

# Memorandum



CITY OF DALLAS

DATE June 6, 2023

TO Honorable Chair Blackmon and Members of the Environment & Sustainability Committee

SUBJECT **Environmental Commission Recommendations on 2024 Bond Program Specifications**

This memorandum provides an update to the Environment & Sustainability (ENVS) Committee concerning specifications for the 2024 Bond Program following a vote during the May 10, 2023 Environmental Commission meeting to formally provide the below recommendations.

The Comprehensive Environmental and Climate Action Plan (CECAP) includes a global target towards achieving 100 percent net zero energy new construction by 2030. To stay on course to meet this target, ENVS Chair Blackmon requested staff to provide the City's Bond Program Planning Committees with performance-based technical specifications for inclusion into the 2024 Capital Bond Program. Staff worked with the Environmental Commission's Strategic Partnerships & Innovation Committee to convene panels of National and International experts in sustainable design and construction to provide an overview of best practices to support this effort and to provide specific recommendations for use on the 2024 Capital Bond Program. The recommendations herein stem from this important effort by the Environmental Commission's Strategic Partnerships & Innovation Committee.

Meetings were held with these experts and City Department leadership on March 3, 2023 for Buildings and on March 10, 2023 for Parks and Infrastructure. Direction was given to provide the City with recommendations that were **easy to explain, achievable, and aspirational**. Notes from these two meetings are included at the end of this memo. The five requirements from this effort are:

1. Achieve **certification** at the designated level for the appropriate project type as outlined below. These programs were developed to assess, measure, and track progress, as well as to guide project teams to more sustainable design and social impact of 'quality of life,' including collaboration and long-term economic impact and resilience.
  - **For Buildings**, implement Technical Specification language for buildings to require **Gold certification at the current version of [LEED™](#) for the appropriate type of building**. Dallas has also already set additional minimum performance criteria (*directed use*) for water (WE c3.1, 30% reduction) and energy efficiency (EA c13 points, 16% reduction). *This precedent was established in the 2012 bond and was again implemented in the 2017 Bond Program.* LEED version 4.1 is

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currently in use, with a pending update to be adopted soon. A draft of v.5 is planned for public comment in September 2023.

LEED (even at the Platinum level) sets forth overall performance expectations to be met, however the process is not prescriptive and does not require any specific technologies, products, or building systems. Ultimately, it is up to the full team (design, builder, owner, and operator) to propose, coordinate, and deliver a holistic design solution to meet the target outcomes. We suggest collaborating with Building Services or other facility personnel around selected design choices, particularly considering resulting operations and maintenance aspects.

- **For Infrastructure**, implement Technical Specification language to **certify performance under the [Envision](#) rating system(s) and achieve specific site-related credits**. Use of these systems can help teams focus on CECAP goals and guide goals on future projects. The Envision program was developed by the Consulting Engineers Council, American Public Works Association, and the America Society of Civil Engineers to apply to public works projects to construct more sustainable infrastructure, as LEED does for habitable buildings.
  - **For Parks, Implement [SITES certification](#) for project sites with or without buildings**. SITES is a framework for designing, developing, and managing/maintaining sustainable and resilience landscapes and outdoor spaces, in support of nature positive design. It is complementary and synergistic with the City's LEED Gold requirement (LEED projects have the ability to earn up to 65 points in SITES using their LEED credits). This framework generally integrates a diverse project design team to help create regenerative systems to foster resilience (e.g., flood control, urban heat island, community space), and protecting and ensuring access to future resources while mitigating climate change (clean air/water, open space, etc.) and enhancing human well-being and strengthening community.
2. Implement Technical Specification language that results in a significant reduction in Energy Use Intensity for the specific building topology, based on National EPA Energy Star or comparable national Benchmarking. **Specify top 20% energy star rating for all appliances and equipment.** *This is aligned with industry best practice and the CECAP goal.*
  3. **Register the project with DOE's [Green Button](#)**, a free tool that supports benchmarking and transparency; performance data is a powerful tool.
  4. **Specify that Environmental Product Declaration (EPD) submittals be provided at the time of bid** to signal the importance of embodied carbon and enable informed decision making, for the largest embodied carbon materials: **concrete, asphalt, glass, and steel**. This is generally consistent with the City's Sustainable Procurement Policy.
  5. Each project team will also select one or more of the following **"stretch goals"** as a minimum performance requirement:

