



TECHNICAL ASSISTANCE PANEL REPORT

Florida Avenue Market Area

WASHINGTON, DC

SPONSORED BY:

District of Columbia Department of Energy and Environment

District of Columbia Office of Planning

Metropolitan Washington Council of Governments

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The objective of ULI Washington's Technical Assistance Panel (TAP) program is to provide expert, multidisciplinary, and objective advice on land use and real estate issues facing public agencies and nonprofit organizations in the Metropolitan Washington Region. Drawing from its extensive membership base, ULI Washington conducts one and one-half day panels offering objective and responsible advice to local decision-makers on a wide variety of land use and real estate issues, ranging from site-specific projects to public policy questions. The TAP program is intentionally flexible to provide a customized approach to specific land use and real estate issues. Learn more at <http://washington.uli.org/TAPs>.

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Table of Contents

ULI WASHINGTON PANEL & PROJECT STAFF	2
ACKNOWLEDGMENTS	3
EXECUTIVE SUMMARY	4
OVERVIEW, CONTEXT, AND SCOPE	5
KEY CULTURAL INSTITUTIONS	8
DISTRICT ENERGY	10
CULTURAL SUSTAINABILITY	19
OPEN SPACE	23
CONCLUSION	32
APPENDIX A	33
PANELISTS	36

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Executive Summary

On September 7-8, 2016, a panel of ULI Washington members set out to address several challenges in the Florida Avenue Market area of Washington, DC. Florida Avenue Market is located approximately ½ mile from the NoMa-Gallaudet Metro Station and adjacent to the Trinidad neighborhood in the District of Columbia.

This Technical Assistance Panel, or TAP, was jointly sponsored by the District of Columbia Department of Energy and Environment, the District of Columbia Office of Planning, and the Metropolitan Washington Council of Governments (MWCOG). The TAP's goal was to identify and elevate awareness of best practices on three topical areas to developers and other stakeholders who are influencing the rapid change in the study area. The three topical areas included: district energy and utility infrastructure; cultural sustainability; and open space.

Over the course of the TAP, Panelists aimed to address the following:

- How to create a neighborhood identity that integrates historical context?
- How to develop the requisite infrastructure?
- How to create an integrated, open space design and landscape?
- How to maximize the study area's economic potential?

In total, panelists recommended over 25 strategies for addressing challenges associated with district energy and utility infrastructure; cultural sustainability; and open space. These strategies are discussed throughout the report, and summarized within each relevant thematic section.

Overview, Context, and Scope

The Florida Avenue Market is located approximately ½ mile from the NoMa-Gallaudet Metro Station and adjacent to the Trinidad neighborhood in Washington, DC. The market is within the Metropolitan Washington Council of Government's (MWCOC) New York Avenue Regional Activity Center. According to MWCOC, Activity Centers are described as “the places that will accommodate much of the region’s growth in the coming decades” and are “critical to ensuring the region’s future competitiveness and success.”¹ Historically, the Florida Avenue Market area has been DC’s largest wholesale distribution market, has served as the home of the DC Farmer’s Market. This study area also contains historically significant buildings and multi-generational mom-and-pop businesses.

In 2009, the District of Columbia adopted the Florida Avenue Market Study Small Area Plan.² The plan provides a redevelopment framework that seeks to balance maintaining the area’s old world charm, grittiness, and character while repositioning the approximately 45-acre site to respond to current and future development opportunities and objectives.

Now, the market is experiencing rapid redevelopment that will significantly increase density from what presently exists. Multiple developers have either expressed interest in the area, or are already constructing new projects. Current development proposals in the pipeline are expected to deliver between 5,000 and 7,000 new residential units; 1,000 hotel rooms; and up to one million square feet of restaurant, retail, or office space. The magnitude of development creates a unique challenge for the city: aging infrastructure requires replacement; transportation networks need to be carefully considered; existing tenants face possible displacement; and new residential uses in an industrial area pose potential conflicts. However, if considered holistically, such development presents opportunities to envision and create a sustainable and environmentally responsible new neighborhood and dynamic addition to the District’s urban fabric.

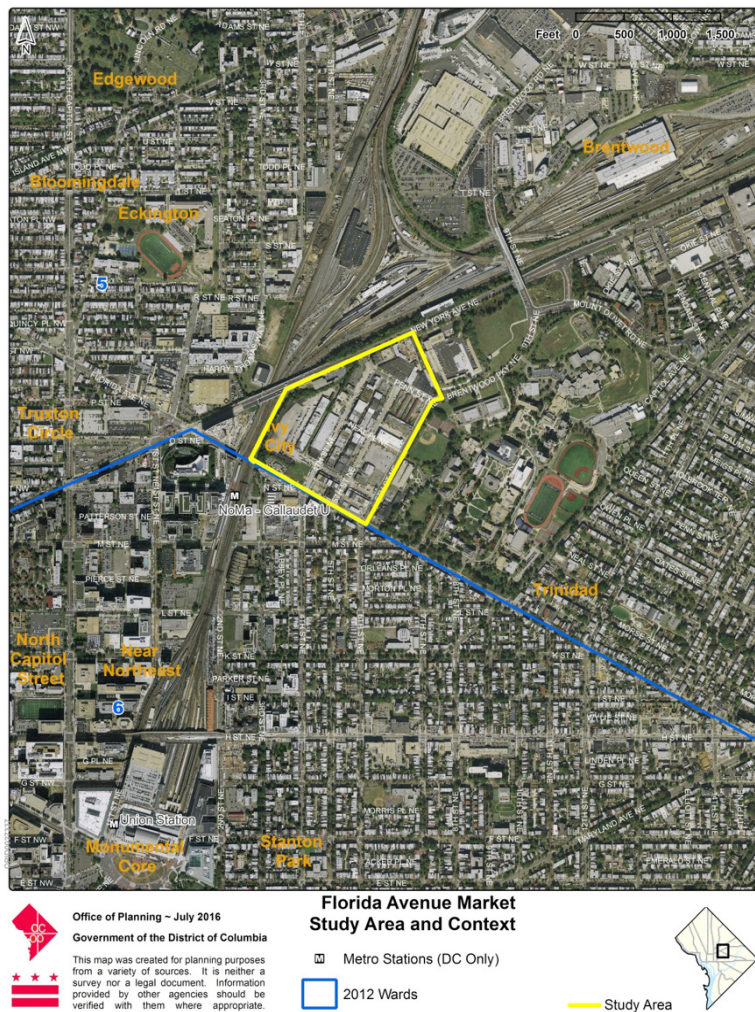
The District’s Sustainable DC Plan envisions the city as the healthiest, greenest, most livable city in the country by 2032.³ Accordingly, the goal of this TAP is to identify and elevate awareness of best practices on the following three

¹ For more information about Activity Centers, visit: <https://www.mwcog.org/documents/2014/01/08/place-opportunity-strategies-for-creating-great-communities-and-a-stronger-region-land-use/>.

² To view the Florida Avenue Market Small Area Plan, visit: <http://planning.dc.gov/publication/florida-avenue-market-small-area-plan-main-page>.

³ To view more about SustainableDC, visit: <http://sustainable.dc.gov/>.

Florida Avenue Market Study Area and Surrounding Context. Map source: sponsor briefing materials.



topical areas to developers and other stakeholders who are influencing the rapid change in the study area:

District Energy & Utility Infrastructure. The District is currently in the process of completing a study that will recommend the regulatory and financial policy to aid in the implementation of distributed energy and microgrid infrastructure.

Cultural Sustainability. As it looks to the anticipated changes for the study area, the District is interested in maintaining the cultural connection points for both a designated and surrounding community, including where people exchange personal elements of themselves in a way that creates a trusting, long-standing, and safe space. The District acknowledges that numerous independent and ethnic entrepreneurs have relied on this space for their economic and social livelihood for the past 85 years, and is searching for ways to protect these realities in the face of change.

Open Space. The streetscape of the Florida Avenue Market should reflect the unique, industrial history and culture of the neighborhood, maximize opportunities for district stormwater management infrastructure, and integrate deaf space design guidelines for the adjacent Gallaudet University.

The Panel was asked to address the following questions:

District Energy & Utility Infrastructure

1. As projects are being developed and built in the study area, how can the public and private sector collaborate to leverage energy and stormwater management green infrastructure?
2. In addition to energy infrastructure, what opportunities exist to provide district scale utility systems that could benefit all developments and support the District's sustainability goals?
3. At the time of the TAP, the District had released the Climate Adaptation Plan for public comment.⁴ What type of new or adapted infrastructure is needed to be incorporated into the utility project at Florida Avenue Market in order to make the neighborhood adaptable to enable future district energy systems?
4. What are strategies, incentives, and other methods that would encourage developers and private land holders to think and work collectively about district energy and utility infrastructure within this study area? Do regional, national, or international examples of such collaboration exist?

Cultural Sustainability

5. What measures could be taken to mitigate displacement of industrial businesses and residents, and ensure that the connectedness and cultural relevance of this unique and historical community is guarded?
6. What are some of the major cultural assets and modes of cultural expression in this neighborhood? How accessible are they to those who live/work/play in the neighborhood? Those who don't?
7. What are some of the major challenges faced by local cultural producers, consumers, and performers (e.g. lack of performance space; affordable housing; arts funding; etc.)?
8. What role does infrastructure play in providing a stage for cultural activities in this neighborhood (e.g. parks, streets, sidewalks, street furniture, plazas, and other types of gathering areas that can allow for thought, individual expression, collective idea exchange, and so forth)?
9. How can local cultural production, expression, and consumption be preserved, enhanced, and stimulated? What are creative ways to address challenges identified in the above questions?

Open Space

10. Given the limitations of dedicated open space, how can the design of interstitial spaces, the public realm, and the private realm be maximized to provide meaningful open space and public gathering spaces that would support a future new neighborhood while providing authentic connection to the market's existing character? What regional, national, or international examples exist that might be illustrative of these design concepts?

Implementation

11. How should recommendations for District energy and utility infrastructure, cultural sustainability, and open space be implemented? Are there near or longer-term steps that should be considered regarding implementation?
12. What are the financing mechanisms that could pay for this additional investment and make it accessible and beneficial for the new developments?
13. What are the long-term cost savings for green utility systems that could offset the initial up-front expense?

⁴ At the time of press, DC's most updated Climate Adaptation Plan may be found here: <http://www.sustainabledc.org/climatereadydc/>.

Key Cultural Institutions

Panelists approached the various challenges set forth in this study by first establishing a common understanding of the area's existing conditions, including identifying key stakeholders. The study area is uniquely characterized by the presence of two key cultural institutions: Gallaudet University and the Florida Avenue Market itself.

Founded in 1864, Gallaudet University has served as a member of the local community for as long as the community has existed. As the world's only university designed to be barrier-free for deaf and hard of hearing students, Gallaudet University serves 2,000 students from across the United States and over 25 countries.⁵ In addition to serving as the world's largest publisher of books about and for the deaf community, and to providing \$4.7 million in funded student, faculty, and staff research each year, Gallaudet University is a leader in DeafSpace architectural design – a discipline centered around design elements that address five major touchpoints between deaf experiences and the built environment. These include: space and proximity, sensory reach, mobility and proximity, light and color, and finally acoustics.⁶ Understanding the importance of DeafSpace and its significance within the study area served as a foundational component for the Panel's recommendations.

