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MEMORANDUM

TO: District of Columbia Zoning Commission

FROM: *JS* Jennifer Steingasser, Deputy Director for Development Review & Historic Preservation

DATE: January 7, 2013

SUBJECT: ZC 12-08 – Second Supplemental Report, Saint Elizabeths East Campus Proposed Zoning Text and Map Amendment from Unzoned to the Saint Elizabeths East (StE) District

The following are the Office of Planning's responses to requests for additional information made by the Zoning Commission at the October 18, 2012 public meeting:

1. Building form on a sampling of lots

Attachment 1 generally shows the building forms which could be developed within StE-12 and StE-17 zones based on the development at the maximum height or the maximum lot occupancy in addition to other area requirements and guidelines of the St. Elizabeths East Master Plan and Design Guidelines. The zoning, as crafted by OP, is intended to provide considerable flexibility in building form to respond to site conditions, context, and input from the Historic Preservation Review Board.

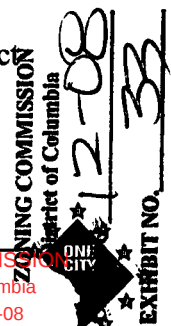
Within these two scenarios, considerable flexibility exists for building articulation, stepping back, provision of additional ground level open space, etc.

2. Affordability

The proposed zoning at St. Elizabeths East mandates that all residential developments contain levels of affordability required by the Inclusionary Zoning policy. St. Elizabeths East has a number of distinct parcels that will be developed over an extended period. Consistent with customary practice of the office of the Deputy Mayor for Planning and Economic Development (DMPED), additional requirements for affordable housing will be included as part of the solicitation for each parcel. At that time, DMPED will determine the levels of affordability beyond what is required by Inclusionary Zoning, based on market feasibility, community feedback, site-wide levels of affordability already available at the time, and District-wide goals for affordability housing.

3. Sustainability

Despite the infeasibility of providing for site-wide co-generation at St. Elizabeths East, the District is committed to seeing goals of increased sustainability achieved as the project is implemented. This will be addressed through other measures incorporated into the infrastructure development being undertaken by DDOT, as well as through individual building projects. The *St. Elizabeths*



East Master Plan and Design Guidelines dedicates an entire chapter to “*Environment and Sustainability*” which stipulates project goals regarding sustainability and protection of the environment. Excerpts from the Master Plan are provided as Attachment 2.

Infrastructure:

Infrastructure at St. Elizabeths East has been designed to accommodate new DDOE Stormwater regulations requiring significantly more stringent stormwater capture rates. The procurement documents will require respondents to include their design approach in order that DDOT may understand and evaluate their ability to incorporate sustainable solutions based on their understanding of the goals contained in the Master Plan.

Building Projects:

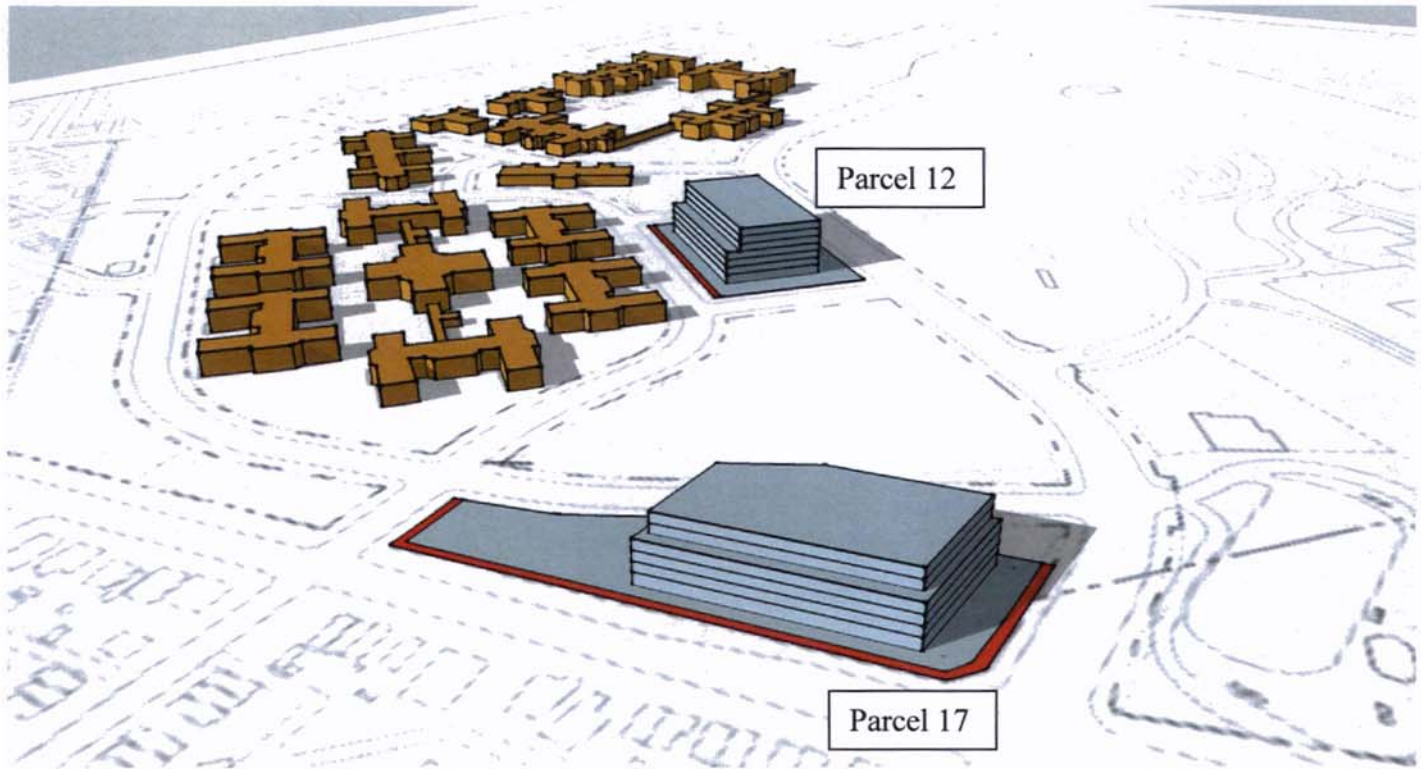
Many of the site wide sustainability goals will be achieved on a site-by-site basis. Solicitation documents will require that respondents articulate their understanding and achievement of project goals described in the Master Plan. Additionally, respondents will be required to comply with the District’s Green Building Act and the District’s storm water management regulations and demonstrate how their proposals will use innovative sustainable materials and methods to achieve the required development. Proposals will be required to utilize sustainable materials and incorporate development strategies and designs that relate to the vision for a sustainable D.C.

In addition, respondents must submit a LEED checklist indicating that the improvements are designed to include sustainable design features such that the improvements meet at a minimum the standards for certification as "LEED-Certified" buildings. The developer will be required to register the building with the U.S. Green Building Council.

Attachments:

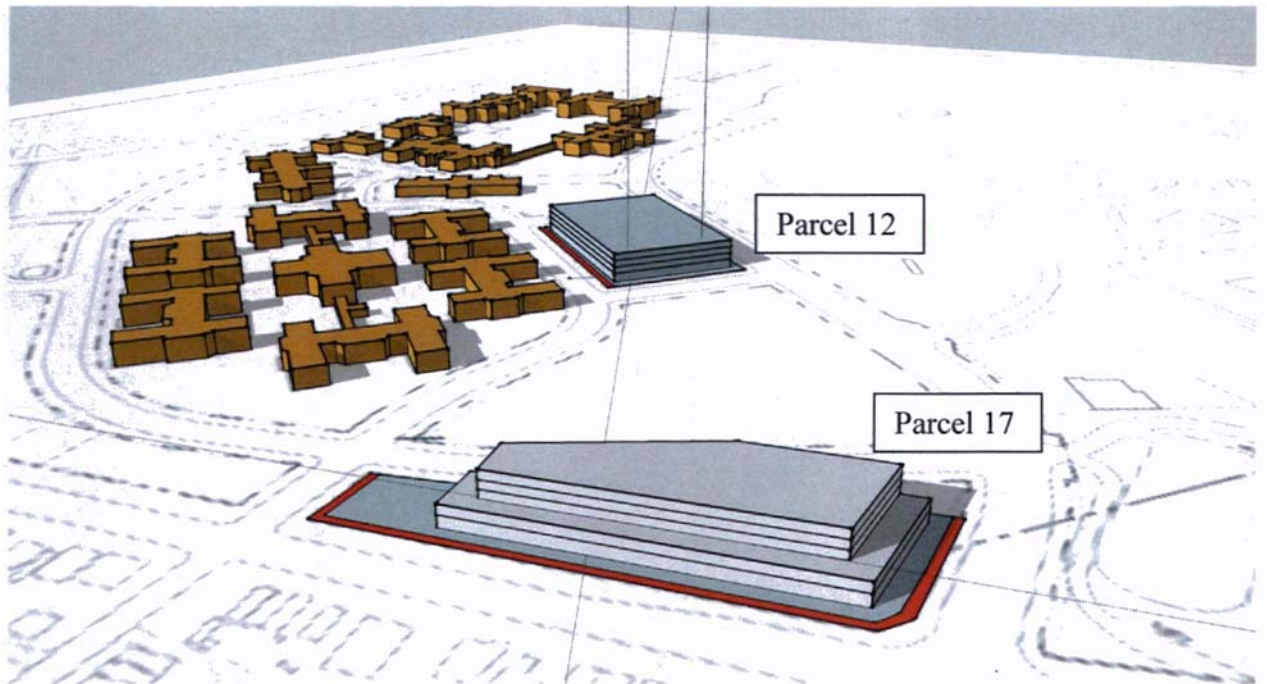
1. Building Forms on StE-12 and StE-17
2. Excerpt for the Master Plan, “*The Environment and Sustainability*”