#### **FOR NEW AND EXISTING BUILDING CONSTRUCTION**

- **Consider pilot project opportunities for [LEED Zero Carbon](#).**
- **Consider the use of [LEED Building Operations and Maintenance](#) (O+M) for major building upgrades.**

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- **Implement Architecture 2030 framework** for promoting advanced efficiency and electrification, using [zero-code.org/resources](https://zero-code.org/resources), or similar resources;
- **Meet an established efficiency threshold** (Energy Star score or EUI threshold through a building performance standard). Continue to meet reduced electrical demand with **100% renewable energy** (IECC appendix CC)- (*Dallas purchases 100% renewable wind-based energy*).
- **Design smart, efficient buildings with distributed renewable energy that are integrated in the grid** and that can play a critical role in electricity generation, peak load management and energy storage.
- **Consider piloting [International Living Future Institute \(ILFI\)](#) design principles** that focus on regenerative buildings, building materials/ products, and just and socially run organizations with onsite energy, water treatment, healthy and transparent material selection, and zero waste.

#### **FOR SITES, INFRASTRUCTURE AND PARK PROJECTS**

- Certify performance through Envision or Sites at the higher Gold or Platinum level.
- Rethink surfaces using the [Smart Surfaces Tool](#). Limit hard, impervious dark surfaces additions/ replacements; instead, **specify more reflective surfaces that are porous to reduce heat island effect and flooding**. Combining green or blue roofs and rooftop photovoltaics improves the PV efficiency because of the lower ambient temperature. **Provide economic analysis to demonstrate added value**.
- If you must construct parking, make the structure more sustainable and higher performing by **incorporating the principles of [Parksmart](#)**. Both Love Field and Parkland hospital currently have *Parksmart* certified structures. This program advocates for carbon emission reductions by specifying regional materials, integrated buildings systems, commissioning, etc. Recycling, sustainable purchasing, proactive maintenance, and ongoing energy consumption reductions also reduce GHG emissions. The program also incentivizes alternative fuel vehicles and discourages unnecessary idling. The work that the City's Planning + Urban Design (PUD) department is doing to implement greening factors as a part of Parking Ordinance reform is generally consistent with these principles.
- Implement the [Climate Positive Design](#) challenge to document as-designed performance with **tools such as the [Pathfinder](#) tool** for landscape design and related **targets in performance specifications**.

Sustainable design parameters related to permeable paving and green infrastructure have not been included into the final Council-adopted sustainable design criteria. Thus, adoption of this criteria may require updates to the City's related codes and design criteria. PUD is currently working on this as a part of their efforts to update parking criteria, therefore it may be possible to develop and adopt these updates through their process.

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We look forward to our continued work with Environment & Sustainability Committee during implementation. Should you have questions or need additional information, please call Ms. Susan Alvarez at (214) 671-9505.



**Kathryn Bazan**  
Chair, City of Dallas Environmental Commission

c: T.C. Broadnax, City Manager  
Tammy Palomino, Interim City Attorney  
Mark Swann, City Auditor  
Biliera Johnson, City Secretary  
Preston Robinson, Administrative Judge  
Kimberly Bizer Tolbert, Deputy City Manager  
Jon Fortune, Deputy City Manager

Majed A. Al-Ghafry, Assistant City Manager  
M. Elizabeth (Liz) Cedillo-Pereira, Assistant City Manager  
Dr. Robert Perez, Assistant City Manager  
Carl Simpson, Assistant City Manager  
Jack Ireland, Chief Financial Officer  
Genesis D. Gavino, Chief of Staff to the City Manager  
Directors and Assistant Directors

# Notes



CITY OF DALLAS

MTG DATE 3 March 2023

Julie Hiromoto, Colleen Murray, Barry Lachman, Michael Martin (EVC SPI)  
Susan Alvarez, Carlos Evans (OEQS)  
Jenny Nicewander (Office of Bond & Construction Management)  
Ali Hatefi, Harvey Speak (Public Works)  
Arturo del Castillo (Planning and Urban Design)  
Thor Erickson (Housing and Neighborhood Revitalization)  
Heather Lepeska (Office of Economic Development)  
Adenia Clark (Office of Procurement Services)