DEAFSPACE

According to Gallaudet University: Deaf people inhabit a rich sensory world where vision and touch are a primary means of spatial awareness and orientation. The built environment, largely constructed by and for hearing individuals, presents a variety of surprising challenges to which deaf people have responded with a particular way of altering their surroundings to fit their unique ways-of-being. This approach is often referred to as DeafSpace. The study of DeafSpace offers valuable insights about the interrelationship between the senses, the ways we construct the built environment and cultural identity from which society at large has much to learn. For more information, visit: <http://www.gallaudet.edu/campus-design/deafspace.html>.

⁵ <http://www2.gallaudet.edu/attend-gallaudet/about-gallaudet/>

⁶ <http://www.gallaudet.edu/campus-design/deafspace.html>

Florida Avenue Market, which opened in 1931 as Union Terminal Market, has been a vibrant institution within the study area's community since its inception. Further, the Market has served as a key wholesale and retail food distributor for much of the history of the District of Columbia. Today's diverse wholesale vendors include: African, Caribbean, Latin American, and Asian merchants. In formulating its recommendations, the Panel considered the unique aspects that the Market brings to the study area, including how it has shaped the neighborhood over time, the visitors it has attracted to the community, and its relationship with Gallaudet University.



Figure 12: The View in the Union Market - 1949
Source: Wymer Collection, Evening Star, Historical Society of Washington, D.C.



Figure 6: View in the Union Market - 1949
Source: Wymer Collection, Evening Star, Historical Society of Washington, D.C.

The Union Terminal Market, which officially opened in 1931, was comprised primarily of wholesale distributors as well as some retail offerings. According to the TAP briefing materials, in 1932, the Union Terminal Market included seven produce vendors, seven meat vendors, four delicatessens, two wholesale confectionary companies, and several merchants specializing in eggs or fish.

Image sources: TAP sponsor.

District Energy

OVERVIEW

The Sustainable DC Plan, which serves as the framework for the District of Columbia's effort to be the most sustainable city in the nation, sets ambitious goals to reduce greenhouse gas emissions, reduce energy use, increase renewable energy, increase resilience, and increase access to green jobs.⁷ Climate Ready DC and Clean Energy DC are two initiatives that support the climate and energy goals identified in Sustainable DC. Climate Ready DC identifies the increased threats to power grid disruptions from severe storms and the need for resilient infrastructure, while Clean Energy DC identifies the need for neighborhood-scale energy.⁸

According to Panelists, Florida Avenue Market is a potential local application of district energy that can help the District of Columbia meet energy and resiliency goals outlined in Sustainable DC, Climate Ready DC, and Clean Energy DC. The study area is ripe for redevelopment, with 19 planned unit developments (PUDs) currently underway in various phases. Panelists acknowledged that comprehensive upgrades of infrastructure will be needed to support this development, since existing utilities are generally in poor condition, past their useful lives, or limited in capacity. Opportunities exist to incorporate district energy during the process of installing a network of underground utilities. Panelists emphasized, however, that the DC Government and Florida Avenue Market stakeholders must move quickly to incorporate district energy, particularly since these utility installations are scheduled to begin soon and many of the PUDs are either approved or are far along.

District energy systems are defined as centralized, highly efficient mechanisms, to provide power, heating, or cooling to a locality of buildings – typically a downtown district, university campus, hospital, or airport.⁹ District

⁷ <http://www.sustainabledc.org/about/sustainable-dc-plan/>

⁸ <http://doee.dc.gov/climateready> and <http://doee.dc.gov/cleanenergydc>

⁹ <http://www.districtenergy.org/assets/pdfs/White-Papers/What-IsDistrictEnergyEESI092311.pdf>

<http://microgridknowledge.com/white-paper/chp-microgrid/>

<http://aceee.org/topics/combined-heat-and-power-chp>

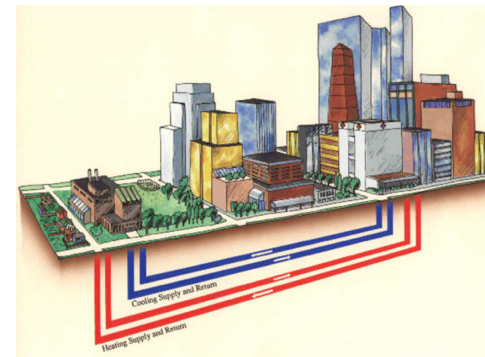
<http://www.unep.org/energy/portals/50177/Documents/DistrictEnergyReportBook.pdf>

Community Foundation. (2015). District Energy: Deploying Clean Energy Microgrids in the Nation's Capital. (Urban Ingenuity and CHA Companies). Prepared for the District Department of Environment, Washington, D.C <https://www.mwco.org/documents/2016/3/2/integrated-community-energy-task-force-reports/>

energy systems use underground pipes to supply customers with a mix of thermal energy in the form of steam, and hot and/or cool water, which is pumped through a closed loop system. Panelists recommended that a four-pipe closed loop system could supply power, heating, and cooling to the Florida Avenue Market and be integrated with other infrastructure improvements.

District energy often incorporates combined heat and power (CHP) for improved efficiency. CHP, also referred to as cogeneration, simultaneously produces electricity and heat from a single fuel source. A CHP system typically ensures that 80-90% of the primary fuel burned is utilized by end users, which is a vast improvement in efficiency over the typical 45% rate for a conventional power plant. Gallaudet University currently operates a CHP system on campus that could potentially be expanded to serve the broader Florida Avenue Market area. Panelists recommended that Gallaudet's CHP system serve as the primary local energy source for the Florida Avenue Market district energy system.

Panelists also recommended adding microgrid capabilities to the district energy/CHP system as a way of enhancing the resiliency of the system. A microgrid allows the system to act as a single controlling entity to incorporate multiple local energy sources and operate connected and in parallel or separate from the grid. Given the complementary uses proposed in the marketplace, if the Florida Avenue Market study area implements a microgrid, it could rely on additional clean, local energy sources. While connected, it could also provide excess power back to the grid and in an emergency, such as a severe storm that knocks out power to the grid. In this case, the system could separate or "island" itself from the traditional power grid to continue to provide power to the Florida Avenue Market.



A four-pipe district energy system has two pipes dedicated to pumping heat/cool fluid to the customer building and two pipes to return the fluid. The fluid is then reheated/cooled to be used again.

Image source: www.districtenergy.org.

CHP AND RELIABILITY

On October 29th, 2012, Superstorm Sandy impacted over 900 miles of the northeast U.S. coast with 90 mile-per-hour winds, causing widespread blackouts. More than 5 million customers lost power, many for extended periods. However, all CHP systems designed to operate during a grid outage performed as expected and kept power to the site. This includes several university systems including New York University (NYU), Princeton University, The College of New Jersey (TCNJ), and Salem Community College. Louisiana State University's CHP system has continued operations through events like Hurricanes Katrina (2005) and Gustav (2008). The reliability of these sites has allowed them to serve as shelters and command posts during these emergency events.¹⁰

During the stakeholder component of the TAP, Panelists and stakeholders discussed solar, geothermal, and wastewater heat exchange as potential additional local energy sources. With Washington, DC's solar renewable energy credit (SREC) market being one of the strongest in the nation, Panelists recommend solar as a smart economic decision for a secondary local energy source in the Florida Avenue Market study area.

¹⁰ https://www.pseg.com/sandy/pdf/post-Sandy_8.5x11.pdf and https://www1.eere.energy.gov/manufacturing/distributedenergy/pdfs/chp_critical_facilities.pdf

A district energy system can deliver more services for the same energy input if the buildings it serves are more energy efficient and the use is complementary. Panelists recommended that, ideally, the buildings in the district energy system should all be high performance buildings in that they achieve high environmental and efficiency standards through ENERGY STAR, LEED, Living Building Challenge, Passive House, or similar net zero and high efficiency standards.

Since comprehensive infrastructure improvements are scheduled to begin as early as 2017, Panelists thought it could be both difficult and uneconomical to add two additional layers of underground infrastructure investments into the mix (such as geothermal and wastewater heat exchange).

In summary, a microgrid-enabled district energy system would provide numerous benefits to the Florida Avenue Market area and to its surrounding neighborhoods. Some of these benefits include:

- Lower capital costs for the overall system, and to individual buildings, compared to installing boilers, chillers, cooling towers, pumps, etc. for each individual building.
- Increase in building leasable area, with building spaces previously reserved for boilers and backup generators no longer needed, reducing hard costs for individual buildings.
- Lower operating costs for all customers with building level equipment maintenance lower or eliminated. Burning less fuel and less distribution losses can result in overall lower energy costs.
- Improved reliability and redundancy with the use of a localized generating system available to supply the customers in the event of local grid disruption. The grid can also provide back-up to the district energy system if, for instance, the system is temporarily down for maintenance.
- Future proofing infrastructure by having the flexibility to switch fuels, fuel mix, or incorporating emerging technologies, which helps protect district energy customers from volatile energy prices.
- Aggregate mechanical systems are less than if each individual building develops its own system.
- Increased efficiency and reduced greenhouse gas emissions. The typical 80-90% efficiency of CHP reduces greenhouse gases and decreases the ambient air pollution emitted.
- Minimized community disruption from construction due to the already planned comprehensive community infrastructure improvements. District energy distribution lines could be added to the planned improvements.

DISTRICT ENERGY IN THE UNITED STATES

District Energy St. Paul (DESP) is the non-profit owner of the largest hot-water district energy system in North America. DESP was founded as a public-private partnership with the City of St. Paul in 1983. To reduce financial barriers for non-profit and small private building owners connecting to the system, the City established a \$2.6 million revolving loan fund for building conversion expenses. The DESP system supplies heat to over 185 buildings and cooling to 95 buildings. 300 single family homes receive one or both services. With over 27 years of operations, the DESP has provided numerous quantifiable benefits for the City of St. Paul. The cumulative savings for customers is over \$7 million in 27 years. These savings are shown with the annual energy cost increases for the DESP system averaging only 0.3% over a 23-year period, while natural gas prices have risen an average of 2.7% annually.¹¹

Enwave Seattle, formerly Seattle Steam, is one of the oldest district energy systems in North America. Today, the company has grown to provide thermal energy for 191 customers. Enwave Seattle's customers include city office buildings, hospitals, hotels, and college campuses. The company boasts that it has saved its customers 38% in annual energy costs from 2002-2009, compared to the local public utility. These savings were credited to the company's ability to switch fuel sources as energy prices fluctuated, and due to Enwave Seattle's purchase of gas futures at competitive prices directly from the fuels source. In addition, Enwave Seattle has partnered with an energy service company (ESCO) to offer an energy saving program directly to its customers. This program provides grants and loans to customers to assess the buildings energy savings potential. Customer buildings deemed in need of the energy retrofits are offered low interest loans. Enwave Seattle targets a 29% reduction of energy consumption through this program.¹²

DEMONSTRATING COMMITMENT

There are a wide variety of financing solutions available to district energy projects.¹³ Nevertheless, district energy projects face a variety of potential road-blocks depending on the characteristics of the project, the diversity of the projects stakeholders, and the willingness of the stakeholders to assume the inherent risks involved with moving forward on a district energy project. The diversity of these issues has made it difficult to find the necessary capital to fund the desired project in its full complexity, and within the desired time frame. In order to facilitate a financeable project, it will be imperative that both the private and public sectors demonstrate leadership and long-term commitment, including a fair methodology for allocating project costs.