Attachment 1



This scenario shows the buildings on Parcels 12 and Parcel 17 at their maximum height and FAR. Required stepbacks are also shown. The parameters for each are shown on the table below.

	Parcel 12	Parcel 17
Land Area	76,726 square feet	80,613 square feet
Height	80 feet	70 feet
FAR	3.0	2.5
Lot Occupancy	45%	44%



This development scenario shows the buildings on Parcels 12 and Parcel 17 at their maximum lot occupancy and FAR. Required stepbacks are also shown. The parameters for each are shown on the table below.

	Parcel 12	Parcel 17
Land Area	76,726 square feet	80,613 square feet
Height	44 ft.	55 ft.
FAR	3.0	2.5
Lot Occupancy	75%	60%

Attachment 2

THE ENVIRONMENT AND SUSTAINABILITY

SUSTAINABLE VISION FOR THE EAST CAMPUS

As our city and region continues to change over the next decade, development at Saint Elizabeths can lead the way in creating our sustainable future city. The basic goals of sustainable design are to reduce consumption of non-renewable resources, minimize waste, and create healthy, productive environments. Walkable neighborhoods, community parks and amenities, housing choices, jobs close to homes, and multiple transportation alternatives will contribute to the sustainability of the Saint Elizabeths East Campus Master Plan.

In addition to these assets, sustainable development on the campus will be achieved by applying low impact development (LID) techniques to new development, designing resource-efficient infrastructure systems, selecting energy efficient materials for new construction, and concentrating compatible land uses so they are multi-modal and pedestrian-friendly. The East Campus will facilitate a number of sustainability principles such as providing an active mix of compact live, work, and play programs in close proximity to enhance neighborhood quality, convenience, and health. These opportunities will create landscapes and ecosystems that are restorative, visually appealing, and enhance community character, while being accessible and ecologically sound.

Sustainability Principles: A Framework for Decision Making

Based on research and best practices, sustainability

principles have been developed for the East Campus to provide guidance for development that is healthy, environmentally sound, and enhance neighborhood quality. The result of these principles will create a strong sense of community, high quality of life for residents of all ages and abilities by providing a healthy and environmentally safe neighborhood and public spaces. This framework sets a high-level vision for this Master Plan to achieve both the desires of the community and stakeholders, while upholding the sustainability standards of the District. The Sustainability Framework highlights opportunities across six themes as follows:

- » Infrastructure
- » Energy Use and Generation
- » Water Use and Reuse
- » Materials and Waste
- » Habitat and Biodiversity
- » Greenhouse Gas Emissions

INFRASTRUCTURE

The site-wide design principles presented within this section are intended to create a cohesive and ordered building pattern at Saint Elizabeths East Campus. Existing and future residents expect that current planning and redevelopment will provide environmentally positive amenities and services that reinforce the range of desirable activities located in



other parts of the City. Each individual project is a part of the Master Plan, and as such, should contribute to the assets of this community as a whole.

Site-wide Infrastructure Principles

- » Develop infrastructure systems to maximize the efficient use of utilities and resources.
- » Ensure new and renovated infrastructure maximizes energy efficiency while enhancing opportunities for the use of renewable energy sources.
- » Reduce stormwater run-off through low-impact development principles and techniques that enhance the green and open space of the campus.
- » Develop buildings in close proximity to existing infrastructure with adequate capacity to accommodate these new projects.
- » Treat each individual project as a part of a whole, so the East Campus contributes to the quality of the surrounding community as a whole.