PRESENT Srinivas Vemuri, John Johnson (Building Services)  
Shahala Layendecker (Development Services)  
Stefan Kesler (Parks and Recreation)  
Erin McDade (Architecture 2030)  
Stacy Smedley and Don Davies (Building Transparency, EC3 calculator)  
Jennifer Goupil and Michael Gryniuk (Structural Engineering Institute, SE 2050)  
Lindsay Baker (International Living Future Institute)  
Jennifer Gundy and Wes Sullens (US Green Building Council, LEED)  
Vivian Loftness (National Academy of Sciences and Carnegie Mellon University)

SUBJECT **2024 Bond Performance Specification Recommendations- BUILDINGS**

A group of international and national experts were convened to make recommendations for Bond performance specifications in support of CECAP goals that are easy to explain, achievable and aspirational. *Key recommendations and next steps noted in **bold**.* A recording of the zoom meeting can be viewed [here](#).

1. Architecture 2030: [slides](#) Contact: [Erin McDade](#) (Senior Program Director)
  - a. For New Construction and Existing Buildings the same three cumulative steps are effective: [zero-code.org/resources](#)
    - i. **Optimize Efficiency**- meet latest model energy code (IECC 2021) or stretch code- *adoption in progress*.
      1. Existing building operations- meet an established efficiency threshold (Energy Star score or EUI threshold through a building performance standard).
    - ii. **Meet reduced electrical demand with 100% renewable energy** (IECC appendix CC)- *Dallas purchases 100% renewable wind-based energy.*
    - iii. **Decarbonize thermal comfort- Set equipment efficiency thresholds.**
  - b. Resources-
    - i. [ASHRAE Building Performance Standards](#)- A Technical Resources Guide
    - ii. [Zero Code 2.0](#)- Architecture 2030 framework for promoting advanced efficiency and electrification, while achieving 100% renewable energy.
  - c. *J.Johnson*- Any specific recommendations of equipment or building system technologies should be vetted and viable in the region (O&M concerns). **Review geothermal heat pump technology with regional MEP engineers. Share [BEEx ground source heat pump resources](#).**

2. US Green Building Council (USGBC): [slides](#) Contact: [Wes Sullens](#) (Director, LEED) and [Jennifer Gunby](#) (Sr. Manager, State & Local Advocacy)
  - a. LEED continues to evolve and today's standard is more rigorous than the version initially adopted by Dallas. **Recommend language to reference "Gold certification at the current version of LEED for the appropriate typology."** The current version is 4.1, with an update pending soon. A draft of v.5 is planned for public comment in September 2023. Dallas has also set additional minimum performance criteria (*directed use*) for the certain credits like water and energy efficiency.
  - b. **Consider pilot project opportunities for [LEED Zero Carbon](#).**
    - i. *S.Kesler*- Vickery Meadows Library project received some sort of carbon neutral third- party certification. We advocate for design consultants who have this experience. We also have a program for ongoing energy upgrades of existing facilities.
3. National Academy of Sciences (NAS)- 3.5 years on the committee. First report in 2021, second report in draft. Trigger for federal funding for buildings and infrastructure. [slides](#)
  - a. Electrical power is not an accurate end use sector. This should be replaced by buildings to accurately quantify scope 1 demand and associated GHG emissions.
  - b. Opportunities for impact, in order of influence:
    - i. Buildings are the most significant opportunity for influence and also the sloppiest- huge differential between the highest and worst performing buildings in the same use category, of the same size, etc. **Benchmarking programs to report energy usage strongly recommended.** We cannot monitor what we don't measure. California saw growth in population and GDP while simultaneously the GHG held approximately flat. Transparent, public access to the data is important.
    - ii. Efficiency first- once we drop our energy consumption, the demand will lower to a threshold which can be addressed with **renewable energy**.
    - iii. **Target high embodied carbon materials**, like concrete and steel, with minimum performance criteria. Explore alternatives to fossil fuel-based insulation materials.
    - iv. **Specify top 20% energy star rating for all appliances and equipment.**
    - v. **Specify high performance heating systems** which have a higher operational carbon footprint in TX than cooling systems.
    - vi. **Decarbonize refrigerants and ban HFCs** and target other pollutants that cause global warming.
    - vii. **Phase out inefficient electric resistant heating and electric resistant cooktops.** Specify induction cooktops instead.
    - viii. **Consider district combined heating, cooling and power (CHP).** Many examples of energy transfer of waste heat to model. Buildings should also be considered as part of the energy storage and transfer solution, not just the demand.
    - ix. **Leverage federal funding and incentives for energy retrofits**, especially for public housing.
    - x. **Smart home partnerships give utilities an opportunity to manage usage when in crisis-mode with smart thermostats.**