During the TAP, panelists learned that many of the area stakeholders formed the Union Market Coalition to collaborate on a utility plan. The formation of

¹¹ <https://www.stpaul.gov/departments/mayors-office/sustainable-saint-paul/district-energy-saint-paul;>
[http://www.districtenergy.org/assets/CDEA/Case-Studies/StPaulDistrict-Energy6-27-07.pdf;](http://www.districtenergy.org/assets/CDEA/Case-Studies/StPaulDistrict-Energy6-27-07.pdf)
[http://www.unep.org/energy/portals/50177/Documents/DistrictEnergyReportBook.pdf;](http://www.unep.org/energy/portals/50177/Documents/DistrictEnergyReportBook.pdf)
[http://web.mit.edu/colab/gedi/pdf/Financing%20District%20Energy/DES_report.pdf;](http://web.mit.edu/colab/gedi/pdf/Financing%20District%20Energy/DES_report.pdf)

¹² <http://www.enwavesettl.com;>
<http://www.unep.org/energy/portals/50177/Documents/DistrictEnergyReportBook.pdf>

¹³ <http://www.unep.org/energy/portals/50177/Documents/DistrictEnergyReportBook.pdf>
Community Foundation. (2015). District Energy: Deploying Clean Energy Microgrids in the Nation's Capital. (Urban Ingenuity and CHA Companies). Prepared for the District Department of Environment. Washington, D.C
http://web.mit.edu/colab/gedi/pdf/Financing%20District%20Energy/DES_report.pdf
https://ecodistricts.org/wp-content/uploads/2013/03/5_Toolkit_Financing_an_EcoDistrict_v_1.1.pdf
<https://www.mwco.org/documents/2016/3/2/integrated-community-energy-task-force-reports/>

this coalition sends positive signals of coordination among land owners and developers. However, the viability of a district energy system also requires a commitment to a long-term coordinated approach. Panelists therefore recommend building on the momentum of this coalition and forming a Florida Avenue Market Business Improvement District (BID).

Establishing a BID demonstrates a long-term commitment to collaborating across sectors, and could serve as a forum to champion a district energy system and establish a business model for district energy. For instance, Panelists suggest that a BID Board of Directors might issue a clause in the BID's by-laws that mandates acceptance of an Offtake Agreement with the district energy provider for all properties within the BID boundaries. Bold action such as this would ensure that all existing and new commercial properties purchase a portion of the district energy's services.

Additional opportunities to demonstrate long-term commitment towards the viability of district energy exist as well. For instance, Panelists recommended establishing connection policies that govern either mandatory or voluntary requirements to hook up to the district energy system. According to the Panel, a project is more financeable if the loads are guaranteed; therefore, Panelists recommend that the District of Columbia pilot mandatory connection policies for the Florida Avenue Market to reduce investment risks. However, with the fast-approaching timeframe for comprehensive infrastructure replacement, Panelists acknowledged that it might be more expedient for the District to take the lead on connection policies, rather than relying on a yet-to-be-formed BID.

INFRASTRUCTURE CLUBS

Infrastructure Clubs can be a formal or informal collection of companies, agencies, and other stakeholders that come together to coordinate the proposed district energy system and reduce the inconvenience for residents, businesses, and road users during the infrastructure work project. If there is not sufficient time to establish a BID to facilitate the implementation of a Florida Avenue Market district energy system, stakeholders could consider an infrastructure club. The Digging Club in Bergen, Norway is an example of a successful infrastructure club. The Digging Club brought together the district heating network owner, water and sewage departments, waste management company, and the local electricity distribution operator, to discuss the options to move forward with the district energy system with minimum impact to the local community.¹⁴

Once the loads commitments are confirmed, Panelists recommend the DC Government and the BID coordinate on developing a district energy feasibility and design study, which would analyze the generation and distribution infrastructure requirements for a four-pipe microgrid-enabled district energy heating and cooling system for the Florida Avenue Market area. A district energy feasibility study would confirm peak energy loads and timing, further evaluate the CHP expansion needs and the potential of solar and other local sources, and

¹⁴ <http://districtenergyinitiative.org/report/DistrictEnergyReportBook.pdf>
<http://www.unep.org/energy/portals/50177/Documents/DistrictEnergyReportBook.pdf>

confirm the sizing and phasing for the district energy distribution lines. Finally, a feasibility study would analyze the associated costs, return on investment, and environmental and social benefits for the district energy system.

REDUCING FINANCIAL BARRIERS THROUGH POLICY INITIATIVES

Panelists recommend that the public sector lead the charge with a clear road-map for city-wide district energy and microgrid deployment. This includes developing a regulatory framework, utilizing planning tools, and creating a package of incentives. Taking such initiatives will result in reducing financial uncertainty for projects, and send a signal to the market that Washington, DC is committed to district energy deployment.

According to Panelists, currently, there is an absence of a clear regulatory framework in Washington, DC for microgrid operators. Under existing regulations, a microgrid operator could be as heavily regulated as a public utility, which makes it difficult to finance a project. There is no precedent for a multi-private user business model, and the microgrid operator needs to understand the regulatory process for advancing this type of business model. Panelists therefore recommended piloting a regulatory framework in the Florida Avenue Market area that would provide for light regulation. Such a regulatory framework would also allow distribution lines to cross the right-of-way, and could offer streamlined permitting, which would reduce both complexities and uncertainties.

Panelists also recommended that the District of Columbia more strongly align energy infrastructure planning with land use planning. The Florida Avenue Market area demonstrates a disconnect between energy infrastructure planning and land use planning and development: while several approved PUDs are underway in the Florida Avenue Market study area, the area lacks the infrastructure required to support such development.

In spite of this disconnect, Panelists acknowledged that the Comprehensive Plan update intends to incorporate clean energy, grid modernization, and resilience. Within that scope, the Comprehensive Plan could address the need to align infrastructure investment and clean energy goals with community development and influence small area plans to follow suit. Panelists pointed to The City of Alexandria's Eisenhower West Small Area Plan as an example of a plan that reviews the status of the existing energy infrastructure where additional loads (i.e. new development) would result in the need for additional infrastructure upgrades. The Eisenhower West Small Area Plan also projects and maps future energy needs as well as renewable energy CHP opportunities to meet the needs of the planned development.¹⁵ In addition to aligning energy infrastructure planning with land use planning, Panelists also recommended establishing the Florida Avenue Market as an energy innovation district to serve as a platform to pilot a variety of policies and incentives for district energy and microgrid deployment in the city.

¹⁵ <https://www.alexandriava.gov/EisenhowerWest>

Lastly, Panelists recommended that the Government of the District of Columbia create a standard package of financial incentives. Each incentive offering would need to clearly identify how district energy projects can utilize the incentive, and how it might be bundled with other incentives to maximize overall benefit. Panelists recommend piloting an incentives package for the Florida Avenue Market area to help advance projects that support public benefits, such as reliability and reduced emissions.

Examples of basic incentive package offerings could include funding preliminary feasibility studies, subsidies, or loans for detailed system feasibility studies, as well as providing financial support for microgrid-ready new development, existing building conversion costs, or district energy system hook-up fees. The Government of the District of Columbia should also consider ways in which it is willing to support initial capital investments for district energy systems. A variety of federal and local incentive options are provided in Appendix A of this report.

Panelists recommended that a standard set of bundled incentive options have some flexibility to be locally tailored to ensure the viability of the project. For instance, district energy hook-up fee subsidies could be considered for developments that provide environmental or social benefits to the Florida Avenue Market area. Qualifying benefits could include, but may not be limited to: implementing solar, net zero energy or living buildings; DeafSpace design; affordable housing and retail; or initiatives that minimize displacement of current market wholesalers and businesses.

ESTABLISHING AN APPROPRIATE BUSINESS MODEL

District energy projects have historically been funded through business models that are centralized around the public sector. Recent trends have also shown an increase in private, third party financed projects and public-private partnerships.

Third-party financed projects secure the necessary funds through a private company. Under this model, the private company assumes the risk involved with financing and the control over the completed project. Third-party financing is the preferable funding option for a local public authority with a low risk tolerance and a low desire for full control over the project.

Panelists recommend the Florida Avenue Market utilize a third-party financing model. Under this arrangement, a third party could take over operations of Gallaudet's CHP system and invest in extending a trunk line to 4th street so that additional district energy system pipes can be installed during infrastructure improvements. Likewise, new developments would be able connect in to the system and come online when they are ready. Operating the Gallaudet system would provide an automatic revenue stream for the third party. Gallaudet and the BID could negotiate any needed upgrades to the system as well as future revenue streams.

A Joint Cooperative Agreement (JCA) offers a way for the private financier and local authority to define shared risk and control. In this instance, a local authority would undertake minimum risk, but have a voice on the projects board. This type of partnership could potentially benefit from reduced tariffs, profit sharing, and a variety of other social and environmental objectives. Panelists recommended that the District Government and BID work together to define each other's roles and contributions to maximize the viability of the project.

DISTRICT ENERGY RECOMMENDATIONS

A summary of the Panelists' recommendations to advance the deployment of a district energy system at the Florida Avenue Market are as follows:

Implement a microgrid-enabled district energy system. Implement a four-pipe closed loop system to supply power, heating, and cooling to the Florida Avenue Market area. Utilize Gallaudet University's existing assets as the primary local energy source. Space is available to expand the capacity of the system on-campus to serve nearby off-campus loads. Solar should serve as the secondary local energy source to serve a broader microgrid. Solar could provide strong economic returns and access to federal tax benefits, which improves the ability to create a financeable project.

Align the timing of the installation of district energy distribution lines with other infrastructure replacement. The Union Market District Master Utility Plan outlines the phasing for all infrastructure improvements. The goal is to only dig up the street once and replace all infrastructure section by section. A main trunk line for the district energy system could be extended from Gallaudet across the community to 4th street. The phasing for the remaining district energy heating and cooling distribution lines could be timed in coordination with deployment of other infrastructure, as identified in the existing Utility Plan.

Formalize The Union Market Coalition as a BID. Establishing the Union Market Coalition and collaborating on a utility plan sends positive signals of coordination among land owners and developers. Creating a BID demonstrates a long-term commitment to work together and could be a forum to champion a district energy system and establish a business model for district energy.

Pilot mandatory connection policies in the Florida Avenue Market. Given the fast-approaching timeframe for infrastructure replacement, mandatory connection policies would guarantee load and reduce risk for investment in the district energy system. Where feasible, development that is ahead of schedule of the district energy system could be required to be "microgrid-ready" so they can connect later.

Develop a district energy feasibility and design study. A feasibility study would analyze the generation and distribution infrastructure requirements for a four-pipe microgrid enabled district energy heating and cooling system for the

Florida Avenue Market area. The load data from the existing Utility Plan can inform the study but load commitments should be confirmed in advance of the study.

Pilot a regulatory framework for multi-user business models. The Florida Avenue Market area will face a variety of legal and regulatory barriers. Developing a regulatory framework with clear guidance would mitigate confusion. Such a framework must provide for light regulation, allow distribution lines to cross the right-of-way, and offer streamlined permitting to reduce complexities and uncertainties of the project.

