



The SW Ecodistrict

A VISION PLAN FOR A MORE SUSTAINABLE FUTURE



JANUARY 2013

National Capital Planning Commission

The National Capital Planning Commission is the federal government's central planning agency in the District of Columbia and surrounding counties in Maryland and Virginia. The Commission provides overall planning guidance for federal land and buildings in the region. It also reviews the design of federal construction projects, oversees long-range planning for future development, and monitors investment by federal agencies.

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The *SW Ecodistrict Plan* was prepared through the collaboration of the federal government and the District of Columbia.

The National Capital Planning Commission had primary responsibility for oversight of the project and ZGF Architects LLP served as the principal consultant.



Chairman's Message

We have a compelling opportunity to revitalize a federal precinct in the heart of the nation's capital into a showcase of sustainability. In collaboration with federal and local partners, and a community of citizens, the federal government prepared a plan that significantly reduces greenhouse gas emissions, stormwater runoff, and waste, and exceeds the goals of the President's Executive Order 13514: *Federal Leadership in Environmental, Energy, and Economic, and Performance*.

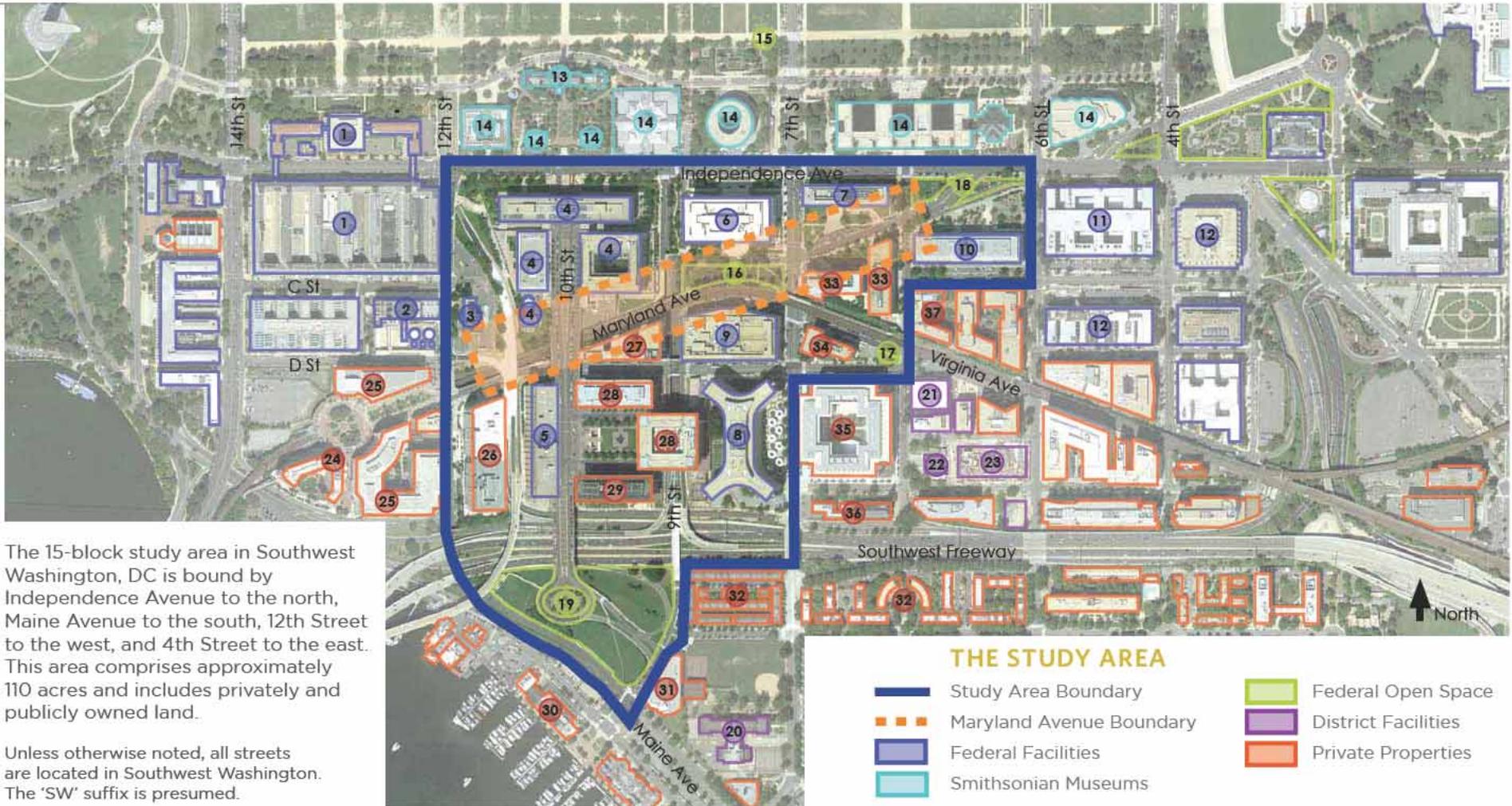
The *SW Ecodistrict: A Vision Plan for a More Sustainable Future* is a roadmap for creating a highly sustainable mixed use neighborhood, national cultural destination, and downtown workplace to meet the needs of the next generation of federal workers, city residents, and visitors. It demonstrates how precinct-scale planning for environmental systems achieves significantly better outcomes than individual building-scale strategies. The *SW Ecodistrict Plan* is not only a great vision for Washington; its innovative approaches to maximize efficiency and sustainability can serve as a model to revitalize federal buildings and campuses, and cities across the nation.