- xi. **Open the windows.** Consider passive conditioning and natural cooling in temperate seasons. Go outside- walk.
  - xii. Investing in efficient and high performing building is more cost effective than carbon capture and sequestration technologies.
4. International Living Future Institute (ILFI)- three areas of focus: *buildings*, building *materials/ products*, just and socially run *organizations*. [slides](#)
- a. Living Building Challenge (LBC) is so named because it is a stretch goal with currently only 80 certified projects globally. This aspirational program requires onsite energy, water treatment, healthy and transparent material selection- a building designed to inspire and teach.
  - b. Zero carbon certification addresses both operational and embodied carbon (construction impact). Requires reduction of onsite energy consumption (EUI target based on building type), elimination of onsite combustion, and the onsite production or offsetting of any energy with installed or procured renewable energy. Plus, 10% reduction of embodied carbon in primary materials, disclosure of carbon footprint of all materials, with an offset to address the impact of construction.
  - c. [Kaiser Santa Rosa](#) zero energy certified example. This is also an investment in resilience.
  - d. ILFI is ready and willing to work with the City of Dallas to craft policy aligned with LBC principles. Contact: [Lindsay Baker](#) (CEO)
5. Building Transparency/ Embodied Carbon in Construction Calculator (EC3) tool. [slides](#)
- a. Building materials and construction are responsible for 11% of global GHG emissions. This is an impactful opportunity for disclosure, transparency, informed decision making and procurement strategies.
  - b. The A1-A3 (production) category of concrete and steel embodied carbon significantly outweigh emissions associated with the other categories. **Specify Environmental Product Declarations (EPDs) submittals** at the time of bid to signal the importance of embodied carbon and enable informed decision making.
    - i. Proposed Washington State legislation requires projects over 100,000 sf to submit product quantities and EPDs, with additional transparency requirements for material health and fair labor practices.
    - ii. Implemented California state legislation set 7 global warming potential (GWP) limits for 4 materials (structural steel, concrete reinforcing steel, flat glass and mineral wool board insulation).
    - iii. Kings Country *requests* concrete EPDs by 2022, *requires* them by 2023 and establishes *maximum GWP* by 2024, then expanding to other materials.
    - iv. Marin County requires EPDs or a performance compliance path by assessing concrete mix cement quantity and embodied carbon limits using the EC3 tool.
    - v. City of Portland established maximum embodied carbon thresholds for concrete mixes used on City construction projects. Requires EPDs for ready mix or performance path noted above.
    - vi. Federal government enacts low embodied carbon standards for GSA projects. EPDs are submitted for each concrete mix batch design with performance type and volume.

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- vii. EPA published policy guidelines to require EPDs for concrete, glass, asphalt, steel, and assemblies comprised of at least 80% high impact materials.
- c. **Require project teams to submit project data (material quantities and EPDs for installed products) for review and inclusion in benchmarking databases.** Baselines and reductions can be optimized/ lowered over time as more data is available and lower carbon options come to market.
  - i. In Washington state, where EC3 and EPDs have been used at time of specification and procurement (since 2019), 15% reductions are documented in 5000 psi ready mix concrete in only three years.
  - ii. Reductions of 30% or more proven in markets where EPD data exists and can spur competition: As more Manufacturers publish EPDs, more Owners and Design Teams require them, and Contractors assess bids on cost and carbon. This spurs competition on both cost AND carbon emissions, and results in reductions in carbon emissions across the supply chain.
- d. The EC3 specification and procurement tool is free, open access, transparent, easy to use, industry led, supply chain focused. Today, it includes 258 non-concrete product-specific and 852 ready-mix specific concrete EPDs from manufacturing facilities in TX.
  - i. *Dallas presently has a sustainable procurement policy that is consistent with the International Sustainable Procurement Organization standards that can be used to support these goals going forward.*
- e. [www.BuildingTransparency.org](http://www.BuildingTransparency.org) Contact: [Stacy Smedley](#) (Executive Director)

