How often are you providing additional facilities for bikes and/or scooters? Should we be looking more broadly than bikes, e.g. scooters? Do you ever build better or more shower facilities to accommodate your bikers / encourage more biking? What do you think is the most impactful in encouraging biking in the Charleston example below?**
   a. Yes, but an additional concern is improving the surrounding bike network.
   b. Current bike ownership and use of storage rooms are very high in demand due to COVID-19.
   c. Provide the flexibility to the developer for the location(s) of bike facilities.
   d. Current residential tenants prefer internal bike facilities compared to outdoor facilities due to potential theft. Location of the facilities are in proximity to entrances.
   e. Developers provide bike storage within dwelling units that should be considered a bonus option.
   f. +- $20,000 is the current average price of a parking space within structured parking facilities. Bike facilities within structured parking facilities cannot impact or eliminate provided parking spaces. If bike facilities are located in a parking deck, storage rooms will need to be provided on each floor. Typically two (2) parking spaces is needed for each bike storage room.
   g. Number of required bike storage facilities for office and industrial developments is way too high.
   h. A mixed-use developer is incorporating multi-modal options as part of their developments (car and ride share, share scooters, trip chaining, etc.). Interested in partnering with City on other potential programs.
   i. Point system incentive for bike facilities should be less than proposed.

Other/Additional Notes:

a. City staff is concerned that existing height incentives favor larger developments compared to smaller developments.
b. City staff plans to eventually add additional optional development incentives to the Urban as well as the TOD zoning districts after initial UDO approval by City Council.
c. City staff would like to further promote the current and future height incentives to developers. A concern raised is the historical outreach made by City staff to developers on existing TOD height incentives.
d. LEED building certifications may not be a viable option for the height incentives since building tenants drive such certifications and not the building type (residential and non-residential).
e. On-site renewable energy options are cost prohibitive for residential developments.
f. Building length maximum is an obstacle for residential developments.
g. Parking deck design standards in TOD is very aggressive for wood frame residential with building activation at various height levels and step back requirement. Do away with step back requirement (for the residential floors) since it increases the building footprint and reduces unit yield. Wood frame residential developers do not need the height bonus.
h. City should look and examine minimum LEED thresholds for electrical vehicle charging areas and bicycle parking structures and showers and require less than LEED thresholds. Potential 2%-3% of the number of required parking spaces.
i. Existing bicycle infrastructure (safe bike paths, trails, parking at destinations) must improve to encourage more cyclists and to support the incorporation (investments) of bike facilities into developments.
j. TOD areas need to become more difficult for vehicle maneuverability and easier to bike and walk. Too much free parking in TOD areas.
k. Tree bonus should be considered for greater shade and for reducing the carbon footprint.
l. Redeveloping Brownfield sites offer more financial incentives compared to developing under existing TOD standards.

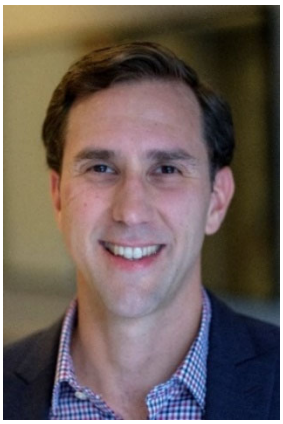
APPENDIX A PANELIST BIOGRAPHIES

Craig Lewis, FAICP, LEED AP, CNU-A | Senior Principal | Stantec | Charlotte, NC

Craig is a Senior Principal with Stantec's Urban Places, a global practice that brings together experts in smart mobility, resilience, real estate feasibility, planning and urban design, mixed-use architecture, smart cities, and brownfield redevelopment. For more than 25 years, he has been infusing a multi-disciplinary approach to building vibrant, urban places across North America that are more livable, equitable, and sustainable. His national, award-winning work for small towns, large cities, transit agencies, mixed-use developers, housing authorities, hospitals, and universities spans the range of city building to include planning, urban design, placemaking, active transportation, form-based codes, and smart mobility (autonomous, connected, electric, and shared). He holds a Masters in Public Administration from the University of North Carolina at Charlotte, is a Fellow with the American Institute of Certified Planners (FAICP), a LEED (Leadership in Energy and Environmental Design) Accredited Professional, and is an accredited member of the Congress for the New Urbanism (CNU-A). He received the 2013 Community Sustainability Award from Sustain Charlotte and is a signatory on the Charter of the New Urbanism. He is Chair of the ULI Curtis Global Infrastructure Initiative and is a Board member for ULI-Charlotte.