The plan addresses the current and foreseeable challenges of our fiscal climate, acknowledging that we need to think beyond traditional approaches to implementation. It provides a framework for coordinating physical development and operational decisions. It fully leverages the federal government's assets to create a more efficient and sustainable work environment that will reduce operating expenses and provide returns on investment over time.

The SW Ecodistrict vision was shaped by a remarkable partnership of 17 federal and District of Columbia agencies, as well as contributions from citizens and property owners. As the chair of the SW Ecodistrict Task Force, I wish to thank these participants for their commitment and participation. In particular, I want to recognize the General Services Administration and the District of Columbia Office of Planning for their leadership in developing key components of the plan. The *SW Ecodistrict Plan* is a significant milestone in the partners' ongoing efforts to transform this area into a highly sustainable community.

Sincerely,

L. Preston Bryant, Jr.
Chairman
National Capital Planning Commission



The 15-block study area in Southwest Washington, DC is bound by Independence Avenue to the north, Maine Avenue to the south, 12th Street to the west, and 4th Street to the east. This area comprises approximately 110 acres and includes privately and publicly owned land.

Unless otherwise noted, all streets are located in Southwest Washington. The 'SW' suffix is presumed.

- | | | | |
|---|--|---|---|
| <ul style="list-style-type: none"> ① U.S. Department of Agriculture (Whitten Building) ② General Services Administration Central Utility Plant ③ Cotton Annex ④ U.S. Department of Energy (Forrestal Complex) ⑤ U.S. Postal Service ⑥ Federal Aviation Administration (Orville Wright Building) ⑦ Federal Aviation Administration (Wilbur Wright Building) | <ul style="list-style-type: none"> ⑧ U.S. Department of Housing and Urban Development (Weaver Building) ⑨ General Services Administration (Regional Office Building) ⑩ U.S. Department of Education (Johnson Building) ⑪ Voice of America ⑫ U.S. Departments of Health and Human Services / Education ⑬ Smithsonian Castle ⑭ Smithsonian Institution ⑮ The National Mall | <ul style="list-style-type: none"> ⑯ Reservation 113 ⑰ Reservation 115 ⑱ Proposed Eisenhower Memorial ⑲ Banneker Park ⑳ Jefferson Elementary School ㉑ DC Government Offices ㉒ DC Fire Department ㉓ DC Forensics Lab ㉔ Mandarin Oriental Hotel ㉕ Republic Properties ㉖ Potomac Center North, Inc. | <ul style="list-style-type: none"> ㉗ CIM Urban Reit, LLC ㉘ L'Enfant Plaza Hotel ㉙ L'Enfant Colony, LLC ㉚ PN Hoffman/The Wharf ㉛ NBL Associates ㉜ Private Residential ㉝ Boston Properties ㉞ 300 7th Street, LLC ㉟ Constitution Center ㊱ St. Dominic's Church ㊲ Federal Center Hotel Association |
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The foundation of ecodistrict planning is that implementing and operating at a neighborhood or “district-scale” achieves greater sustainability and financial benefits than traditional building-scale strategies.