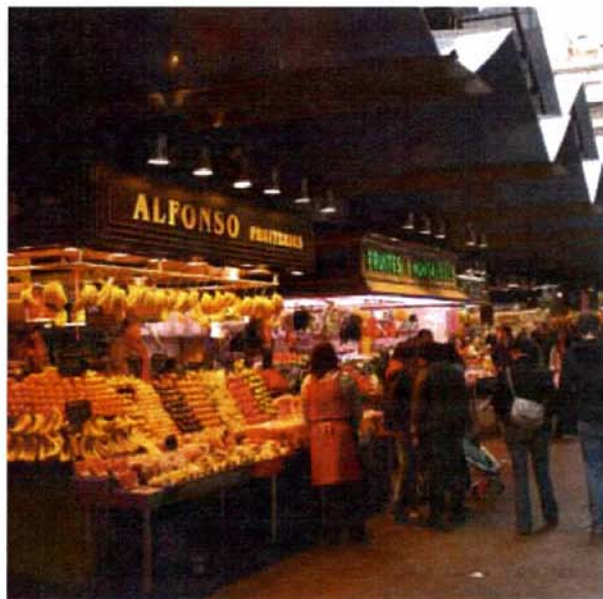


Figure 2.28: Bike lanes and farmer's markets adds to an improved quality of life for District residents.

ENERGY USE AND GENERATION

Mixed-use development on the East Campus will require abundant energy to heat, cool, and power the numerous buildings. However, by taking advantage of centralized systems and renewable technologies, this energy demand can be reduced, energy efficiency can be improved, and any potential contribution to



Figure 2.29: Eight Framework opportunities for new development on the East Campus.

climate change can be mitigated. The campus's large scale and diversity of uses provide many opportunities to apply sustainable practices to reduce the need for environmentally damaging fossil fuels. The energy principles seek to reduce energy demand, improve energy efficiency, create sustainable energy supply and mitigate contribution to climate change.

Energy in Buildings

All buildings, including renovation of existing structures, will be designed to achieve high levels of energy efficiency and meet the equivalent of the US Green Building Council's LEED Silver standard or greater. Building specific strategies will be integrated at the time of design, but the site offers opportunities for ground source heat pumps and passive design strategies. The campus also provides opportunities for integrating renewable energy, specifically, solar thermal for hot water and photovoltaics for electricity. The economics of these technologies should be closely examined at the time of building design, but all buildings should be designed to accommodate these technologies when they become economically viable.

District Energy and Cooling

District energy and cooling are a system for distributing heat and cooling to multiple buildings at the local neighborhood scale. Given the District of Columbia is served by relatively fossil-fuel-intensive grid electricity, onsite power generation, even using natural gas, can help offset a significant quantity of greenhouse gas emissions. The inconsistent (or "peaky") loads that occur in the morning and evening hours must be balanced with strong daytime loads (for example, commercial, retail, or hotel uses) to create a more consistent load, thereby enabling much greater efficiency for the central plant.

Energy Principles

- » Plan and design energy-efficient buildings and retrofit existing buildings to meet the LEED Silver rating greater to reduce the amount of energy needed for heating and cooling.
- » Consider a central power plant when a hotel or conference center and commercial office and/or retail spaces are added to the campus. A cogeneration plant, used to produce both heat and electricity, should be analyzed for its economic viability to meet the total heating demand of buildings in subsequent development phases.
- » Encourage the use of on-site renewable energy generation for local use (e.g., solar thermal, photovoltaic systems, biofuel-based electrical systems, wind energy).
- » In non-critical areas, lighting should integrate photovoltaics to reduce cabling requirements and promote the use of clean energy.
- » Reduce the energy required for water movement using gravity, low-powered motors, and solar power.

WATER USE AND REUSE

The District recognizes the importance of water as a resource for the city and the need to manage stormwater to minimize pollution, flooding and preserve the integrity of natural systems. One of the challenges of redeveloping the East Campus to provide a robust water supply to sustain the community, reduce potable water demand, and treat stormwater on the site. The Master Plan recommends implementing LID infrastructure to absorb and manage stormwater runoff from the campus through filtration and recharge areas. The water principles seek to provide a robust water supply to sustain the community, reduce potable water demand and treat stormwater on-site.