Irene Dumas Tyson, AICP, Associate AIA | Director of Planning & Corporate Associate | BOUDREAUX | Columbia, SC

Irene brings broad experience and knowledge in urban and town planning and design, campus master planning, community visioning and development, and historic preservation. Prior to joining BOUDREAUX, Irene was a Senior Planner with Carter Goble Lee, working on master planning projects in Washington, D.C., North Carolina, Hawaii, and Florida. Irene is a 2011 graduate of the Urban Land Institute Sustainable Leadership Institute and has served numerous leadership roles with ULI South Carolina, is a former trustee of Leadership South Carolina, former board member of the Saluda Shoals Foundation, a founding board member of the Columbia Design League, served as co-chair for the Governor's School for the Arts Midlands Advisory Committee and served on the Clemson University Landscape Architecture Professional Advisory Committee. A native of Prentiss, Mississippi, she received her Bachelor of Architecture from Mississippi State University, where she serves on the School of Architecture Advisory Council and was recognized as an Alumni Fellow. Irene was recognized as a 2020 Woman of Influence by the Columbia Regional Business Report.



Todd Okolichany | Director of Planning and Urban Design | City of Asheville, NC

Todd is responsible for leading sustainable growth, promoting equitable development and shaping the built environment. While at the City Todd has led the implementation of projects that have addressed long-standing inequities in the community, such as the award winning Living Asheville Comprehensive Plan, and has advocated for inclusive prosperity for the city's diverse community. Prior to moving to Asheville he oversaw the City of Fort Lauderdale's long-range planning program. Todd also previously worked for an internationally renowned urban planning and architecture firm in New York City, where he received a Master of Science degree in city planning from Pratt Institute.

APPENDIX B ADDITIONAL RESOURCES PROVIDED BY THE CITY

*Charlotte's current base zoning standards (subject to change):
https://library.municode.com/nc/charlotte/codes/code_of_ordinances?nodeId=PTIICOOR_APXAZO_CH12DESTGEAP_PT2OREPALO_S12.202ABIPAST

* TOD map:
https://charlotte.maps.arcgis.com/apps/webappviewer/index.html?id=154674c8ea364da687ce0f3248ffdac6

* TOD Ordinance:
https://charlotteudo.org/wp-content/uploads/2020/07/TOD-ZoningOrdChapter15_amended_06_2020.pdf

Current TOD Environmental Bonus Options

Environmental

Charlotte's Transit Oriented Development districts are intended to accommodate a development pattern that prioritizes the efficient use of space and the creation of a rich mixture of uses within a highly walkable, pedestrian oriented environment. Projects may not use more than 20 points in the Environmental category.

	Bonus Actions	Points Awarded
5.	5% in total lot area of Public Open Space in addition to that required by Section 15.4.9 and any other ordinance requirements. May only be used in TOD-UC, TOD-CC, and TOD-NC.	**TOD-UC:** 15 Points **TOD-CC:** 10 Points **TOD-NC:** 10 Points
6.	High Performance construction (certification under LEED silver or a LEED equivalent standard).	**TOD-UC:** 15 Points **TOD-CC, TOD-NC:** 10 Points **TOD-TR:** 5 Points
7.	At least 25% of development's energy needs generated on-site.	**TOD-UC:** 10 Points **TOD-CC, TOD-NC, TOD-TR:** 5 Points

Transportation Improvements

A key principle of the TOD Districts is ensuring that Charlotte's future growth be built around a multi-modal transportation system. Transportation bonuses are focused around the provision of facilities, amenities, and infrastructure improvements that will provide efficient mobility options for Charlotteans as the city continues to grow.

	Bonus Actions	Points Awarded	
		TOD-UC, TOD-CC	TOD-NC, TOD-TR
8.	**New Street Connection:** New public or private (built to public standards) beyond those required by the TIS and/or the Zoning/Subdivision Ordinance, as approved by the CDOT Director.	120 points	40 points
9.	**Dedication of Future Transit Rights of Way along transit corridors (per 100 ft):** See recommended alignment for dimension.	3 points	2 points

Proposed Draft Edits to Environmental Bonus – for both TOD and other Urban Districts

	High Performance Construction	Points Awarded
6.	6a. Duke Energy Design Assistance Program	TOD-UC: 15 points TOD-CC, TOD-NC: 10 points TOD-TR: 5 points
	6b. LEED Silver	TOD-UC: 15 points TOD-CC, TOD-NC: 10 points TOD-TR: 5 points
	6c. LEED Gold	TOD-UC: 20 points TOD-CC, TOD-NC: 15 points TOD-TR: 10 points
	6d. LEED Platinum	TOD-UC: 25 points TOD-CC, TOD-NC: 20 points TOD-TR: 15 points