Align energy infrastructure planning with land use planning. The Florida Avenue Market study area demonstrates a disconnect between energy infrastructure planning and land use planning and development. The Comprehensive Plan should address the importance of aligning infrastructure needs and clean energy goals with community development. Small Area Plans should do the same.

Establish the Florida Avenue Market as an energy innovation district. As the private sector begins to show a collaborative commitment to this community through the development of a BID, the DC Government could show a commitment to district energy and microgrid deployment by establishing the Florida Avenue Market as an energy innovation district.

Pilot a public incentives package for the Florida Ave Market. Government can lead the way in reducing financial uncertainty through offering a standard set of financial incentives. Such a package should create a common understanding of how those incentives can be bundled to maximize their benefit to the local community.

Develop a third-party finance business model for district energy deployment. The private financier and DC Government should collaborate to define shared risk and control to maximize benefits to both parties.

Promote the Florida Avenue Market district energy system as a demonstration project. Given the emphasis and prioritization of district energy within the Florida Avenue Market study area, Panelists recommended building on this momentum to promote the feasibility, benefits, and business case for multi-user district energy systems. The lessons learned from this project could be used to implement a standard set of policies and incentives for additional energy innovation districts across the District of Columbia. Creating these standards and priority locations would also send a strong signal to the market that district energy and microgrids are a good investment.

Cultural Sustainability

The neighborhood, history, and culture of the Florida Avenue Market study area is especially unique within Washington, DC and the greater Metropolitan Washington Region. Panelists acknowledged that, geographically, the study area is situated at the intersection of the unparalleled Florida Avenue Market, Gallaudet University, and a distinct residential community. The Market's history to the area is particularly significant. As a former community gathering spot, the Market once served as a central location for commerce and activity, and has historically served diverse socio-economic groups over time by providing food, goods, and jobs to the neighborhood.

HONORING THE NEIGHBORHOOD: THE IMPORTANCE OF VISION

These unique circumstances present an equally unique redevelopment opportunity. However, in order to maximize the opportunities for successful redevelopment, Panelists advised that property owners must collaborate to establish a common vision and narrative for the area. Currently, there are several different development projects – all at various stages in the development process – anticipated for the study area. It is unclear, however, how these developments will interact or connect with each other in a way that honors the area's diverse neighborhood, history, and culture.

Panelists emphasized the importance of establishing a clear and cohesive vision and narrative – one that takes into account the area's history, its core constituents, and its unique design needs. This vision, which should be established by a coalition of developers in concert with the public sector, should serve as a foundational framework for guiding the redevelopment process. Establishing this vision and narrative should occur before too much time elapses, since redevelopment is imminent. In addition to honoring the study area's uniqueness, establishing a guiding vision has the benefit of setting the stage for long-term economically resiliency. Integrating redevelopment into the surrounding community will also be crucial to the overall success for the study area.

DESIGN, OUTREACH, AND THE ROLE OF THE MARKET

A major component of establishing a vision of the study area will be to develop a core set of principles for design. Panelists recommended convening a coalition of large and small businesses in the study area to collaborate and agree upon area design principles, which should include DeafSpace standards. Panelists also recommended integrating the architecture of the study area's historic structures into all new building designs, as well as historic signage.

Reestablishing the Market's role as a major cultural institution will help reclaim the study area's identity. Bringing a variety of ethnic foods back into the Market can bolster the diversity of food offerings that are currently available. Maximizing the Market's unique historic structure as a one-of-a-kind place for these food offerings creates an unmatched opportunity for placemaking that cannot be found anywhere else in Washington, DC.

Panelists also recommended expanding the market to include farm-fresh and artisanal products, and eventually to include complementary businesses as well. Pointing to vibrant markets such as the Portland Saturday Market in Portland, Oregon, and the Borough Market in London, England, Panelists suggested that adding businesses to the marketplace can broaden the market's reach, increase local and regional interest in visiting the market, and lay the foundation for programming.¹⁸ Together, these elements contribute to bringing an authentic vibrancy back to the neighborhood, and can help restore the area to its historic roots.

CULTURAL SUSTAINABILITY RECOMMENDATIONS

Achieving the goals described above will be challenging, but are not insurmountable. Panelists suggested the following recommendations:

Partner with food incubators. Local food businesses such as Union Kitchen and Mess Hall can help nurture startup and emerging businesses, which can ultimately become part of the Market. These food incubator businesses support and nurture entrepreneurs by providing shared space to work, opportunities to collaborate, and connections to retail outlets.¹⁹

Recruit multi-ethnic food vendors. Conducting community outreach at Gallaudet University, within the Florida Avenue Market, and in the residential communities directly adjacent to the study area can help inform what kinds of diverse vendors are most highly sought by the main constituents served by the study area.

¹⁸ To learn more about the Portland Saturday Market, visit: <http://www.portlandsaturdaymarket.com/>. To learn more about the Borough Market, visit: <http://boroughmarket.org.uk/>.

¹⁹ To learn more about Union Kitchen, visit: <http://unionkitchendc.com/>. To learn more about Mess Hall, visit: <http://www.messhalldc.com/>.

Provide Affordable Retail Space. As redevelopment arrives within the study area, it will become increasingly important to identify, preserve, and distribute affordable retail spaces so that different kinds of businesses are able to come to area. The study area holds a rare opportunity to remain as a center of authentic production, but if accessing retail space becomes too costly for small businesses, the area's authenticity will be compromised. Becoming a center for local business and innovation will require distributing affordable retail spaces throughout new buildings; retaining and attracting other local small businesses; attracting small DC tech companies; and partnering with Gallaudet University to provide innovation spaces for students. In particular, panelists pointed to Made In DC, a program that supports and promotes makers in the District, as a way to promote authenticity of local businesses in the area.²⁰



Provide financial support to historic property owners and small businesses. Rehabilitation of historic buildings is costly, and can therefore serve as a barrier to beautification for historic property owners. These barriers impede the opportunity to fully celebrate an area's unique architectural history. However, many national organizations provide low-cost loans to small businesses for capital improvements. Loans from organizations such as Accion, a global nonprofit organization with a mission to build a world in which all people can access the financial tools and services they need to improve their lives, provide a variety of microfinance services, investment options, loans, and educational opportunities that can help small and local businesses weather economic recessions, and provide for business upgrades and expansion.²¹

Create a Merchant Fund. A Merchant Fund can provide small grants to stabilize target businesses & match loans. Philadelphia, PA, for instance, is home to The Merchants Fund, which provides financial assistance to current merchants in Philadelphia through competitive stabilization and loan match grants. A private foundation, the fund distributes 5% of its assets annually to small businesses in the City of Philadelphia as part of its commitment to provide for the economic needs of the city's small businesses.²²

Adopt Small Enterprise Workspace Overlay. Using policy tools to incentivize the development of and access to small enterprise workspaces – or single structures that are comprised of several smaller workspaces – have been successful in other cities such as San Francisco, CA.²³ Panelists suggested addressing current zoning in order to support small businesses, innovation, and flexibility, and to require smaller footprints for certain kinds of retail and production.

²⁰ For more information about the Made In DC Program, visit: <http://www.thisismadeindc.com/>.

²¹ Learn more about Accion at: www.accion.org.

²² To learn more about The Merchants Fund, visit: <http://www.merchantsfund.org/>

²³ In 2013, San Francisco Mayor Edwin M. Lee introduced legislation to strengthen San Francisco's manufacturing and light industrial sector by incentivizing production of new space for industrial users. More information can be found by visiting: <http://sfmayor.org/article/mayor-lee-introduces-legislation-support-city%E2%80%99s-manufacturing-sector-light-industrial>.

Provide incentives to lease retail to deaf-owned businesses as part of Planned Unit Development (PUD) process. Because so much of the anticipated development for the area has come through the PUD process, panelists recommended using this process to incentivize leasing to deaf-owned businesses. This would encourage the success of businesses that can directly serve neighborhood constituents.

Tax credit. Creating a tax credit for provision of affordable small business workspace can result in attracting a diversity of small and local businesses to the area, thereby building authenticity.

Leverage that Great Streets Program. The District of Columbia Great Streets Program is a multi-year, multi-agency commercial revitalization initiative aimed to support existing small businesses, attract new businesses, increase the District's tax base, create new job opportunities for the District residents, and transform emerging corridors into thriving and inviting neighborhood centers that are magnets for private investment.²⁴ Panelists recommended seeking Great Streets designation to qualify for grants to reduce lease costs for 3-5 years.

²⁴ <http://greatstreets.dc.gov/page/great-streets-dmped>

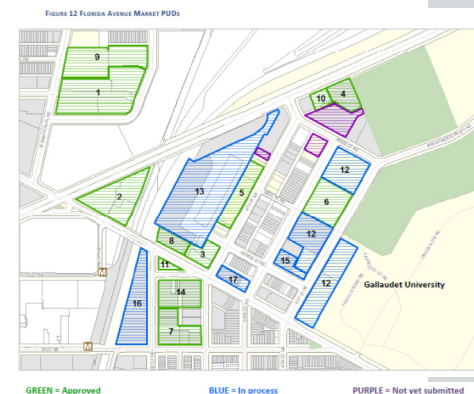
Open Space

Though the 45-acre Florida Avenue Market study area is anticipated to become home to 7,000 new units, and will likely house 12,000 new residents, there is not a significant park or recreation space planned within the area. Panelists found this notion problematic for reasons related to recreation, public health, environmental performance, quality of life and social equity.

Even without the substantial proposed new development, the neighborhood surrounding Florida Avenue Market is already park-poor. Green space in today's Florida Avenue Market is non-existent and the surrounding area does not have a large public park. While historic green spaces on the Gallaudet Campus – such as Olmsted Green – are beautifully designed and maintained, these spaces are not accessible or used by the nearby community. The dearth of open space has also surfaced as an issue of concern by the surrounding neighborhood.

The lack of open space designated at Florida Avenue Market is even more problematic when considered in the greater context of Washington, DC. In total, the city has 8,525 acres of parkland out of 38,955 acres, or nearly 22% of the city's land area – a figure which makes DC one of the best cities for parks in the nation.²⁵ Across the city as a whole, there are also roughly 1.7 playgrounds per 10,000 residents.²⁶

Studies have repeatedly shown that access to parks improves public health, particularly for children and the elderly. A well-designed park would be more than a recreational and community resource; it would also be a boon for property values in this swiftly-developing area. Designers and developers have seen this trend since the early days of American urban design, when Frederick Law Olmsted studied the property values adjacent to Central Park over 17 years, finding a \$209 million increase that more than justified the \$13-million-dollar investment.²⁷ Since then, the real estate booms adjacent to New York's



The 45-acre study area includes already approved development (green), development in the process of approval (blue), and plans not yet submitted (purple). Map source: Sponsor briefing materials.

²⁵ Trust for Public Land, 2016 Park Score: <http://parkscore.tpl.org/city.php?city=Washington,%20D.C.>

²⁶ Trust for Public Land, 2016 Park Score: <http://parkscore.tpl.org/city.php?city=Washington,%20D.C.>

²⁷ American Planning Association, City Parks Forum Briefing Papers. "How Cities Use parks for Economic Development." https://planning-org-uploaded-media.s3.amazonaws.com/legacy_resources/cityparks/briefingpapers/pdf/economicdevelopment.pdf



Open spaces in urban settings enhance the quality of life for community members and offer opportunities for exercise and active play.