*Prepared by Julie Hiromoto (Environmental Commission, District 15. Chair, Strategic Partnership & Innovation subcommittee) and Susan Alvarez (Assistant Director, OEQS)*

Erin Diehl, Board Coordinator, OEQS

Alan Hoffmann, EVC SPI

CC

Edwin Philip, Lori Levy, Rosa Fleming, Efrain Trejo, Mary Jo Giudice, Matthew Penk, Andres Espinoza, Albin Kneeggs, Meenal Chauk, Angela Akins, John Johnson, Donzell Gpison, Lim Leong, Harvey Spear, Haytham Hassan, Terry Johnson, Anita Zusman Eddy (City of Dallas)

Presentation slides as linked above, plus additional relevant resources:

History of Dallas Green Building precedent policies and ordinances- [Bond Briefing memo](#)

ULI and Rocky Mountain Institute's [Guide: Best Practices for Achieving Zero Over Time for Building Portfolios](#), 2018.

ATTACH  
MENTS

ILIFI Affordable Housing framework and resources: <https://living-future.org/affordable-housing/>

Building Energy Exchange (BEE)- [Heat Pump Planning Resources](#) (air source, ground source)



# Notes



CITY OF DALLAS

MTG DATE 10 March 2023

Julie Hiromoto, Phillip Hiatt Haigh, Kathryn Bazan, Alan Hoffmann (EVC SPI)  
Susan Alvarez, Carlos Evans (OEQS)  
Jenny Nicewander (Office of Bond & Construction Management)  
Alireza Hatefi, Harvey Spear (Public Works)  
Kate Bower, Kierra Whatley, (Transportation)  
Lisa Rainey, Christina da Silva (Office of Equity & Inclusion)  
Matt Penk (Dallas Water Utilities)  
Lori Levy, Don Raines, Arturo del Castillo (Planning and Urban Design)  
Jacob McCarroll, Efrain Trejo, (Public Works)  
Rosa Fleming, (Convention Center and Special Events)  
Meenal Chalk, Albin Kneegs, (Development Services)

PRESENT Jesse Saldana, (Office of Small Business Inclusion)  
Tahnesha West, Thor Erickson (Housing and Neighborhood Revitalization)  
Adenia Clark (Office of Procurement Services)  
Srinivas Vemuri, John Johnson (Building Services)  
Christina Noteware-Turner, Leong Lim, Stefan Kesler (Parks and Recreation)  
Vince Lewis (Aviation)  
Anita Zusman Eddy (Mayor's Office)  
Anthony Kane, Kristi Wamstad (Institute for Sustainable Infrastructure, *Envision*)  
Vivian Loftness (National Academy of Sciences and Carnegie Mellon University)  
Paul Wessel, Danielle Pieranuzi (USGBC/ GBCI, *Parksmart* and *Sites*)  
Pamela Conrad (Climate Positive Design, *Pathfinder*)  
Greg Kats, Iona Isachsen (Smart Surfaces Coalition)

SUBJECT **2024 Bond Performance Specification Recommendations-PARKS/ INFRASTRUCTURE**

A group of international and national experts were convened to make recommendations for Bond performance specifications in support of CECAP goals that are easy to explain, achievable and aspirational. *Key recommendations and next steps noted in **bold**. A recording of the zoom meeting can be viewed [here](#).*

1. [Institute for Sustainable Infrastructure](#): [slides](#). Contact: [Anthony Kane](#) (President & CEO)
  - a. Founded in 2010 collaboratively by the American Public Works Association, American Council of Engineering Companies and American Society of Civil Engineers (ASCE). [Envision](#) applies to infrastructure, as LEED does for habitable buildings. These programs do not compete and were developed with the same goals- to assess, measure and track progress, as well as to guide project teams to more sustainable design and social impact of 'quality of life,' including collaboration and long-term economic impact and resilience. This guidance supports CECAP well, and is applicable to all infrastructure projects, including water treatment, power generation, airports, parks, transportation, etc.
  - b. Several municipalities have adopted [resolutions and ordinances](#) referencing Envision. The most relevant examples include the [Miami-Dade Sustainable Building Program](#) and the [St. Petersburg ordinance](#). [Draft contract language](#) for owners was also shared