	Low Carbon Actions	Points Awarded
7.	7a. Off-site Renewable Energy Credits (RECs) • Within a certain radius of Charlotte / within Duke Energy Carolinas	TOD-UC: 10 points TOD-CC, TOD-NC: 5 points TOD-TR: 5 points
	7b. Fee in Lieu for Housing & Neighborhood Services Affordable Housing Equitable Energy Efficiency Home Rehab Projects • Developer pays to build higher and money goes into a Housing and Neighborhood Services fund at the City to fund Affordable Housing Energy Efficiency Home Rehab Projects • These projects will 1. Lower the cost of energy for tenants and owners, contributing to the solution of energy burden and 2. Save energy in the city, resulting in overall lower carbon emissions from energy generation sector. (This is in the ideation stage)	Per square foot based on additional height
	7c. Exceptional Bike Facilities Level1: **Covered Bike Parking**: *% of required short and long term spaces are covered (Above base zoning standards)* Level 2: **Bike Lockers** *% of required are bike lockers. Probably most useful in residential and office as a % of long term required spaces. (Above base zoning standards*)* Level 3: **Electronic Bike Lockers** *% of required are for short term use. Like an Amazon locker but for bikes. Anyone can check one out electronically. (Above base zoning standards*)* Level 4: **Secure Bike Station (Unstaffed)**: *Unstaffed bicycle stations are shared access storage areas in which registered cyclists lock their own bicycles. Cyclists gain access to these facilities by registering for a key or code.* Level 5: **Secure Valet (Staffed) Bike Station:** *Staffed bicycle parking facilities offer a high level of security and often provide repair and retail services to generate revenue to offset staffing costs and to provide additional services for users. Bikes parked in staffed facilities are typically not locked if they are checked in and out by the staff person.* Also want to explore Charleston's example as well.**	*Level 1:* TOD-UC: 10 points TOD-CC, TOD-NC: 5 points TOD-TR: 5 points *Level 2:* TOD-UC: 15 points TOD-CC, TOD-NC: 10 points TOD-TR: 10 points *Level 3:* TOD-UC: 20 points TOD-CC, TOD-NC: 15 points TOD-TR: 15 points *Level 4:* TOD-UC: 25 points TOD-CC, TOD-NC: 20 points TOD-TR: 20 points *Level 5:* TOD-UC: 25 points TOD-CC, TOD-NC: 20 points TOD-TR: 20 points

**Charleston's Exceptional Bike Parking & Facilities

Requirements: **Exceptional Bicycle Parking and Facilities**

This option, designed for long-term, overnight and work-day bicycle storage, is only available for buildings in which more than fifty (50%) percent of the gross square footage is dedicated to residential and/or office use.

For one (1) point, provide and maintain the following:

(a) Reduce vehicle parking requirements. Minimum vehicle parking requirements may be reduced at the rate of one (1) vehicle space per every six (6) bicycle spaces, up to a maximum of ten (10%) percent of vehicle parking requirements for the building.

(b) Bicycle Parking and Facilities.

For residential

Provide an onsite enclosed and covered bicycle parking room that is secure and ventilated and which can accommodate one (1) bicycle parking space per three bedrooms, rounded up to the next whole number. A studio unit shall count as one (1) bedroom for the purpose of this calculation. The facility shall include a bicycle work stand, a basic set of bicycle repair tools and an air pump. The use of security cameras and/or security personnel is encouraged. Spaces within dwelling units do not count toward the bicycle parking requirement.

OR

For office

Provide an onsite enclosed and covered bicycle parking room that is secure and ventilated and which can accommodate one (1) bicycle parking space for every ten thousand (10,000) square feet of net office use, rounded up to the next whole number. The facility shall include a bicycle work stand, a basic set of bicycle repair tools and an air pump. The use of security cameras and/or security personnel, and the installation of a vending machine stocked with patch kits, inner tubes, drinks and energy bars are encouraged. A minimum of two (2) onsite showers with associated changing facilities, restrooms and lockers must also be provided within the bicycle parking room or in close proximity thereof.

OR

For mixed use office and residential

If there is mix of office and residential uses in the building, provide an onsite enclosed and covered bicycle parking room that is secure and ventilated and which can accommodate one (1) bicycle parking space per 3 bedrooms, rounded up to the next whole number, plus one (1) bicycle parking space for every fifteen thousand (15,000) square feet of net office use, rounded up to the next whole number. A studio unit shall count as one (1) bedroom for the purpose of this calculation. Spaces within dwelling units do not count toward the bicycle parking requirement. The facility shall include a bicycle work stand, a basic set of bicycle repair tools and an air pump. The use of security cameras and/or security personnel is encouraged. A minimum of two (2) onsite showers with associated changing facilities, restrooms and lockers must also be provided within the bicycle parking room or in close proximity thereof.