Water Supply and Treatment

Implementing conservation measures throughout the East Campus will greatly reduce demand on the potable water supply. These strategies should include installing efficient fixtures and appliances based on EPA Water Sense and Energy Star standards, and using graywater -- reclaimed water from rain harvesting, bathing, laundering and other activities -- for toilets and urinals. Rainwater collection and treatment is a relatively low-tech, parcel-level method of offsetting potable water use.

In Washington, systems taking advantage of graywater must comply with the provisions of the applicable DC building code. As of March 2013, this code will incorporate new standards for filtering and disinfecting such reclaimed water (it is anticipated that the new stormwater regulations will provide guidance on rainwater reuse).



Figure 2.30: Example of rainwater harvesting system (photo credit: RainHarvest Systems).

Water Conservation and Treatment Principles:

- » Drip irrigation systems and native plantings requiring little moisture should be used to reduce water demands for parks and landscaped areas.
- » Infrastructure leak-detection technology and accurate metering should be used to reduce overall water consumption.
- » Low water flow fixtures and appliances should be used in infrastructure and within tenant occupied spaces.
- » Explore the feasibility of using rainwater harvesting for non-potable water uses such as irrigation or toilets. The economics of rainwater harvesting vary by use types, and should be examined on a building by building basis.



Figure 2.31: Tree pits can be designed to collect stormwater.

STORMWATER

The East Campus is located in the Anacostia Watershed, which is one of the most polluted sub-watersheds within the greater Chesapeake Bay Watershed. As the urban water cycle continues to alter the quality of our aquatic ecosystems and increase the risk of flooding in the built environment, stormwater management practices such as low-impact development, BMPs, and green infrastructure have emerged. Providing a sustainable stormwater management plan within the redeveloped campus is an important strategy in this context. Stormwater standards continue to evolve in response to low impact development (LID) techniques and green infrastructure, and the District of Columbia is developing pioneering regulations that shift the impact on future land development to locally manage stormwater. This section reviews the proposed new

regulations and their design implications on the stormwater management alternatives proposed for the East Campus.

Stormwater Regulations

The U.S. Environmental Protection Agency (EPA) put into place the Municipal Separate Storm Sewer System Permit (MS4) for Washington, DC, which will be effective from October 2011 to October 2016. The new standards will require future developments, and substantial existing building retrofits that disturb land greater than or equal to 5,000 square feet to provide onsite retention of 1.2 inches of stormwater from a 24-hour storm through the use of evapotranspiration, infiltration, and/or rainwater harvesting. Offsite mitigation and/or a fee-in-lieu program will be used when sites are unable to meet the retention standard. The proposed 1.2-inch requirement was assumed for all aspects of the East Campus redevelopment.

Stormwater Quantity

The stormwater regulations require that the peak stormwater discharge rate from the 2-year and 15-year storm events must be controlled to the pre-development rate, which refers to a meadow condition, "prior to man's influence." The requirement is intended to ensure adequate capacity for stormwater conveyance systems and prevent flooding of properties downstream of the development. The Campus will discharge stormwater runoff into the adjacent ravine, and stormwater will then flow into the Suitland Parkway drainage system and outfall into the Anacostia River.

A variety of stormwater design guidelines can be implemented to meet the new DC stormwater regulations cost effectively. They are intended to be flexible and can be adjusted as the new stormwater regulations and their associated credit programs are refined.

Stormwater Principles

- » The East Campus is unsuitable for typical infiltration practices because of its clay soils, but bioretention and LID methods should be applied on a limited basis to meet the city's new retention standard. Bioretention facilities with under drains should be installed in some public spaces to meet the threshold of the retention requirement.
- » Decrease the amount of impervious surfaces on the campus, and use green roofs to reduce the volume of stormwater retention as required by the new standard. For sites where the building footprint encompasses the majority of the parcel area, green roofs (or rooftop detention) should be the primary retention strategy.
- » Collect and recycle rainwater for landscape irrigation, toilet flushing, and other uses to meet the retention volume standard.
- » Limit the post-development peak discharge to the pre-development peak discharge rate, by onsite stormwater management measures, such as wet or dry detention basins, infiltration basins or trenches, and underground storage facilities.