Source: Flickr/Tim Evanson.



Impervious surfaces, such as the alley pictured here, create channels through which dirty stormwater runoff could travel.

Image source: ULI Washington.

revitalized Bryant Park²⁸ and the High Line²⁹, Chicago's Millennium Park,³⁰ Richmond's Canal Walk³¹, and Chattanooga's Renaissance Park³² have told similar stories.

The lack of open space within the Florida Avenue Market area also presents an environmental problem. Today, the site is almost entirely impervious surfaces, such as roads, alleys, and roofs. Impervious surfaces do not allow stormwater to be absorbed and infiltrated on site; instead, run-off gathers and must be collected by surrounding drainage systems. Run-off which is not infiltrated then carries an increased load of pollutants and bacteria. Steep slopes on the site also present problems for stormwater run-off, and exaggerate any flooding problems for neighbors downhill.

Future development, and the incorporation of green space, presents an opportunity to decrease the site's impervious cover, both through individual developments' adherence to DC's Green Area Ratio and stormwater retention requirements and through the incorporation of green infrastructure into parks, public spaces, and right-of-ways.

Panelists contended that development of this magnitude occurring at Florida Avenue Market should require the dedication of open space to meet the needs of current and future residents. Ideally, the Small Area Plan would designate a substantial open space for a park, which could be partially funded by contributions from the developers active in the surrounding area. Panelists agreed that an optimal development scenario for Florida Avenue Market would feature such elements as: dedication of a public park site in advance of development momentum; significant tree canopy; integrated stormwater systems; open spaces designed to address urban heat island issues; and roads and rights-of-way designed to incorporate green space, stormwater features and infrastructure for bicyclists and pedestrians.

However, at this point in the development cycle, Panelists recognized that numerous PUDs are going forward without a large park site designated. While disappointed that a large site had not been set aside for use as green space, the Panelists agreed that there are still several opportunities to create meaningful, inviting, and valued open spaces within the 45-acre study area.

In absence of a large park, Panelists agreed that the development area could accommodate a network of smaller green spaces. For instance, the uniquely wide streetscapes of the Florida Avenue Market precinct offer interesting

²⁸ Urban Land Online, "The Payoff from Parks": <http://urbanland.uli.org/economy-markets-trends/the-payoff-from-parks/>

²⁹ The New York Times, "As a Park Runs Above, Deals Stir Below": http://www.nytimes.com/2010/08/11/realestate/commercial/11highline.html?_r=0

³⁰ Landscape Architecture Foundation, Landscape Performance Series. Millennium Park: <http://landscapeperformance.org/case-study-briefs/millennium-park>

³¹ Landscape Architecture Foundation, Landscape Performance Series. Richmond Canal Walk: <http://landscapeperformance.org/case-study-briefs/richmond-canal-walk>

³² Landscape Architecture Foundation, Landscape Performance Series. Renaissance Park: <http://landscapeperformance.org/case-study-briefs/renaissance-park>

opportunities. Greening these streetscapes and connecting them with available small sites could create a network of vibrant, smaller green spaces which are visually linked and connect to the Gallaudet campus.

CONCEPT PLAN

To identify a workable green network, the Panelists identified sites within the study area which are not currently subject to PUD applications, or are designated green space within PUD applications; are centrally located in the context of the site and surrounding transportation infrastructure; comprise both larger sites and portions of streetscapes; and would create significant value for surrounding new development and enhance livability of a densely populated area.

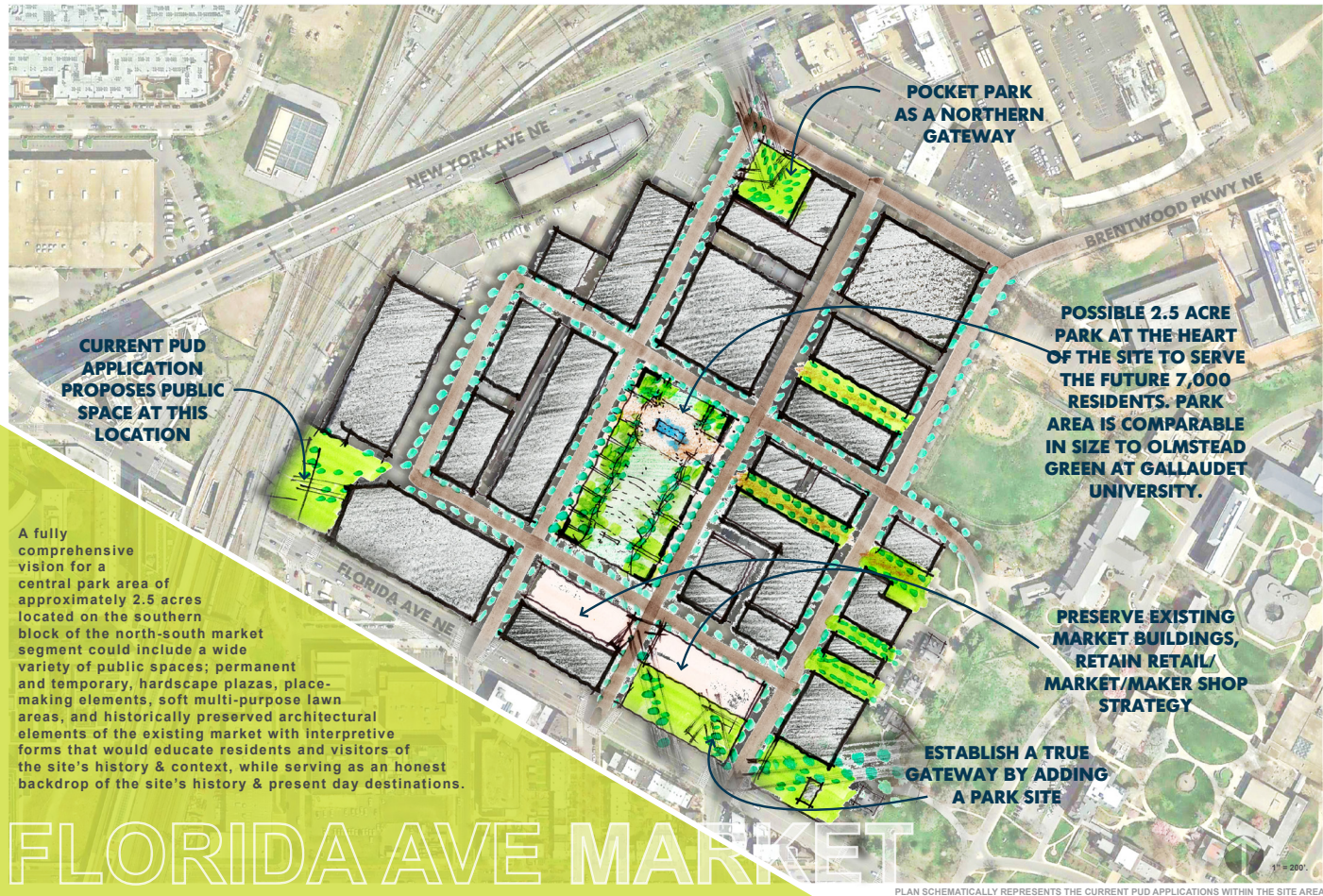
After identifying these sites, the Panelists proposed a green space network which would weave the proposed new developments together and offer residents, workers, and neighbors an attractive and healthy environment. This network would become both a recreational amenity and an opportunity for district-scale stormwater management.

The Florida Avenue Market concept plan proposes the creation of a series of linked green spaces connecting the market and surrounding development to adjacent Gallaudet University. This plan builds on existing proposals for a western corner park and numerous “green fingers” which are already a part of the various PUD proposals. The total green space within the plan is 4.5 acres, or about 10% of the overall site area. The largest green space within the network is 2.5 acres, a comparable size to Gallaudet’s Olmstead Green.

KEY ASPECTS OF THE CONCEPT PLAN INCLUDE:

Creating a strong axis between the campus and market. Neal Place Northeast functions as the primary connector between Gallaudet and the Florida Avenue Market, as it leads from Olmsted Green to the center of the Florida Avenue Market site. Other greened east/west and north/south connections enhance livability and create permeability within the site, including the pedestrian-only green linkage directly south of Neal Place.

Preserving historic market structures. The central green space within the concept plan should preserve the market structures to celebrate the site’s history and comply with potential historic preservation designations. Although architecturally significant portions of the structure should be preserved, the entire building need not be maintained exactly as is – key facades and markers could illustrate the site’s history without requiring maintenance of the entire structure. Preserving aspects of the historic market would support placemaking by celebrating the site’s unique history, identity, and role in the development of Washington, DC. Specific structures within the park may also contribute to the function of the park, such as preserved market stalls.



A fully comprehensive vision for a central park area of approximately 2.5 acres located on the southern block of the north-south market segment could include a wide variety of public spaces; permanent and temporary, hardscape plazas, place-making elements, soft multi-purpose lawn areas, and historically preserved architectural elements of the existing market with interpretive forms that would educate residents and visitors of the site's history & context, while serving as an honest backdrop of the site's history & present day destinations.

FLORIDA AVE MARKET

PLAN SCHEMATICALLY REPRESENTS THE CURRENT PUD APPLICATIONS WITHIN THE SITE AREA

The Concept Plan designates open green space in the remaining undeveloped areas in Florida Avenue Market.

Image source: ULI Washington.

Creating gateways to the developing district with green spaces on the southwestern, northwestern, and southeastern corners of the site. The current PUD applications propose some green space, such as the southwestern portion of the site, at the intersection of Florida Avenue and the Metro tracks. The Concept Plan builds from this proposal to add gateway parks at the northwestern and southeastern edges of the park. Sites along Florida Avenue are given particular priority, given that many pedestrians will be approaching the site from this thoroughfare, including those coming from the Metro.

Planting trees along the street network. Lining the streets within the Florida Avenue Market precinct with trees will not only visually link the streets and green spaces but also offer a host of other environmental benefits, such as carbon sequestration, stormwater interception and cooling through shade.

Incorporating green infrastructure to manage stormwater. Green infrastructure is critical to park design, and offers the opportunity to manage stormwater in line with the District's city-wide goals. Park and streetscape design should incorporate stormwater Best Management Practices (BMP) such as rain gardens, bioswales and rain chains, designed to enhance aesthetics and park user experience.

Precedents for Placemaking Parks

Parks around the world incorporate historic structures, whether as evocative centerpieces or adaptive reuse spaces. The panelists selected a range of neighborhood-scale parks and green spaces which incorporate historic facades, ruins and buildings, marking the past uses of the space. These memorable spaces have a unique, evolved sense of place today and contribute to their host cities' broader historical narratives.

(1) PARC DEL CLOT, BARCELONA

Barcelona's Parc del Clot, known as a "green lung" in the district, epitomizes the preservation of historic structures in open green space. The park was designed on land previously used for factories and mechanic workshops. Remaining structures, including chimneys, walls, and archways, were integrated into the landscape design to and recognize the district's past and create architectural continuity between the park and its surroundings. Community members also enjoy the connectivity, enabled by the creation of Parc del Clot, to the adjacent market and district council building.