General requirements

i. Bicycle rack selection criteria.
   (a) Provide at least two (2) points of contact for a standard bicycle frame (racks that are designed to support a bicycle primarily by a wheel are not allowed).
   (b) Have rounded surfaces and corners.
   (c) Be coated in a material that will not damage the bicycle.
   (d) Be securely anchored or fastened to a hardscape surface.

ii. Bicycle parking space dimensions.
   (a) Accommodate a wide range of bicycle frame types and provide adequate space between bikes, especially those with wider handlebar stems. Each bicycle parking space shall be sufficient to accommodate a bicycle at least six (6) feet in length and two (2) feet wide.
   (b) An aisle or other space shall be provided for bicycles to enter and leave the facility.

iii. Lighting and site materials.
   (a) Lighting shall be provided such that all bicycle parking facilities are thoroughly illuminated and visible from adjacent sidewalks, parking lots or buildings during hours of use.

(b) Bicycle parking shall be located on a hard surface material such as concrete, asphalt, brick or other stable surface the rack can be securely fastened to.
(c) Signage shall demarcate the bicycle parking and be placed in a visible and highly used location to inform users of the system in place.

iv. Proximity to building entrances.
(a) Bicycle parking shall be located within close proximity to, or inside, the main building. Bicycle parking shall be located no further from the building's main or secondary entrance than the closest automobile parking space to that entrance or no more than fifty (50) feet away, whichever is closer.
(b) If required bicycle parking is not clearly visible from the main entrance of the building, wayfinding signs shall be posted at the primary entrances indicating the location of the parking.

v. Certificate of occupancy. If the committed points in this category are not achieved, the owner shall be required to substitute incentive options and earn all points necessary to justify bonuses before a certificate of occupancy will be issued.

vi. Longevity. This incentive option shall exist and be maintained by the owner for the life of the corresponding building utilizing bonuses.

vii. Implementation. This incentive option directly correlates to a specific building, meaning the exceptional bicycle parking and facilities need to be associated with the building utilizing bonuses.

viii. Point redemption. Points earned from this incentive option may only be applied to its corresponding building and may not be applied to other buildings on the site.

APPENDIX C ADDITIONAL RESEARCH INTO DEVELOPMENT BONUS INCENTIVES FOR BUILDING SUSTAINABILITY

Compiled January 2021 by August Williams-Eynon, Senior Associate, Sustainability - ULI Greenprint Center for Building Performance

Urban Land Institute Center for Sustainability and Economic Performance

INTRODUCTION

As part of the upcoming Unified Development Ordinance (UDO) and comprehensive plan updates, the City of Charlotte is looking to stimulate greater pursuit of high-performing buildings through development bonus incentives. Though current incentives (known as the Environmental Bonus) exist within the city's transit-oriented development districts, these have not seen as much private sector uptake as desired and may need restructuring to encourage further adoption. This research aims to provide a survey of resources and examples from other cities that might be useful in suggesting models for development bonus incentives, or other helpful incentives and regulations to pair with development bonuses, for Charlotte to consult when revising their own bonus system.

RESEARCH QUESTIONS

This research is structured around three key questions:

1. ***Building performance.*** What are the different certification systems (similar to LEED Silver) that cities have incorporated into development bonus provisions? Which have shown strong uptake by developers?
2. ***On-site energy generation.*** How have cities structured development incentive policies to successfully encourage on-site energy generation? How have cities included complementary policies (such as EV readiness or bicycle facility incentives) within energy generation development bonus provisions?
3. ***Affordable housing/environmental bonus option.*** How can city policies incentivize energy efficiency in affordable housing? Specifically, are any cities using fee-in-lieu policies as development bonuses (in which developers voluntarily pay into a fund to receive additional density or height), or similar policies to finance efficiency upgrades in existing affordable housing? How successful have these policies been?

Each will be addressed separately.

BUILDING PERFORMANCE

The LEED system is still the most common and recognized green building certification system in the US, sending the strongest market signal in the real estate community around sustainability credentials. Among other systems – such as Green Globes, Passive House, ENERGY STAR, Living Building Challenge Certification, EarthCraft, Enterprise Green Communities, National Green Building Standard (NGBS), or BREAAM – ENERGY STAR is perhaps the most recognizable, while adoption of Passive House and Living Building certifications remain somewhat limited due to their stringency, though they are beginning to gain traction alongside Green Globes among some municipalities. BREAAM has only recently entered the US market and is less widespread.

Development bonuses (for density or height) are one of many potential incentives available for stimulating green buildings – others include tax incentives or expedited permitting, for example. A review of the American Council for an Energy Efficient Economy's database on building policies and incentive programs found only 10 municipalities that use development bonuses (density or height) to encourage green buildings, excluding Charlotte. However, this database is not exhaustive – for example, NGBS is included as a criteria for awarding development bonuses in another 6 localities. Further, many cities in the Urban Sustainability Directors Network (USDN) have expressed interest in using zoning to stimulate green building, and use of density bonuses or other zoning incentives to boost sustainability is likely to rise.

Many of the 10 cities mentioned above (see attached spreadsheet for more detail) used LEED certification as their criteria for awarding the bonuses, while noting that an "equivalent" system could be substituted (sometimes without any extra details, though some systems denote equivalent programs: Portland's system mentions Green Globes, the Passive House Standard, or the Institute for a Living Future's Living Building Challenge or Zero Energy Building certification).