- for RFPs and procurement. California incentivizes Envision certification with expedited permitting. Port Authority of NY and NJ abandoned their own custom sustainable design guidelines for infrastructure for Envision, which comes with training, a network of professionals, and shared industry metrics/ baselines.
- c. **Specifying the verification of projects to an Envision award level or achievement of specific credits will help teams focus on CECAP goals and guide goals on future project.** The City could also adopt a similar strategy with LEED + delegated use and **pick one or two very important credits and establish a minimum performance threshold.**
  - d. Infrastructure can be restorative: environmentally degraded sites, economic benefits in a de-invested community or socially, as in restoring a historic site of significant cultural meaning.
  - e. Over 140 verified projects (\$135B invested in infrastructure). Over 6,500 accredited professionals, including TX with several on City staff. *[post meeting note: [The Integrated Pipeline project by the Tarrant Regional Water District and Dallas Water Utilities was one of the first large projects to be Envision platinum certified.](#)]*
  - f. Envision does carry additional administrative and professional costs for verification and design thinking, which are valuable for positive change and transparently tracking our progress as a project management, delivery and learning tool. This is time and money well spent, especially in consideration of longer-term operations and maintenance costs impacted by the design for the lifetime of the investment. Incorporating Envision goals early and thinking creatively about CECAP goals will not add time or life-cycle cost to the project.
2. [National Academy of Sciences \(NAS\)](#)- Vivian Loftness has served for over 2 years on the committee focused on accelerating decarbonization of our economy by 2050 and what we must do by 2030. [slides](#)
- a. The plan includes technology goals like (carbon-free) electrification, energy efficiency and efficiency, innovation and critical infrastructure.
  - b. At the community level, identify action, incentives, and mandates for the NZ built environment: live-work-walk transit-oriented development (TOD) communities that preserve connected green spaces- vital for the integrity of our natural systems; smart surfaces; and district energy.
    - i. Cities, suburbs and even rural areas are finding **value in more densification, supported by transit that establishes town center and walkable community.** UC Berkeley saw a carbon reduction of 75% per household as a result of combining walkability, building efficiency and local purchasing, which achieves a higher quality of life and resilience.
    - ii. Greg Kats will speak more about smart surfaces. Limit hard, impervious dark surfaces additions/ replacements, instead **specify more reflective surfaces that are porous to reduce heat island effect and flooding.**
      1. Rethinking surfaces can quality of life. Combining green or blue roofs and rooftop photovoltaics improves the PV efficiency because of the lower ambient temperature.

2. Every time you punch a hole in the sidewalk (for EV charging) punch a bunch of holes for infiltration and stormwater management.
      3. See slides for specific strategies for roofs, sidewalks and surface parking.
    - iii. **Community energy** (district energy or geothermal), through heat exchange with the earth's thermal mass and consistent temperature to provide low-grade heating and cooling. Or manage/ distribute energy and 'waste' heat from power stations or data center, which is cost effective and easy to install insulated piping a few feet below grade, for heating and hot water demand.
    - iv. **Smart, efficient buildings with distributed renewable energy that are integrated in the grid** can play a critical role in electricity generation, peak load management and energy storage.
      1. Benchmarking and transparency use and performance data is a powerful tool. **Encourage the use of [Green Button](#)**, a DOE tool. It's free. Data gives you power to understand how much inefficiency exists and where the impactful opportunities lie.
      2. **Managing peak load** can address the reliability challenge of brownouts and blackouts. Buildings and distributed PV (or wind) are key to Net Zero. EV batteries can also flatten peak loads. **Utilities should allow for bi-directional charging.** Grid-integrated efficient buildings (GEB) address all four energy infrastructure challenges: excessive demand, declining reliability, peak loads, asynchronous renewable delivery.
  3. [US Green Building Council \(USGBC\)](#) and [Green Business Certification Inc](#), Paul Wessel (Director Market Development, USGBC):
    - a. [Parksmart](#) certification defines, measures and recognizes high performing, sustainable garages (both new construction and existing facilities). [slides](#) Contact: [parksmart@gbci.org](mailto:parksmart@gbci.org)
      - i. **If you must construct parking, make the structure more sustainable and higher performing by incorporating the principles of Parksmart.** Both Love Field and Parkland hospital have *Parksmart* certified structures.
      - ii. Goal- enhanced mobility for people, using less resources and creating healthier communities.
      - iii. Easy to adopt as a policy and easy to use. Design and construction- **Carbon emission reductions are impacted by the program, specification of regional materials, integrated buildings systems, commissioning, etc.** Operations- **Recycling, sustainable purchasing, proactive maintenance, and ongoing energy consumption reductions also reduce GHG emissions. The program also incentivizes alternative fuel vehicles and discourages unnecessary idling.**
      - iv. **Work that the City's Planning + Urban Design group is doing to implement greening factors as a part of Parking Ordinance reform is generally consistent with these principles.**
    - b. The SITES [certification](#) is for project sites with or without buildings, for any use type. [Slides](#) Contact: [Danielle Pieranunzi](mailto:Danielle.Pieranunzi) (SITES Director, GBCI) [sites@gbci.org](mailto:sites@gbci.org)