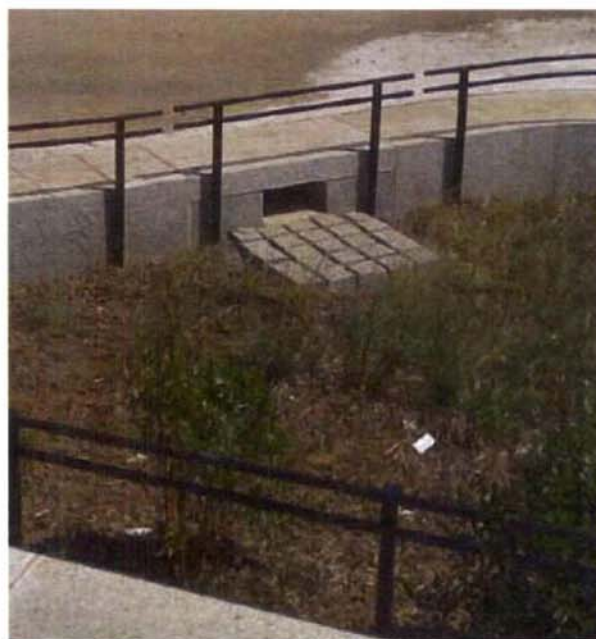


Figure 2.32: Biofiltration system near the Navy Yard.

MATERIALS AND WASTE

Waste is becoming an increasingly important issue for cities to manage more efficiently. City waste is transported significant distances before being treated or finally disposed. Waste can be categorized into two classifications: construction waste and operational waste (day-to-day life of a city).

On the East Campus, the large scale of development demands effective ways of dealing with waste by minimizing its generation during construction. Efficient design and careful planning of buildings can potentially meet a target of at least 90 percent of construction waste being diverted from landfills. The materials and waste principles seek to create buildings and infrastructure that are efficiently designed, built with environmentally sustainable materials; consider deconstruction and aims for zero construction waste.



Figure 2.33: Multiple recycling options.

The materials and waste operations principles seek to make a substantial contribution to the principle of eliminating the “concept of waste” through good design, emphasizing source reduction, reuse, recycling and composting.

Materials and Waste Principles

» Construction

- › Create a waste diversion plan to avoid landfills and/or incineration.
- › Promote preservation of cultural heritage by salvaging and reusing materials.
- › Utilize green building practices that encourage the efficient use of recycled and recyclable materials.
- › Encourage the use of low impact, low-embodied energy materials for buildings and

infrastructure.

- › Use products made of wood that are certified as harvested from sustainably managed forests.
- » Operations
 - › Promote the recycling and reuse of disposables by providing facilities, education and separation of materials.
 - › Encourage site users to divert organic waste material into compost.
- » Hazardous Materials
 - › Identify hazardous materials and develop a safe removal and abatement as the campus is developed.

HAZARDOUS MATERIALS

As with many sites developed in the early 1900s, the East Campus features hazardous materials within existing buildings and facilities, and buried in selected locations on the campus. Detailed review and research of the historic documentation, previous site assessments, and regulatory records show that such materials within existing buildings, site structures, and landscape features include:

- » Asbestos: ACM vinyl tiles and pipe insulation are present in some buildings and utilities.
- » PCB: Power transformers were observed at Buildings 88, 90, 92, 93, 94, 117, 119, and 124. Power transformers within the project area are owned by the US General Services Administration or the District of Columbia. The power