None used a point system like Charlotte's, instead awarding a simple bonus for achieving LEED or another performance milestone.

Although the certification is more stringent than LEED, another program worth noting comes from Seattle. The city is running a pilot density bonus program, which awards 25% more floor area and anywhere from 12.5 – 30 feet of additional height depending on residential/nonresidential construction and existing height limits in zoning for new buildings or additions that achieve Living Building Challenge certification or meet the 2030 Challenge.

Several cities offer a tiered system of progressively higher bonuses for higher LEED certifications.

- In Miami, in the downtown core zone LEED Silver buildings can receive an extra 2% of the floor lot ratio, while LEED Platinum buildings can receive an additional 13%.
- In Arlington County, VA, one of the better-known programs, LEED Silver projects are eligible for a 0.25 FAR bonus, LEED Gold projects a 0.35 FAR bonus, and LEED Platinum projects a 0.5 FAR bonus.
- Philadelphia offers a similar system, exchanging 24 feet of extra height for LEED Gold projects and 36 feet for LEED Platinum projects.
- Pittsburgh provides an extra 20% floor area and height if a building reaches any LEED certification level.

Success of development bonus programs

The relative success of these programs is somewhat difficult to determine, and it is debatable whether development bonuses are the most effective tools to encourage highly efficient buildings. Seattle, for example, offered height and FAR bonuses from 2006-2011 for reaching LEED Silver or above and contributing to affordable housing; by the end of 2011, only 3 projects had been completed – whereas from 2009-2012, over 80 projects participated in the city's expedited permitting program for LEED Gold or (Built Green 4-star) buildings.

Similarly, as Table 1 below illustrates, the cities with development bonuses for high-performance buildings are frequently not national leaders in the number of LEED buildings – other market factors or city policies and incentives may be more effective at encouraging LEED uptake (see below). In particular, local building code has a stronger connection to rate of uptake than incentives. For example, in the table below, Austin, TX is the only city with a development bonus that appears in the ACEEE's database that's also a leader in cities with the most LEED buildings.

Cities with development bonuses for high-performance buildings in ACEEE's database	Cities with the most LEED buildings in 2019
Atlanta, GA	Washington, DC
Austin, TX	Chicago, IL
Bridgeport, CT	Dallas, TX
Charlotte, NC	Cincinnati, OH
Hartford, CT	New York, NY
Miami, FL	Houston, TX
Minneapolis, MN	Los Angeles, CA
Nashville, TN	San Francisco, CA
Philadelphia, PA	Austin, TX
Pittsburgh, PA	Philadelphia, PA
Portland, OR	Denver, CO

Sources: ACEEE Policies for Existing Buildings; CommercialCafe Top 50 US Cities Ranked by Progress of Urban Sustainability

As an interview with Urban Sustainability Directors Network program director Kathryn Wright noted, LEED certification can be time-consuming and costly for developers to achieve. In some markets, development bonuses may not be enough to justify the added investment. **Additionally, often, the most successful programs pair incentives with requirements for high-performance through updating energy codes or issuing ordinances for a combined "carrot and stick" approach.**

To get around this barrier, some municipalities are adopting different approaches that may be simpler. Boston now requires that large buildings undergoing site review demonstrate that they would be "certifiable" under a LEED Rating System, but not complete the certification process.
Other municipalities use specific performance metrics:

- Minneapolis will add an additional 1.0 or 2.0 to the allowable FAR in downtown districts for demonstrating a 35% or 45% increase in energy efficiency over the state energy code.
- Atlanta offers an extra 30 feet of height and expedited permitting for buildings over 100,000 square feet that demonstrate a 10% improvement of energy performance above city energy code, along with providing at least 3 electric vehicle charging stations (and meeting 2 other sustainability criteria).

In addition, Charlotte may wish to consider other means of stimulating green building investment. Other types of incentives, like tax credits or exemptions, may be useful to accompany a development bonus. For example, Montgomery County, Maryland's successful tax abatement program, which was recently updated to match the pace of usage and adoption of new energy codes, abates a percentage of property taxes for 4 years for new construction in exchange for achieving energy performance at least 10% above local energy code (5-10% abatement), with 40% or better performance qualifying for up to 100% abatement.

High-performance buildings can be encouraged through ordinances or green building standards. For example, Alexandria, VA's Green Buildings Policy requires any new development or major renovations that need a Development Site Plan or special use permit to achieve LEED, Green Globes, or EarthCraft certification. Seattle has a similar policy in its new Green Building Standards, in which developments above a certain size that are receiving extra density or height in exchange for affordable housing or open space are currently required to achieve LEED and will soon have the choice to achieve Passive House Institute or Living Building Challenge options as well.