- i. Framework for designing, developing and managing/ maintaining sustainable and resilience landscapes and outdoor spaces, in support of nature positive design. Complementary and synergistic w/ City's LEED Gold requirement (LEED project have the ability to earn up to 65 points in SITES using their LEED credits)
  - ii. Landscapes are beneficial infrastructure that can offer about 37% of the mitigation to limit global temperature rise by 2°C. Nature sequesters carbon and sustainable sites do that really well, in addition to providing other ecosystems services: cleaning air and water, improving our own health and wellbeing (through recreation and beautification), restoring ecosystems.
  - iii. Goals- 1) Transform the market through design, development and maintenance practices (e.g., Framework for integrated process with a diverse team), 2) Create regenerative systems that foster resilience (e.g., flood control, urban heat island, community space), 3) Protect and ensure access to future resources and mitigate climate change (clean air/ water, open space, etc) and 4) Enhance human well-being and strengthen community
  - iv. Over 300 participating projects in 41 states and 19 countries. TX has the most projects with Austin leading with more projects than other cities in the world. The Atlanta Beltline adopted this certification standard for the 25-year project connecting a 22-mile loop around the city. . The federal General Services Administration (GSA) also adopted SITES – uses as a lens and yardstick- a sustainability framework to focus their decision-making and quantitatively and qualitatively measure success. SITES offers a community of professionals and partners with education and training.
  - v. **Could Parks administratively adopt SITES, like Zaida Basora adopted LEED in 2003?**
4. [Climate Positive Design. slides](#) Contact: [Pamela Conrad](#) (Founder of Climate Positive Design and current Loeb Fellow at Harvard). Spent the last 10 years focused on helping cities become more resilient in the face of climate change.
- a. 75% of global GHG come from the urban built environment. Roughly 40% come from buildings- the other half comes from outside (places designed by landscape architects, planners and civil engineers). This includes embodied carbon of materials and the ongoing operations (chemical fertilizers and gas-powered equipment). We can drawdown carbon with trees, plants, and soils in the landscape. Pathfinder tool helps you balance your design and understand how many years it will take to get to zero.
  - b. **Informed design and maintenance decisions has a big impact. Specify use of the [Pathfinder](#) tool** akin to *EC3*, but for landscape design and calculates the positive effect of plantings and emissions reductions for exterior materials and operations. **Subscribe to the Climate Positive Design Challenge.**
    - i. Watch the [zoom video](#) for a quick overview and tutorial of the tool's graphic user interface.
    - ii. Collecting this information and monitoring our progress allows for a feedback loop that will allow us to learn and evolve over time. In the first three years, over 5,000 projects have been logged. 90% of the world's countries are

included and estimate planting 1.7M trees. The database includes 12 projects in TX, 7 of which are in Dallas.