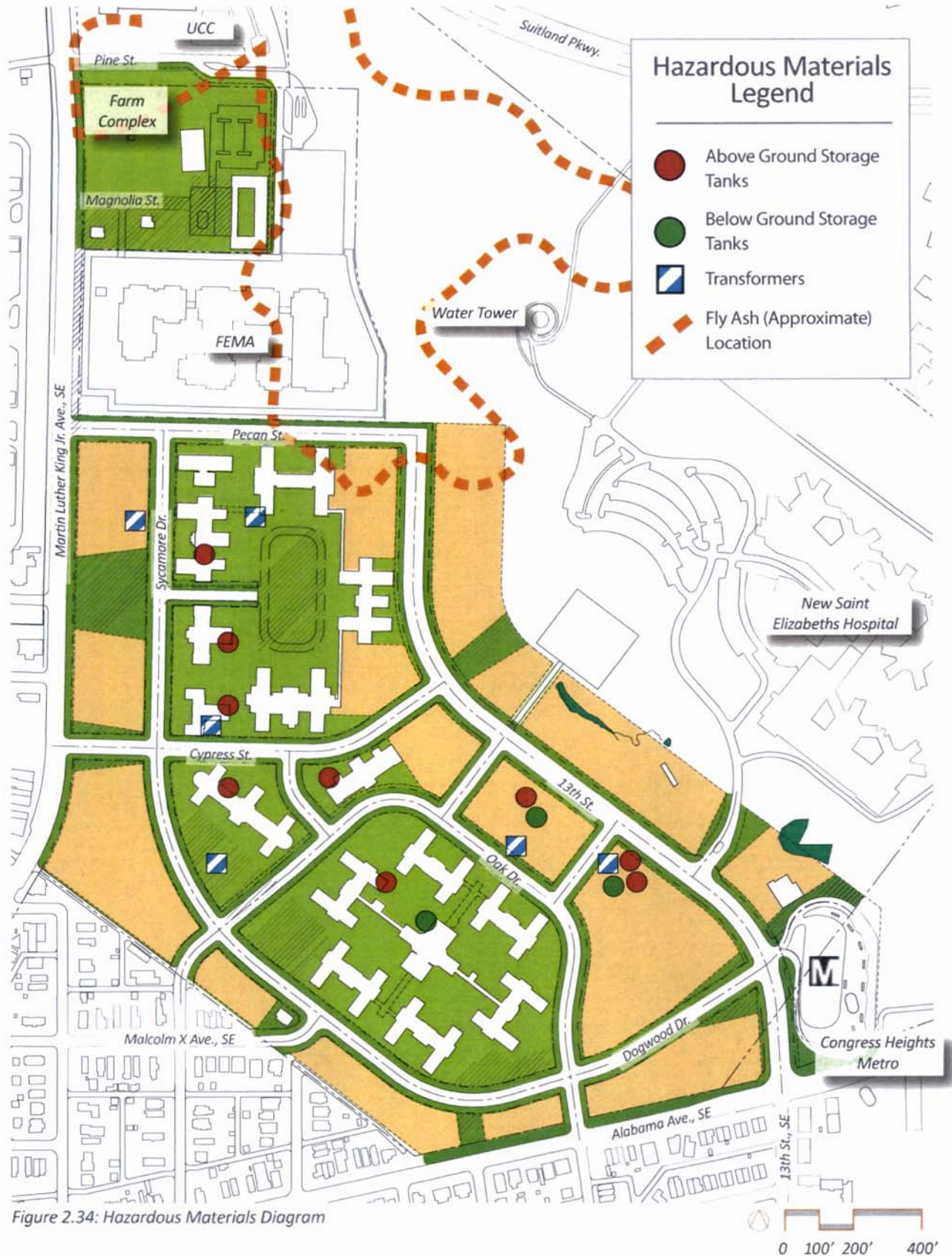


Figure 2.34: Hazardous Materials Diagram



Figure 2.35: Biodiversity in the Landscape

transformers on the East Campus are non-PCB-containing transformers.

- » Lead-Based Paint (LBP): LBP is suspected in the interior wall and ceiling paint, and in the wood trim of historic structures. Based on the age of the buildings on the East Campus (those built prior to 1977), it is highly likely LBP may have been used to paint the exterior of the buildings.
- » Underground Storage Tanks (USTs): Based on a 1995 RCRA Compliance Evaluation Inspection conducted by EPA on the Saint Elizabeths Campus, there were 10 USTs.
- » Radon: The rocks and soils found in the vicinity of the East Campus were mapped as having low radon potential (average readings of 0 to 4.0 picocuries per liter (pCi/L).
- » Fly Ash and Fill Materials: Approximately 30

acres along the northern most portion of the East Campus, between Suitland Parkway and Building 81, were formerly operated by the District of Columbia Department of Public Works as a landfill under Permit 1-83 (FHWA, 2008). The landfill was closed between 1983 and 1989, prior to regulation under the RCRA. The District DOH determined that the surface soil levels of polychlorinated dioxins and furans present at the site should not pose a public health threat to employees, patients, residents, or landfill workers (FHWA, 2008).

Future development or infrastructure construction on campus will lead to additional environmental review and testing for these issues in order to develop a safe removal and abatement plan. Further details on these plans are included in Chapter Four. For example, core sampling is recommended in landfill areas of future construction that would be at depths greater than 1 foot (FHWA, 2008).

HABITAT AND BIODIVERSITY

The Saint Elizabeths East Campus is characterized by a significant amount of open green space and wooded areas. The site provides valuable landscapes in the District that provide habitats and biodiversity for plant and animal species. Future development should build

on this legacy by creating landscapes and ecosystems that are restorative, visually appealing, biologically diverse, and ecologically sound.