Though Passive House may be less familiar to local builders and developers, it is worth considering as an option for its stringent focus on advanced energy performance. Though added upfront costs are frequently named as a barrier, these can drop quickly: the Pennsylvania Housing Finance Agency, which encourages use of Passive House standards for projects it awards tax credits to, found that within three years of

incentivizing the standard, costs dropped from being 5.8% more expensive to 3.3% less expensive than conventional construction, as expertise diffused through the market.

ON-SITE ENERGY GENERATION AND COMPLEMENTARY POLICIES

Development bonuses for onsite energy generation are often structured around solar (rather than geothermal or wind) and are not yet that common among larger cities. Often, they are structured as part of planned unit development (PUD) regulations in smaller municipalities, given the flexible zoning and increased emphasis on community benefits that PUDs provide.
Notable development bonuses in this category include:

- Phoenix uses a sustainability bonus point system to incentivize onsite renewables and bicycle parking facilities or locker/shower amenities, among a number of other measures (open space, affordable housing, etc.). The system awards increases in height, density, or lot coverage in exchange for reaching a certain number of points/credits. For renewables, 1 point is awarded for each % of building energy usage provided through solar, wind, geothermal, or biomass; for bicycles, various points are awarded for the number of different amenities provided. 20 points minimum are needed for height or density increases of 5% and 10% respectively, and 70+ points qualify for 50% and 100% height and density bonuses, respectively.
    - **This was the only example of connected renewables/active transportation bonuses found during research. Other bonuses for bicycle facilities are likely connected to transportation policies and incentives, rather than energy provision.**
- Hartford, CT: Hartford's form-based code (see item 7, page 124) allows an extra 2 stories in height to downtown buildings if they provide onsite renewable energy that fulfills 25% of the energy needs of occupants, similar to Charlotte's requirement. Hartford was one of 14 initial municipalities that received a Gold Designation from the SolSmart program in recognition of their work to remove barriers from solar development in zoning.
- Tacoma, WA provides an extra 10 feet of height in its mixed-use districts for installing solar systems expected to provide at least 15% of annual energy use.
- Other smaller municipalities (for example: Lansing, MI; McCall, ID; San Carlos, CA) offer bonuses such as 10% increased FAR or other density measure in exchange for provision of solar energy in PUDs.
- It's worth noting that shorter buildings have an advantage for meeting the percent energy generation requirement, as taller buildings with small roofs will likely not have the roof area needed to meet their higher energy demand.
- It is also worth noting that the business case for buildings to install solar panels will vary based on the local utility's net-metering policy.

A more common incentive structure, many cities (e.g., Miami, Pittsburgh, Oakland, Kansas City) offer expediting permitting for solar projects. Use of C-PACE financing is also highly common to help stimulate private investment and would provide developers with the financial support needed to comply with solar ordinances.

Development bonuses for onsite renewables may still be an emerging technique.

However, **ordinances** requiring solar readiness and provision of electric vehicle charging stations are becoming more common.

- In 2017, Atlanta passed an ordinance requiring that 20 percent of the spaces in all new commercial and multifamily parking structures be EV-ready, and that all new residential development be equipped with the infrastructure needed to install EV charging stations.
- In Denver, the city's Green Buildings Ordinance is flexible. It requires new developments over 25,000 sq ft (or additions over 50,000 sq ft) to comply by choosing one of several actions, including providing onsite renewables, demonstrating energy cost savings beyond local code, or

achieving LEED Silver, Enterprise Green Communities, National Green Buildings Silver, or the equivalent. Additionally, the building code (see pg. 455) requires all new 1- and 2-family homes to be EV-ready.

- Also in 2017, San Francisco's city code began requiring that all new buildings – residential, commercial, and municipal – have sufficient infrastructure to simultaneously charge vehicles in 20% of parking spaces.
- Orlando is reportedly considering an EV-ready ordinance or zoning code change that also considers solar and battery storage, to encourage adoption of multiple technologies simultaneously.

ENERGY EFFICIENCY AND AFFORDABLE HOUSING

Housing trust funds are an important way of financing affordable housing and sustainability simultaneously. According to the Housing Trust Fund Project's 2016 Housing Trust Fund Survey report, of the hundreds of city-level housing trust funds (HTFs) in the US, only a smaller subset (roughly 20 of 173 surveyed, including Charlotte) responded that they use funds to support energy efficiency upgrades in existing affordable housing. Additionally, not all of these HTFs draw on density or development bonuses – for example, many are funded through dedicated city budget allocations or linkage/impact fees from developers, among a number of other sources.