Parc del Clot located in the Clot district of Barcelona, Spain.
Image source: https://upload.wikimedia.org/wikipedia/commons/7/7f/Parc_del_Clota.jpg.

(2) GÖRLITZER PARK, BERLIN

Berlin's Görlitzer Park lies along the former rail compound of the Görlitzer Bahnhof station, an 1860s Renaissance Revival station which was damaged in World War II. With the railway out of use, the site lay barren for several decades post war in West Berlin. In the 1980s, the site was redeveloped as a park, including open spaces, a children's petting zoo and a swimming pool. Two historic buildings remain on site, including a former station storage building now operating as a restaurant. Today, the historic buildings frame one of the most active spaces in the park.



Görlitzer Park, Berlin.
Image source: https://humblebones.files.wordpress.com/2013/06/img_7972.jpg.

(3) DOWNTOWN SILVER SPRING

Silver Spring's Veterans Plaza offers a precedent of the preservation of historic facades in an active downtown context. Silver Spring's suburban downtown was subject to numerous redevelopment plans starting in the 1980s, which took a range of approaches to historic preservation and open space. One of the plans, called the Downtown Silver Spring plan, incorporated urban redevelopment goals with historical preservation ideals to achieve the bustling town center the region enjoys today. Veterans Plaza offers one example of a balanced approach to historic preservation and redevelopment which is relevant to the challenges at Florida Avenue Market.

Today's Veterans Plaza, which opened in 2010, is fronted by the Silver Spring Civic Building and the preserved 1947 façade of the historic Hecht's department store, which is now Ellsworth Place. The plaza space



Downtown Silver Spring.

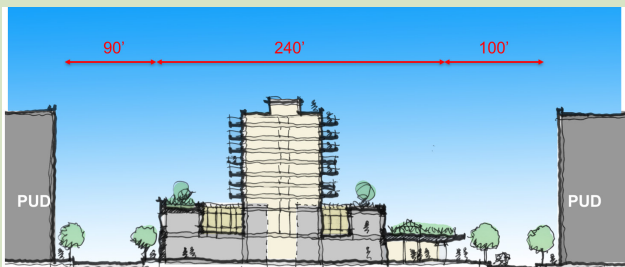
Image Source: <http://peterson.propertycapsule.com/property/output/image/photo/id:1906/width:1920/key:240f4633ec18e0d4ed6b7d9cca03fc85>.

is frequently programmed with farmers markets, arts events, and festivals, including a summer concert series and winter ice skating. The redevelopment plan created this public space, while also preserving a famed 1938 Art Deco shopping center façade and theater. However, not all the historic structures in the area were preserved; a World War II armory was sacrificed due to its inopportune location. The removal of the Armory was ultimately well-received by the community and the functional open space created in its place offered an active space for community and recreational activities. Through a multi-front implementation method utilizing public and private investment, the masterplan has been successful.

(4) UNLOCKING POTENTIAL UNTAPPED VALUE

The Panelists also explored other ways to generate value on the site, beyond the existing PUD proposals. While there is already substantial development proposed, an upside of additional high-density development would be the potential for developer contribution to public realm or open space schemes.

This schematic design concept takes the market site proposed for the main park within the Concept Plan and instead explores the incorporation of condominiums on the site. Residential units are proposed at roughly



Panelists considered additional ways to access untapped value. This rendering represents an different approach to unlock the potential of the market. Panelists acknowledged that this approach may be unpopular with certain groups. Image source: ULI Washington.

the same scale as the adjacent PUDs, within the District's height limit. Development at this scale would need to utilize the existing alleyway, and then could build from the preserved two-story market structures. Given the extremely wide scale of the streets within the Florida Avenue Market precinct, development of this scale could potentially occur while still allowing for green space within the right-of-way.

OPEN SPACE RECOMMENDATIONS

To improve the provisions for open space in the Florida Avenue Market study area, the panelists recommend the following:

Proactively designate a network of small, connected green spaces within the 45-acre site. The TAP Concept Plan proposes a network of smaller open spaces which together comprise 4.5 acres across the site. Many of these green spaces are proposed for gateway sites, particularly adjacent to Florida Avenue. The intention is to create dynamic, connected green spaces which can offer some recreational space and enhance connectivity with Gallaudet. This investment in green space should also enhance the environmental performance of the site and offer developers the opportunity to connect the stormwater mitigation strategies for new buildings with broader site planning initiatives.

Preserve existing historic structures to create a memorable central green space that celebrates Florida Avenue Market's history and character. The center of the proposed green space network is a 2.5-acre park bound by 4th Street, Neal Place, 5th Street, and Morse Street. Located at the heart of the study area, this green space could be home to events and placemaking initiatives celebrating the area's history as a market. The site currently includes market structures of a range of architectural qualities and levels of historical significance. A well-designed park could sensitively preserve some architectural structures within a larger green space designed to be a community hub.

Panelists identified the location of the proposed green space based on the spatial constraints that exist within the study area as a result of the large amounts of PUD applications. Panelists acknowledged that the existing structures on site may present an obstacle to park development, but nevertheless recommended the provision of a park at this location given the needs of the site, and the opportunities to use preserved historic structures within the park's design.

Preservation of aspects of the historic market buildings would be central to the design of this park. Original facades and other structures of architectural merit could be designed into the space, either repurposed as adaptive reuse projects or preserved as monuments. The park would celebrate the inherent value of these buildings as a testament to the neighborhood's historic role as a central market and wholesale hub for the entire city. The proposed plan seeks to preserve the essence of these buildings without retaining the entire building structures. Recently proposed historic preservation designations, if passed, may impact the viability of this proposal.

Address current stormwater regulations and incorporate best practice in green infrastructure. DC's stormwater management regulations are among the most progressive in the nation. The scale of development at Florida Avenue Market offers the opportunity to mitigate stormwater run-off at a district scale, showcasing best practice in green infrastructure on both new building sites and public spaces. Policies such as the district's Green Area Ratio (GAR) will ensure that new development incorporates green infrastructure to manage stormwater on-site. However, beyond tackling stormwater management building-by-building, developers could contribute to mitigation elsewhere on the site through the Stormwater Retention Credit (SRC) program or through joint BMP applications.

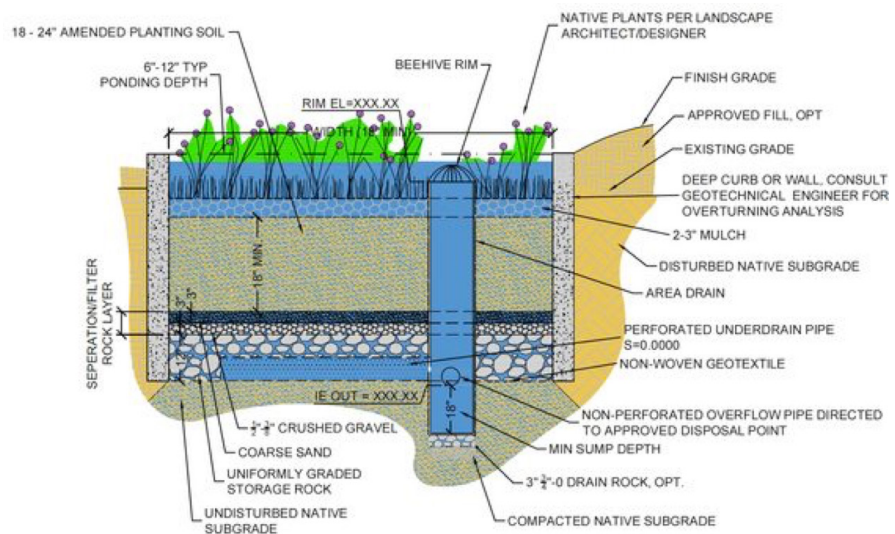
Given the district's commitment to green infrastructure, Florida Avenue Market's new development and parks and open spaces should incorporate green infrastructure BMP, such as green roofs, rain gardens and rain chains, cisterns, and bioswales. These stormwater management elements should be integrated into the landscape proposals, with plantings designed for infiltration and recharge. Stormwater management will also be an attractive part of streetscape redesign, providing green space alongside pedestrian amenities.

While the slope of the site may be difficult to work with at times, there are precedents for creating a vibrant retail streetscape at this gradient, as well as for managing stormwater at an incline.

Coordinate stormwater management techniques across PUDs through joint BMP applications. Because any project larger than 5,000 square feet triggers DDOE's stormwater rules, all of the PUD projects within Florida Avenue Market will be required to manage stormwater on site through the

This diagram of a stormwater management best practice shows the makeup of sustainable landscaping

Image Source: <http://extension.oregonstate.edu/stormwater/lid-infiltration-facility-calculator-aka-rain-garden-calculator>.



provision of green infrastructure.³³ PUDs may apply to jointly manage stormwater through investment in green infrastructure in the public realm, with possibilities for participation in the development of the green space network proposed for the site.

Incorporate bike and pedestrian infrastructure into streetscape designs.

DDOT has recently invested in numerous bike lanes in the area, including protected bike lanes on 4th Street NE and 6th Street NE. The roads which run through the site offer a unique opportunity for additional investment in pedestrian and cyclist infrastructure, given the width and scale of the thoroughfares designed for wholesale deliveries. The roads which run north/south through the Florida Avenue Market site, such as 5th and 6th Streets, could easily accommodate “road diets” to incorporate cycle lanes, wider pedestrian space, and green stormwater infrastructure. These “road diets” should be designed in conjunction with plans for the green space network across the entire site, including the central park.

Connect to the Metropolitan Branch Trail and surrounding neighborhood.

The Metropolitan Branch Trail is one of Washington’s best bike and shared use trails, and is a fantastic resource for the Florida Avenue Market area. The trail will eventually be eight miles long, linking Union Station and downtown Silver Spring and connecting to the Capital Crescent Trail loop. Work on the trail has been underway since the late 1980s, with the early segments advanced by the Washington Area Bicyclist Association and the Rails to Trails Conservancy.

The Florida Avenue Market site is immediately east of the trail, which runs alongside the Metro tracks from the NOMA/Gallaudet Station to the Rhode Island Avenue Metro Station. The green space and active transportation network designed for Florida Avenue Market should connect to the Metropolitan Branch Trail, offering an amenity to current and future residents and encouraging active transportation.



Downtown National Harbor in Maryland has a 3.5% slope and manages stormwater effectively and responsibly while enhancing the streetscape.

Image Source: <http://www.sasaki.com/blog/view/336/>

³³ DDOE Overview of Stormwater Regulations: <http://doee.dc.gov/sites/default/files/dc/sites/ddoe/publication/attachments/Overview%20of%202013%20Stormwater%20Rule.pdf>

Conclusion

Panelists appreciated the opportunity to study the Florida Avenue Market area, and to make comprehensive recommendations on three topics related to the study area. After spending two days touring Florida Avenue Market, hearing from the TAP sponsors, and interacting with many area stakeholders, Panelists offered many recommendations and suggestions pertaining to district energy and utility infrastructure, cultural sustainability, and open space.