Overview

The SW Ecodistrict Plan

The *SW Ecodistrict: A Vision Plan for a More Sustainable Future* is a comprehensive forward-looking approach to urban sustainability and redevelopment. In 2010, in partnership with federal and local stakeholders, the National Capital Planning Commission (NCPC), established the SW Ecodistrict Task Force to evaluate how to best transform the 10th Street and Maryland Avenue corridors in Washington, DC, into a livable and highly sustainable mixed-use community.

The *SW Ecodistrict Plan* examines how federal assets and natural resources can be used most efficiently and contribute to the economic vitality and environmental health of the city. The plan is a roadmap that recommends how to achieve these goals by using district-scale sustainable practices to integrate land use, transportation, and environmental planning with high performance buildings, landscapes, and infrastructure. Known as ecodistrict planning, this approach yields greater environmental and economic benefits than traditional building-scale strategies.

The plan recommends how to best accommodate future federal office space needs, establish new cultural destinations, and extend the civic qualities of the National Mall. It proposes expanding transportation choices and creating a new walkable neighborhood of connected parks and plazas. It introduces strategies for capturing, managing, and reusing a majority of the energy, water, and waste among multiple sites and buildings.

The plan includes neighborhood and environmental strategies; a recommended development scenario; and four focus areas that organize site-specific recommendations. Recognizing that there are existing funding constraints, the plan lays out a flexible but critical path to coordinate improvements. It identifies near-and long-term priority projects including pre-development studies necessary to move projects forward. Finally, the plan includes a governance strategy outlining the partnerships, agreements, funding, and legislative tools that can translate the SW Ecodistrict recommendations into action.

NOW IS THE TIME

The confluence of several efforts present a once in a lifetime opportunity to achieve the SW Ecodistrict. A combination of proposed development, federal planning initiatives, and market conditions are putting Southwest Washington at the cusp of change. Now is the time to leverage this momentum.

- › The federal government is re-examining its property to meet aggressive sustainability targets.
- › The General Services Administration (GSA) is seeking to optimize how federal space is used, to create more efficient workplaces for a modern federal workforce while reducing operating costs.
- › The National Park Service (NPS) is improving its operations and the physical condition of the National Mall to sustain it as a national cultural resource.
- › The Smithsonian Institution is preparing a master plan to address its future facility needs in this area.
- › A multi-billion dollar private waterfront development project is planned; area property owners are investing millions to improve their land and facilities.
- › Sponsors are considering the study area for future museums and memorials.
- › CSX is spending millions to improve rail-based interstate commerce, while Amtrak and other transit agencies are evaluating how to accommodate the long-term needs for passenger rail service in the growing National Capital Region.

COSTS AND BENEFITS

A high-level economic analysis was prepared to understand and guide the public and private investments necessary to fulfill the SW Ecodistrict vision over a 20-year planning horizon. The *SW Ecodistrict Plan* recommendations will result in measurable and intangible economic, social, and environmental benefits for the federal government, the District of Columbia, property owners, and the American tax payer. These benefits will likely exceed the costs associated with sustainable building, utility infrastructure, and public space improvements, and the investments necessary to expand public-private partnership development opportunities.

Key benefits of the *SW Ecodistrict Plan* include:

- › Maximizing efficient use of federal facilities, land, and infrastructure;
- › Reducing the federal government's operating costs;
- › Increasing savings by moving the federal government out of leased space;
- › Increasing land values and land sale revenues;
- › Increasing the District's revenue from property, employment, and sales taxes;
- › Increasing the net operating income of private development; and
- › Conserving natural resources and reducing greenhouse gas emissions.

Important benefits more difficult to quantify include:

- › Increasing federal work force efficiency and attracting the next generation of workers;
- › Identifying locations for future national museums and memorials;
- › Protecting the historic landscape of the National Mall; and
- › Improving air and water quality.



PARTNERSHIPS

The plan's focus on public-private partnerships recognizes that economic conditions and competing priorities limit the availability of appropriated federal funds to implement the SW Ecodistrict vision. These partnerships are important because the individual and collective benefits to the federal government, the District of Columbia, and private stakeholders are substantial.