Although this data is now several years old, the 19 other cities that may use HTFs to fund efficiency upgrades are:

Alexandria, VA
Ashland, OR
Bellingham, WA
Bend, OR
Boston, MA
Boulder, CO
Burlington VT
Cambridge, MA
Charlotte, VT
Charlottesville, VA
Knoxville, TN
Los Angeles, CA
Louisville, KY
Milwaukee, WI
New York City, NY
Philadelphia, PA
Santa Fe, NM
San Francisco, CA
St Charles, IL

Often, these cities do not have readily available information on the structure or success of their programs accessible through desktop research. We recommend that Charlotte contact the administrators of the HTFs in these cities for more detailed information (see spreadsheet for contact information). A few select examples are provided that may be useful to Charlotte:

Philadelphia's Housing Trust Fund, created in 2005, now benefits from a recently passed inclusionary zoning bonus program, which provides developers additional density or height in exchange for paying $20 to $30 per additional square footage into the Fund, with greater bonuses available in denser zones like Center City. Within 9 months of its passing, the program was slated to generate $3 million for the HTF. The city then uses a portion of those funds to support home renovations and improvements in low-income housing. According to its recent FY 2018-2019 report, that year the Fund completed 10,000 repairs to major home systems, like roofing, plumbing, heating, and electrical systems, that help maintain efficiency. Additionally, the Fund supported a pilot program with the local nonprofit Energy Coordinating Agency to retrofit homes in extremely degraded conditions with extensive energy efficiency measures, including cool roofs, that collectively are estimated to save each household 25-50% on energy costs per year (see the 2016 HTF Survey report above, pg. 71).

In Alexandria, VA, during development reviews, large projects can receive 30% of additional density or 25 feet of additional height in exchange for contributing to the city's HTF, at a rate of several dollars per square foot. The city's Fund, which is primarily supported by these contributions, has leveraged $33 million in private financing from its founding in the 1980s through 2016. Part of these funds go to partnerships

with local nonprofits that provide critical repairs and energy efficiency upgrades at no cost to low-income homeowners.

Other cities have alternate methods of securing private financing, though they rely on required fees rather than incentives. For example Denver's Green Buildings ordinance allows large projects to pay into the city's Green Buildings Fund, which can then be used for rooftop solar or community solar initiatives in low-income/affordable housing. Similarly, Cambridge, MA has had a longstanding inclusionary zoning ordinance that requires commercial developers to pay fees into the local Housing Trust to offset their impact on the city's affordable housing supply; funds are then used for energy efficient renovations and new construction.

For more information or questions on the research provided, please contact Augie Williams-Eynon at august.williams-eynon@uli.org.

Dev. Bonuses and Green Building

City	Incentive	Relevant Requirements	Link
Atlanta	Additional 30 feet of height and expedited permit	For buildings over 100,000 sf; use non-potable water for outdoor water uses; verify 10% reduction of energy use above city energy code; provide 10% more open space than required; and provide minimum of 3 EV charging stations	https://library.municode.com/ga/atlanta/codes/code_of_ordinances?nodeId=PTIIICOORANDECO_PT16ZO_CH18LSPBULESTSPPUINDI_S16-18L.020INDE
Austin	Additional density or height by request as part of site plan review	Achieve a 2-star or greater rating in Austin Energy's Green Buildings program; provide affordable housing onsite or pay into Affordable Housing Trust Fund	http://www.austintexas.gov/department/downtown-density-bonus-program
Bridgeport	LEED Silver or equivalent shall receive a development bonus of 0.5 FAR. LEED Gold or equivalent shall receive a development bonus of 0.625 FAR. LEED Platinum or equivalent shall receive a development bonus of 0.75 FAR.	Meet LEED Silver/Gold/Platinum or equivalent	https://www.bridgeportct.gov/filestorage/341650/341652/345965/343658/2020_Regulations.pdf
Hartford	Extra 2 stories for downtown buildings that provide onsite renewables	25% of energy on site	https://www.hartfordct.gov/files/assets/public/development-services/planning-zoning/pz-documents/zoning-regulations/zoning-regulations-06052020.pdf
Miami	Silver: For Buildings under 50,000 sf, 2.0% of the floor lot ratio (FLR) Gold: 4.0% of the floor lot ratio (FLR) Platinum: 13.0% of the floor lot ratio (FLR)	Meet LEED Silver/Gold/Platinum	https://programs.dsireusa.org/system/program/detail/5903
Minneapolis	Boost in FAR	Meet 35% above state energy code	https://library.municode.com/mn/minneapolis/codes/code_of_ordinances?nodeId=MICOOR_TIT20ZOCO_CH549DODI_ARTIIFLA
Nashville	Bonus height in Central Business District	LEED or equivalent	https://www.nashville.gov/Portals/0/SiteContent/Planning/docs/dtc/DTC_170928.pdf
Philadelphia	Bonus height, density in Central Delaware Overlay District	LEED Gold or higher	https://www.bdcnetwork.com/philadelphia-considers-more-incentives-green-building
Pittsburgh	Density bonuses of 20% in height and 20% in floor area to commercial projects that meet LEED efficiency standards.	Any LEED certification	https://library.municode.com/pa/pittsburgh/codes/code_of_ordinances?nodeId=PIZOCO_TITNINEZOCO_ARTVIDEST_CH915ENPEST_915.04SUDEBO
Portland	Additional proposed FAR and height during planned development review	Demonstrated EUI reduction and LEED, Green Globes, Living Building, Passive House, or several others	https://www.portland.gov/sites/default/files/2020-01/pd-bonus-energy-efficiency-admin-rule-12-14-2018-final.pdf
Arlington County	Bonus FAR per escalating certification	LEED	https://environment.arlingtonva.us/energy/green-building/green-building-bonus-density-program/