By and large, Panelists agreed that the study area faces several hurdles to achieving the goals set forth in this TAP, many of which require creative solutions in financing, vision-setting, and collaboration amongst stakeholders. Panelists emphasized the importance of “getting ahead of the game” when setting such an ambitious vision for a neighborhood, and acknowledged that many of the recommendations in this TAP may be appropriate to apply to a different community where the notion of redevelopment is still in its infancy. In particular, Panelists agreed that a coordinated study should occur as early as possible in the planning timeline – ideally during the Small Area Plan design and approval process, or when changes to zoning, land use types, or increases to the FAR are being considered. Panelists emphasized that land owners and developers need to be brought together to collectively consider larger, interwoven issues before a neighborhood transitions and land transfers, rather than during a neighborhood’s transition.

Nevertheless, Panelists praised the District of Columbia’s Department of Energy and Environment for teaming up with the District of Columbia Office of Planning to invite ULI Washington into this area and provide recommendations. With coordination and creativity, the goals for Florida Avenue Market can remain within reach.

Appendix A:

Financial Incentives for District Energy

FEDERAL INCENTIVES

Department of Energy Loan Guarantee Program: A \$4.5 billion loan program that issues funds for projects with high technology risks that “avoid, reduce, or sequester air pollutants or anthropogenic emissions of greenhouse gases.” Loan guarantees are intended to encourage early commercial use of new or significantly improved technologies in energy projects.³⁴

Community Development Block Grant (CDBG): U.S. Department of Housing and Urban Development program that provides communities with resources to address unique development needs. CDBG could be explored to support district energy projects. At least 70% of CDBG funds must be used for activities that benefit low and moderate income persons, and meet at least one of the following qualifications: (1) prevention or elimination of slums or blight, and (2) address community development needs having a particular urgency.³⁵

Qualified Energy Conservation Bonds (QECCB): QECCBs are a taxable bond that enables a qualified local government, state, or tribal government issuer to borrow money at low rates to fund energy conservation projects. QECCB’s are subsidized by the U.S. Department of Treasury, which makes the loan one of the lowest-cost public financing tools available. QECCB’s can be used on projects that reduce energy consumption in publicly owned buildings and for implementing green community programs.³⁶ The City of Holland, Michigan received \$11 million in QECCB funds to renovate the city’s Civic Center and incorporate a new District Heat Utility for 32 buildings in the downtown area.³⁷

New Market Tax Credits (NMTC): NMTC is an U.S. Department of the Treasury program to encourage investments from Qualified Community Development Lenders (CDL) to provide an equity investment to fund the construction or rehabilitation of real estate projects in underserved markets.³⁸

³⁴ <http://energy.gov/savings/us-department-energy-loan-guarantee-program>

³⁵ http://portal.hud.gov/hudportal/HUD?src=/program_offices/comm_planning/communitydevelopment/programs

³⁶ <http://energy.gov/eere/sisc/qualified-energy-conservation-bonds>

³⁷ http://www.michigan.gov/energy/0,4580,7-230-72048_72070-387963--,00.html

³⁸ <https://www.cdfifund.gov/programs-training/Programs/new-markets-tax-credit/Pages/default.aspx>

Modified Accelerated Cost Recovery System (MARCS): MARCS is an accelerated depreciation schedule to reduce the systems owner's taxable income over a shorter time. This program allows for businesses to continue making long-term investments, and has been found to be a significant driver of private investments for a variety of energy industries, specifically solar.³⁹

LOCAL INCENTIVES

Feasibility Assessment Subsidy: A preliminary feasibility study can typically cost between \$25,000 - \$50,000. A local municipality that provides for the feasibility assessment eliminates the expense that a private enterprise must pay to conduct this study. These studies can help the city determine if any public subsidies are appropriate in exchange for public benefits that cannot be recovered directly in rates (i.e. greenhouse gas emission reduction, long-term energy security, etc.). Loans or subsidies could be provided for the more expensive detailed feasibility/design studies.⁴⁰ The District of Columbia Government has already conducted a feasibility assessment for the St. Elizabeth's campus.

Conversion or Connection Fee Subsidies: The city can reduce or help pay for existing building conversions that enable them to hook up to the district energy system or fund the connection charges for new customers to connect to the district energy system.

DC Property Assessed Clean Energy (PACE): DC's Commercial PACE program offers 100% financing for qualified clean energy projects for properties with no out of pocket payments. The loan is repaid through a municipal assessment (i.e. property tax bill) and is available for 20 years or more. The loan is easily transferred to the new property owners due to the assessments attached to the property, and not the property owner. Qualified projects include: (1) insulation of heating and cooling distribution systems, (2) automatic energy control systems, (3) energy recovery systems, (4) renewable energy system; and, (5) any other modification, installation, retrofit, or remodeling approved as an electric, gas, water, or stormwater utility cost-savings measure by the administrator.⁴¹

DC Sustainable Energy Utility (DCSEU) Rebate Programs: DCSEU delivers financial incentives, technical assistance, and information to DC residents and businesses.⁴² DCSEU programs can serve individual properties and owners in the Florida Avenue Market to improve energy efficiency or support clean energy deployment, such as solar.

³⁹ Community Foundation. (2015). District Energy: Deploying Clean Energy Microgrids in the Nation's Capital. (Urban Ingenuity and CHA Companies). Prepared for the District Department of Environment. Washington, D.C <http://www.seia.org/policy/finance-tax/depreciation-solar-energy-property-macrs>

⁴⁰ <http://www.districtenergy.org/assets/pdfs/White-Papers/MIT-gedi-financing-urban-Jan-2013.pdf>

⁴¹ <https://beta.code.dccouncil.us/dc/council/code/sections/8-1778.01.html>

⁴² <https://www.dcseu.com/about-dcseu>

Green Banks: Green Banks are state or local sponsored specialized financial entities that work with the private sector to increase investments in clean energy markets through the creation of more efficient, reliable, and sustainable energy systems. A Green Bank leverages private sector capital to support “green” financing markets by dedicating funds specifically for sustainable projects.⁴³ Clean Energy DC calls for the establishment of a Green Bank.⁴⁴ If the District of Columbia establishes a green bank, it could specifically address financing district energy infrastructure in the public space and right-of-way that PACE cannot address.

Solar Energy System and Cogeneration System Personal Property Tax Credit: DC has a personal property tax exemption for solar energy systems and cogeneration systems. Eligible cogeneration systems are defined as those which produce both electric energy and steam or forms of useful energy which are used for industrial, commercial, heating, or cooling purposes. The incentive amount can provide for an 100% property tax exemption on the value of the system.⁴⁵

Tax Increment Financing (TIF): TIFs are a method to provide finances for current development improvements through funds that will be collected through future tax gains on the property. The principle lays in the foundation that an improvement made to the property will raise the value of the premises, in addition to the surrounding land, which will drive up the tax value of the area. This increase in tax increments will cover the funds originally loaned to perform the improvement, and improve the future tax collections. TIF is designed to emphasis improvements in distressed or underdeveloped areas that have been neglected by or unable to participate in conventional financing options.⁴⁶

DC Revenue Bond Program: This bond program “provides market interest rate loans to help lower the cost of funds available for capital projects.” Bonds are tax-exempt, and rates are usually lower than interest rates on conventional loans.⁴⁷

Density Bonus: Density bonuses provide incentives for a specific development type that sets to achieve an agreed upon community vision. This allows a district energy system developer and the customer property owners to increase the scale of their building above the permitted zoning size.⁴⁸

Permitting Fee Waiver: An elimination of the permit fee and building fee will speed up development and construction of the district energy system in addition to reducing the up-front costs of the system.⁴⁹

⁴³ <https://greenbank.ny.gov/About/Overview>

⁴⁴ <http://doee.dc.gov/cleanenergydc>

⁴⁵ <http://programs.dsireusa.org/system/program/detail/5245>

⁴⁶ https://ecodistricts.org/wp-content/uploads/2013/03/5_Toolkit_Financing_an_EcoDistrict_v_1.1.pdf

⁴⁷ <http://dmped.dc.gov/page/dc-revenue-bond-program>

⁴⁸ <http://www.psrc.org/growth/housing/hip/alltools/density-bonus/>

⁴⁹ <http://www.psrc.org/growth/housing/hip/alltools/fee-waiver/>

Panelists

Bradford H. Dockser, CHAIR

Chief Executive Officer, Green Solutions, LLC
Bethesda, MD

Bradford H. Dockser is the Chief Executive Officer and Co-Founder of Green Generation Solutions, LLC, which engineers and implements comprehensive integrated energy efficiency solutions that lower operating costs while improving sustainability on behalf of a diverse set of clients worldwide.

During his more than two decades of real estate investing, Mr. Dockser was a Principal with national real estate investment firm, MacFarlane Partners, overseeing activities of their mid-Atlantic business; Partner and Chief Operating Officer for Western Development Corporation, a leading retail and mixed-use property development firm in the DC area; and Founder and Managing Director for Starwood Capital Europe overseeing operations, direct investments, and operating joint ventures and financing activities throughout Europe. He earlier founded Starwood Capital Asia and was responsible for the firm's Asian operations.

Mr. Dockser received an A.B. cum laude in Economics, as well as a Master of Business Administration, both from Harvard University. He was an Adjunct Professor at Johns Hopkins University Carey School of Business teaching an Introduction to Sustainability and Energy Efficiency in the Built Environment. He is a member of Urban Land Institute (ULI), US Green Building Council, Harvard University Asia Center Advisory Committee, and International Society of Sustainability Professionals (ISSP). He is Chairman of ULI's Washington Sustainability Council, and is a mentor for the SURGE accelerator program, a Houston, Texas based energy efficiency software seed accelerator venture. Mr. Dockser also was Founding Director of the Greater Washington Exploratory Committee, DC's bid committee for the 2012 Summer Olympics.

Gus Bauman

Attorney, Beveridge & Diamond
Washington, DC

Gus Bauman focuses on land use and environmental issues, advising clients on such matters as comprehensive planning, project development, and natural resource regulation. His recent matters have included zoning, historic preservation, wetlands, NEPA, TMDL, and Clean Air Act transportation conformity issues,

as well as writing amici curiae briefs to the U.S. Supreme Court on regulatory takings of private property and wetlands regulation. From 1989 to 1993, Mr. Bauman was full-time Chairman of the Maryland-National Capital Park and Planning Commission, the regional land use and parks authority for Montgomery and Prince George's Counties. He was a Principal at Beveridge & Diamond, P.C. during 1988-89, representing public and private clients.

Before joining Beveridge & Diamond, Mr. Bauman was Litigation Counsel and legal department director for the National Association of Home Builders. From 1974 through 1978, he was legal counsel for the Maryland-National Capital Park and Planning Commission. Mr. Bauman served as a member of the Maryland Greenways Commission and a reviewer of the Growing Smart model code project led by the American Planning Association. In 2004, he was appointed to the D.C. region's blue ribbon commission charged with recommending a funding solution for Metro, the regional transit agency. In 2006-07, Mr. Bauman chaired Metro's Joint Development Task Force to reform development of the region's Metrorail stations. In 2010, the Maryland General Assembly established the Blue Ribbon Commission on Transportation Funding, and the Governor appointed Mr. Bauman its chairman.