Opportunities to achieve these goals lie in the integration of green roofs, green infrastructure, landscape plantings, and support of the District's biodiversity initiatives. The habitat and biodiversity principles seek to create valuable landscapes and ecosystems that are restorative, visually appealing, and enhance community character, while being functional, maintainable, biologically diverse and ecologically sound. These principles are adjusted to the Campus to address the discovery of potential wetlands during the Transportation EA.

Habitat and Biodiversity Guidelines

- » Promote the use of green roofs on new and existing buildings to enhance microclimate, a biodiverse habitat, and capture stormwater.
- » Reduce impervious surfaces to mitigate urban heat island effects.
- » Include biodiversity and native species in landscape planting design.
- » Design sensitively to existing habitats, such as wetlands and consider opportunities for LID.

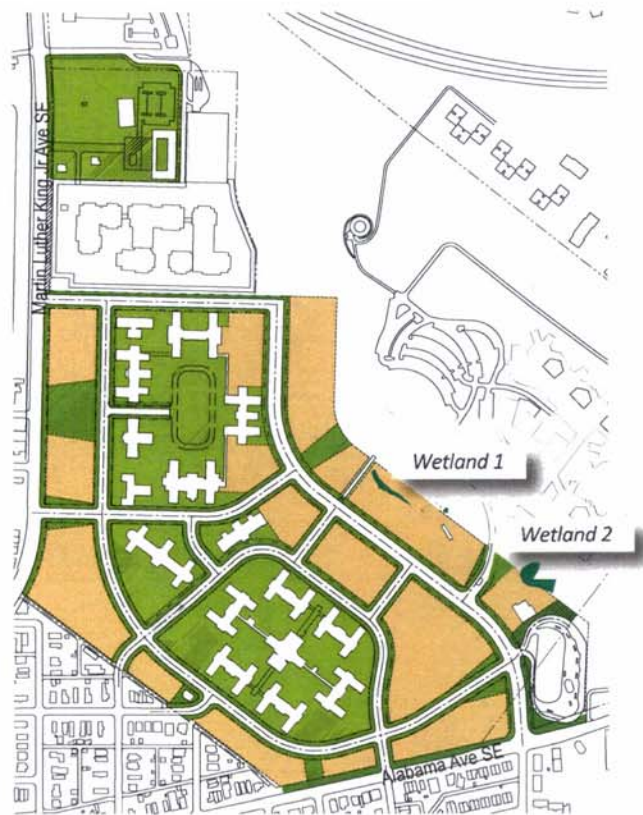


Figure 2.36: Wetlands Map

Wetlands Legend

- Identified Wetlands
- Development Pad for New Buildings
- Public Realm

WETLANDS

During the review of existing site conditions for the Transportation Environmental Assessment, the consultant team conducted a detailed survey (including documentation research and field investigations) of the East Campus and identified two water bodies that may be considered wetlands. The U.S. Geological Survey



Figure 2.37: Electric car charging station near 14th and U, NW.

(USGS) quadrangle map, National Wetland Inventory, District of Columbia Wetland Conservation Plan (District of Columbia, 1997) and online District geographic information system files showed no documented water bodies or wetlands within the project area. A detailed ecological survey was also conducted for the site that identified two potential wetlands in the undeveloped eastern section of the project area. More detailed information on the wetlands is available in the Transportation EA wetland delineation report which the District will use to inform additional planning and coordination efforts related to this issue.

GREENHOUSE GAS EMISSIONS

Buildings and transportation systems significantly affect greenhouse gas emissions. Saint Elizabeths should measure its own emissions to minimize their impact and reduce local air pollution. The carbon emissions per square foot should be calculated and a target of 30% reduction by 2020 from a baseline equivalent to a contemporary new development. The greenhouse gas emissions principles seek to calculate the Campus's carbon emissions per square foot and set a target of 30% reduction by 2020 from a baseline equivalent to contemporary new development.

Greenhouse Gas Emissions Guidelines

- » Reduce overall carbon dioxide gas emissions to combat climate change future hazards and adapt to current changes.
- » Implement energy efficiency measures for buildings and infrastructure.
- » Provide residents and visitors with alternative transportation options to reduce dependence on automobiles.

Greenhouse gas emissions are an important indicator by which the city will be able to determine the success of the other sustainability principles and methods put in place on the Campus. By measuring our greenhouse gas emissions, the city will be able to better determine our local impact on the global issue of climate change.

Attachment 3