Local Housing Trust Contacts

State:	City/Town:	City	Administrator Name (First and	Housing Trust Fund Name	Department or Agency	WebSite URL	Email Address:	Phone Number:
VA	Alexandria	City	Helen McIlvaine	City of Alexandria, VA - HTF	Office of Housing		helen.mcilvaine@alexandriava.gov	703-746-4990
OR	Ashland	City	Linda Reid	Affordable Housing Trust Fund	City of Ashland Housing Program	http://www.ashland.or.us/	reidl@ashland.or.us	541-552-2043
WA	Bellingham	City	David Stalheim	Bellingham Home Fund	City of Bellingham	www.cob.org/homefund	dbstalheim@cob.org	360-778-8385
OR	Bend	City	Jim Long	Affordable Housing Fund	City of Bend	www.bendoregon.gov	jlong@bendoregon.gov	541-312-4915
MA	Boston	City	Christine O'Keefe	City of Boston Neighborhood Housing Trust		http://dnd.cityofboston.gov/portal/v1/contentRepository/Public/dnd%20pdfs/HousingDevelopment/NHT_Report_2014_150406_1230.pdf	christine.okeefe@boston.gov	617-635-0351
CO	Boulder	City	Kate Masingale	Community Housing Assistance Program and Affordable Housing Fund	Division of Housing, City of Boulder	https://bouldercolorado.gov/housing	masingalek@bouldercolorado.gov	303-441-3167
VT	Burlington	City	Todd	City of Burlington Hosuing Trust Fund	CEDO	https://www.burlingtonvt.gov/CEDO	trawlings@burlingtonvt.gov	802-652-4209
MA	Cambridge	City	Chris Cotter	Cambridge Affordable Housing Trust	City of Cambridge	www.cambridgema.gov/housing	ccotter@cambridgema.gov	617-349-4600
VT	Charlotte	City	Dean Bloch	Charlotte Housing Trust	Town of Charlotte	www.townofcharlotte.org	dean@townofcharlotte.com	(802) 425-3071 ext. 5
VA	Charlottesvill	City	Kathy McHugh	Charlottesville Affordable Housing Fund	City of Charlottesville, Neighborhood Development Services	http://www.charlottesville.org/Index.aspx?page=2887	mchughs@charlottesville.org	434-970-3315
TN	Knoxville	City	Anna Whitener	Affordable Housing Trust Fund	East Tennessee Foundation	www.easttennesseefoundation.org	awhitener@etf.org	865-524-1223
CA	Los Angeles,	City	Manuel Bernal [Magdalina Zakaryan]	Affordable Housing Trust Fund	Housing and Community Investment Dept.		manuel.bernal@lacity.org	213-675-0450
KY	Louisville	City	Rachel M Hurst	Louisville Metro Affordable Housing Trust Fund		www.louisvilleahtf.org	rhurst@louisvilleahtf.org	502-637-5372
WI	Milwaukee	City	Steven L. Mahan	City of Milwaukee Housing Trusrt Fund	Community Development Grants Administration	city.milwaukee.gov/CommunityDevelopment310.htm		414-286-3647
NY	New York	City	Eva Trimble	NYC Housing Trust Fund	NYC Department of Housing Preservation & Development		trimblee@hpd.nyc.gov	212-863-5153
PA	Philadelphia	City	Deborah McColloch	Philadelphia Housing Trust Fund	Office of Housing and Community Development	phila.gov/ohcd	deborah.mccolloch@phila.gov	215-686-9750
CA	San Francisc	City	Benjamin McCloskey	City and County of San Francisco Housing Trust Fund	Mayor's Office of Housing and Community Development	www.sfmohcd.org	benjamin.mccloskey@sfgov.org	415-701-5575
NM	Santa Fe	City	Alexandra Ladd	Santa Fe Affordable Housing Trust Fund	City of Santa Fe	www.santafenm.gov	agladd@santafenm.gov	505-955-6346
IL	St. Charles	City	Ellen Johnson	Housing Trust Fund	City of St. Charles	http://www.stcharlesil.gov/	ejohnson@stcharlesil.gov	630-762-6901