Mr. Bauman's writings have been cited by the Supreme Court in several cases, and his leadership in the field, including numerous articles and conferences, has gained him a national and regional reputation. He has been a highly-rated faculty member of the annual Land Use Institute for the American Law Institute-American Bar Association and is selected as a Washington, DC "Super Lawyer" by the peer reviewed organization.

Scott Brideau

Studio Principal

Little Diversified Architectural Consulting, Inc

Arlington, VA

Scott Brideau is the Workplace Studio Principal for Little Diversified Architectural Consulting's Arlington, VA office. With over 31 years of experience including 7 in construction, he leads a team focused on Office base building, Mixed Use, Repositioning and Corporate Interiors projects for a wide range of clients. He has served on ULI's Sustainability Programs committee and is currently co-Chair of the newly formed ULI Washington Sustainability Council. He also Chairs the Community Energy Plan Implementation Review Committee (CEPIRC) for Arlington County, where he has been engaged for over five years as a member of the initial Advisory Board and Task Force teams working with the County to develop a 40 year comprehensive Community Energy and Sustainability Plan, which was formally adopted into the County's overall Master Plan in July of 2014.

Mr. Brideau is currently focused on sustainability as an holistically integrated, lifecycle-centric process from project inception through occupation and evolution over time. He has been engaged for the past three years with Regenesys Group, as part of The Regenerative Practitioner education series where he has been learning about integrative design through a systems framework approach. Mr. Brideau received his Bachelor of Science in Architecture from The Catholic University of America, and is a LEED (O+M) accredited professional.

Katharine Burgess

Director, Urban Resilience

Urban Land Institute

Washington, DC

Katharine Burgess is the Director of the Urban Resilience Program for the Urban Land Institute (ULI), a nonprofit education and research organization that focuses on land use, real estate and urban development. The mission of the Institute is to provide leadership in the responsible use of land and in creating and sustaining thriving communities worldwide. Through research, advisory services, convenings and outreach, ULI's Urban Resilience Program works to help communities prepare for increased climate risk in ways that allow a quicker, safer return to normalcy after an event but also an ability to thrive going forward.

Ms. Burgess is an urban planner and researcher with twelve years of experience working in the non-profit and consulting sectors, specializing in resilience, masterplanning, community engagement, planning policy and design research. She has practiced urban planning in the US, UK, and Germany, with global project work across the US, Europe, and Asia. She began her career at Duany Plater-Zyberk & Company, where she managed post-Katrina hurricane recovery charrettes commissioned by the States of Louisiana and Mississippi and the City of New Orleans. Since then, her projects have included a range of large-scale, mixed-use masterplanning initiatives designed to encourage pedestrian activity and use of the public realm, including campus plans, downtown regeneration plans, urban extensions and a new town for 10,000 people in Scotland.

Ms. Burgess' research work has included landscape performance research for the Landscape Architecture Foundation, as well as international urban policy research for the Robert Bosch Foundation Fellowship program, during which she completed a work placement at the City of Berlin's Urban Design Competition Department. Her written work has appeared in Planning magazine and The Nature of Cities. Ms. Burgess holds a Master's of Science in Regional and Urban Planning from the London School of Economics and a Bachelor of History and Art from Williams College.

Gabriela Cañamar Clark

Principal

Land Design

Alexandria, VA

Gabriela Cañamar Clark joined LandDesign in 1998 with an architectural background, a passion for public spaces, and extensive experience in mixed-use, urban infill, residential and commercial projects. As a Fulbright Scholar and prior to LandDesign, Ms. Cañamar Clark served as an Urban Design Analyst for the Pittsburgh City Planning Department, and a Main Street Revitalization designer/planner with North Country Council, a regional planning commission in northern New Hampshire. Her commitment to creating inviting, safe and sustainable pedestrian environments has contributed to the success of many legacy projects. She is a senior lead designer responsible for project VISION creation and storytelling, concept development, and project management. She takes clients through successful project zoning entitlements, works with the design teams and municipal staff to convey the sense of place and the rationale behind the IDEA. She leads design teams through the preparation of full construction documents for large complex projects such as the downtown and waterfront at National Harbor, and the challenging re-development of

Downtown Silver Spring; as well as the vision development of the exterior experience for multifamily/mixed use projects in Tysons, NoMa, and the City of Alexandria.

Ms. Cañamar Clark earned a degree in architecture from the Instituto Tecnológico y de Estudios Superiores de Monterrey, Mexico and a Master of Landscape Architecture from the State University of New York and is a registered landscape architect in Virginia, Maryland, and Pennsylvania. She is also a member of the American Society of Landscape Architects, American Institute of Architects, Urban Land Institute and is also a member of the ACPS Alexandria Business Advisory Council.

Benjamin Cohen, LEED AP ID+C

Vice President

Davis Construction Corporation

Rockville, MD

As Vice President of Corporate Interiors, Ben leads by example. A LEED AP with over 18 years of award-winning experience, his leadership skills and honed sustainable construction expertise are distinct in the industry – and instrumental in meeting project goals for quality, budget and LEED. What clients love about Mr. Cohen is his persistence in resolving challenges. He thrives on collaborating at every level, bringing exceptional diligence and ingenuity to everything he does. Overseeing his team to deliver complex interior renovations and high-end build-outs, Mr. Cohen is actively engaged from the earliest stages of planning through the entire project lifecycle — guaranteeing a creative, effective and efficient approach.

Adept at thinking fast and slow, Mr. Cohen is always in motion. His energy is put to good use not only overseeing his project teams success, but also as a champion for DAVIS' CSR programming, serving on multiple committees and boards each year, while encouraging participation from his colleagues. Ben was recently recognized by USGBC's National Capital Chapter for his stewardship and excellence in service to the organization.

He also recently joined the board of the Friends of Kenilworth Aquatic Gardens, a nonprofit whose mission is to provide volunteer service for the National Park and to build community partnerships with neighborhood residents.

Maia Davis

Senior Environmental Planner

Metropolitan Washington Council of Governments

Washington, DC

Maia Davis is a Senior Environmental Planner at the Metropolitan Washington Council of Governments working on climate, energy and air quality planning. Ms. Davis led the development of the Regional Climate and Energy Action Plan that provides a roadmap and implementation guidance to meet regional greenhouse gas reduction and sustainability goals. Her work focuses on the implementation of initiatives that support the Action Plan such as advancement of clean energy solutions, the regional clean tech economy, smart cities, regional resiliency, and sustainable development. She is the White House Climate

Action Champions lead for the National Capital Region and serves on the Sustainable Maryland Certified Executive Committee.

Ms. Davis previously was with the Atlanta Regional Commission (ARC) as a Principal Environmental Planner where she developed and managed the Green Communities Certification Program for local governments and managed the Metro Water District's Water Supply and Water Conservation Management Plan. In 2006, Maia earned a Master's Degree from Georgia Institute of Technology in City and Regional Planning with specializations in Environmental Planning and Geographical Information Systems. She earned her Bachelors of Science from the University of Maryland Eastern Shore.

Ilana Preuss

Founder & CEO

Recast City

Takoma Park, MD

Ilana Preuss is the Founder of Recast City LLC, a consulting firm that works with real estate developers, city and other civic leaders to integrate manufacturing space for small-scale producers into development projects and local economic development. She is passionate about making great places and sees that small-scale manufacturers are a missing piece in today's mixed-use development and neighborhood reinvestment.

Through her work at Recast City, Ms. Preuss works with business leaders to understand the local small-scale manufacturing sector, discover the potential to enhance real estate development, and tap state and federal resources for support. She works with real estate developers to integrate small-scale manufacturing businesses into new and rehab products to increase a project's value and draw people to the target neighborhood.

Ms. Preuss' projects at Recast City span the country – from Washington, DC to Honolulu, HI. Through work with real estate developers, foundations, city planning and economic development offices, and with mayors, she develops demand analyses, economic development strategies, and business-retention and planning policies. Her technique of intensive one-on-one engagement with local business owners provides clients with a deep understanding of local challenges and opportunities for success.

Most recently, Ms. Preuss was Vice President & Chief of Staff at the national non-profit, Smart Growth America. Before that, she led the smart growth technical assistance program in the Smart Growth Division at the U.S. Environmental Protection Agency and led the Smart Growth Implementation Assistance program.

In 2013, Ms. Preuss co-authored Federal Involvement in Real Estate, profiling the \$450 billion each year the federal government spends on real estate through a combination of direct expenditures and tax and loan commitments. More recently, she co-authored Building Better Budgets, a national analysis of the fiscal impacts of smart growth development showing one third lower infrastructure costs and more than 10 times the tax revenue from infill projects.

Ms. Preuss is an experienced speaker, see her presentation "The Coming Revolution: Small-Scale Urban Industrial Development" at Meeting of the Minds 2014 in Detroit, and her TEDx presentation, "The Economic Power of Great Places." She is a regular press spokesperson featured in the New York Times and USA Today.

David Varner

Office Director
SmithGroupJJR
Washington, DC

David Varner serves as SmithGroupJJR's Washington, DC Office Director while continuing over 30 years of architectural experience, primarily focused on private sector and developer-led solutions for base-building, build-to-suits and mixed-use projects. David is recognized for his success in solving complex large-scale challenges, innovations in sustainable design, and synthesizing metrics to better understand the difference between cost and value. Mr. Varner is an active member of the ULI Redevelopment and Reuse Council, The Federal City Council, Greater Washington Board of Trade, and the Washington Economic Club.

Mr. Varner is a member of the SmithGroupJJR Board of Directors and serves on the corporate Audit Committee. Past positions include leadership at the local Studio level and the national Practice level for the firm's commercial real estate sector. Mr. Varner is licensed in the eastern seaboard from Maine to Florida and is also a licensed interior designer in Washington, DC. As a LEED AP BD+C professional, he has delivered over 4,000,000 sf of LEED-certified projects, including the largest privately-owned Gold-certified office building in the U.S.

In his spare time, Mr. Varner is a mentor for a Rubenstein Scholarship recipient, competitive swimmer, and parent of two college students.

Kraig Walsleben, RLA, LEED AP BD+C

Principal
Rodgers Consulting, Inc.
Germantown, MD

Kraig Walsleben joined Rodgers Consulting Inc. (RCI) in 1989. Through his tenure at RCI he has worked as a Planner, Surveyor, Natural Resource Specialist, Team Leader and Project Manager. Assigned as the leader of an Engineering Team back in the year 2000, Kraig has directed the planning and engineering effort of multiple award winning mixed use developments in the Washington Metro area, creating thousands of residential lots and millions of square feet of employment space. And since 2013, these projects have conformed to the strict new Environmental Site Design (ESD) regulations for Storm Water Management in Maryland. As a project manager, Kraig continues to utilize his broad industry knowledge to guide his clients' projects through the challenging engineering and regulatory environment.

Mr. Walsleben has been a member of multiple citizen and professional advisory boards including being a founding member of the Water Quality Advisory Group for Montgomery County Maryland which helped guide Montgomery County in its adoption of the State mandated ESD guidelines. A licensed Landscape Architect, he holds undergraduate degrees in Fish and Wildlife Management and Landscape Architecture as well as a Master's degree in Planning from the University of Virginia.

In 2015, Mr. Walsleben served on ULI Advisory Service Panels in Seattle WA and Duluth MN, both focused on Urban Resilience.



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