- iii. Most of the emissions are coming from materials. In the past year, projects have reduced their emissions by 12%- great progress.
  - iv. Partnership with policymakers needed to leverage strategies and ensure goals are met. The knowledge from this tool and database of projects helped develop carbon credits for *Sites* and *LEED*. Cities like Atlanta and Toronto are including the Climate Positive Design Challenge and the *Pathfinder* tool in their RFPs and Green Building Standards. **Include targets in performance specifications.** Eager to work with Dallas to develop a specific recommendation for Dallas.
  - v. *Pathfinder* calculator is complementary to the certifications you heard about today and synergistic with the *EC3* tool we heard about last week. It helps with the calculations. These actions have positive benefits to communities-addressing heat, flood, pollution, water scarcity, and making cities wonderful places to live and connect with other people.
  - vi. **Typically, anticipate a 5-year time frame to offset project-related carbon for parks, campuses and residential landscapes and 20-years for streetscapes and plazas.** There is good guidance that can be found as a part of the American Society of Landscape Architects' (ASLA) [Climate Action Field Guide](#).
5. [Smart Surfaces Coalition](#): [slides](#) Contact: Greg Kats and [Iona Isachsen](#) (Analyst)
- a. Cities and airports are generally 5-7 degrees hotter because of dark and impervious surfaces. Lower income and minority areas are typically an additional 10-15 degrees hotter. Specific to Dallas, the measure difference on a summer day between the wealthiest and poorest neighborhoods was over 20 degrees. When airports are over 100°F, it gets difficult for planes to take off, and the workers that service those planes (largely minorities) can be impacted with reduced productivity and errors because of the extreme heat. Smart Surfaces is working with SFO on these issues.
  - b. This 501(c)3 is made up of policy, academic and industry organizations (including Trust for Public Land) with a shared purpose of transforming urban surfaces to make them more livable: address urban heat island, environmental justice, climate risk, flooding, mold, etc. To date, we've dealt with urban surfaces in a fragmented way. This is a aggregated and consolidate effort for reflective, pervious, absorptive, and generative surfaces.
  - c. Baltimore struggles with heat. Over the last year and a half, built a dynamic cost benefit analysis engine for the entire city. Run test scenarios with different reflective, green and porous surfaces for maximum impact. Solutions cooled downtown by 5°F, which has an impact on tourism and economic development. They are in the process of adopting these measures through a bill for low slope roofs on public and commercial buildings, as well as implementing other strategies. 10% cost benefit ratio = net present value of \$15B. The work bridged the multiple city departments and jurisdictions and demonstrated substantial increase in employment, impacts to complex public health related costs,



- d. Risk and insurance aspects relevant to this discussion as well as the City credit rating. [LINKS Smart surface investments](#) reduce risk systematically and are becoming recognized by [Standards and Poor](#), [Moody's](#) and other related credit ratings.
  - e. Developing funding for a program to study 10 metropolitan cities to treat all surfaces as an integrated system for managing sun and rain. Some of this funding will be specifically earmarked for key downtown, low-income areas and African American church outreach and engagement. **Coordinate a follow up call to review the cost benefit analysis engine.** Already working in India with funding from the MacArthur Foundation.
6. CE- What is the biggest hurdle in getting certifications like these adopted by cities? How might you troubleshoot concerns by elected officials, such as cost and time or the environmental and public health impacts these projects will bring? How can city administrators get a better understanding of the data, mapping tools, resources etc?
- a. PC- This process is a great start. Nothing is perfect. Just get started and refine along the way. At least leverage the free tools and resources. The paid certifications have value too.
  - b. GK- The most effective strategies solve the problems the city has already identified. What are the commitments already made- trees, environmental justice, climate, projecting jobs, bringing people back downtown, improve the city's credit rating? All have measurable outcomes. All the tools we heard about today address some of these big challenges.
  - c. PW- All of our programs can argue justifiably that we save money, rather than cost money in the long term. Maintenance is a huge issue for publicly owned infrastructure. All of our programs ensure that the investment will last longer, with lower maintenance costs.
  - d. PW- If worried about adopting 'the right' government regulations, these examples illustrate where industry professionals have figured out the best approaches. You can rely on their efforts instead of spending tens of thousands of dollars to hire consultants to invent your own approach. Instead, use the money to invest in the best infrastructure possible.
  - e. AK- With many of these tools, including [Envision](#), stakeholder engagement and really delivering for the community is foundational.
  - f. GK- Often doing the right thing is presented as 'less bad.' These frameworks help envision a better/ positive future. As an example, we are working with the World Cement Association on a concrete that sequesters carbon, so that airport runways can contribute to net negative operations. That's a compelling vision, more compelling than a story of avoiding negatives.

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Presentation slides as linked above, plus additional relevant resources:

ATTACHMENTS History of Dallas Green Building precedent policies and ordinances- [Bond Briefing memo](#)  
[ENVISION](#) & [Smart Surface LINKS](#) as noted in the body of these notes  
[Biositu's \(Adele Houghton\) recommendations for climate change mitigation, resilience and protecting the most vulnerable groups from negative health outcomes through Health Situation Analysis \(HSA\)](#)