The GSA and the NPS have the authority to establish partnerships to carry out many of the plan recommendations. A few recommendations may require executive or legislative authorization, such as allowing the existing central utility plant to serve nearby private development.

A ROADMAP TO SUSTAINABILITY

The *SW Ecodistrict Plan* is a 20-year roadmap to seize existing momentum and bring together federal, District, and private sectors to redevelop the study area into a fully functioning and model ecodistrict. The plan is flexible, not prescriptive; it should inform planning, guide design decisions, and help identify complex land use, transportation, and infrastructure improvements that require coordination among the area's various stakeholders. The plan should be used to ensure that near-term actions do not preclude implementation of longer-term recommendations. Such an approach can benefit all stakeholders because the value of the whole is greater than the sum of its individual parts.

The recommended ecodistrict projects are designed to be prioritized and carried out over time as federal agencies' missions and space needs change; as funds are available and align with public (federal and local) and private investment priorities; and when the rate of return on investment makes economic sense. The plan contains near-term initiatives that can be achieved in the next few years, while others will require a longer period of time. Projects will require detailed planning and evaluation to comply with a host of federal and local policies and laws. Individually, each recommendation addresses important issues to incrementally realize the SW Ecodistrict vision; collectively, they are transformative.

The Vision



THE SW ECODISTRICT VISION TRANSFORMS THE 10TH STREET AND MARYLAND AVENUE CORRIDORS INTO A LIVABLE AND HIGHLY SUSTAINABLE COMMUNITY THAT IS:

- › A revitalized neighborhood and cultural destination;
- › A well-connected neighborhood;
- › A high performance environmental showcase;
- › A successful economic partnership.



Existing view of 10th Street looking north.

ICON KEY



Solar PV



LED light



Flow through planter



Green roof



Solar shade



Green wall



Greywater irrigation



Train



THE SW ECODISTRICT WILL BE A REVITALIZED COMMUNITY AND CULTURAL DESTINATION

10th Street will become a green, mixed-use corridor that infuses the civic qualities of the National Mall and the vitality of the city into this important area in the monumental core. It will serve as the spine of the district water and energy systems, showcasing the ecodistrict's commitment to sustainability.



Existing view of the VRE L'Enfant Station platform and CSX Railway.

THE SW ECODISTRICT WILL BE A WELL-CONNECTED COMMUNITY

An expanded L'Enfant Station will become an intermodal hub, a nexus of commuter rail, Metro, streetcar, and bus service accommodating increasing demand for public transit. The new station will exemplify a commitment to sustainability, integrating a solar canopy to collect energy and impervious surfaces to manage stormwater. A complete and continuous network of sidewalks, bicycle lanes, streets, and transit services will connect the ecodistrict with other points in Washington and the National Capital Region.



Existing view from Reservation 113 toward the U.S. Capitol.



ICON KEY

-  Stormwater collection
-  LED light
-  Flow through planter
-  Green roof
-  Bikeshare
-  Green wall
-  Greywater irrigation
-  Metro

THE SW ECODISTRICT WILL BE A HIGH PERFORMANCE ENVIRONMENTAL SHOWCASE

Reservation 113, located along a newly established Maryland Avenue, will serve as the primary park for the new neighborhood, offering flexible space for national and local purposes at the nexus of an important intermodal hub. More than a broad expanse of beautiful lawn, walks, and trees, the park will capture stormwater for reuse and include native vegetation and green walls to provide habitat and nature within the city.



Existing view toward Banneker Park from Maine Avenue and 7th Street.

THE SW ECODISTRICT WILL BE LED BY ECONOMICALLY SUCCESSFUL PARTNERSHIPS

Banneker Park will become a civic gateway to the National Mall from Maine Avenue and The Wharf, an adjacent private waterfront development project. The improved park, new cultural facilities, and adjacent private development located atop the Southwest Freeway are examples of the recommended public-private partnerships and intergovernmental cooperation critical to achieving the SW Ecodistrict vision.

The Path to Sustainability

The development scenario is based on the plan's area-wide neighborhood and environmental framework strategies and site-specific recommendations that best achieve the SW Ecodistrict vision. It seeks to improve the efficiency of federal ownership of land and buildings and retain federal agencies in the District of Columbia in locations appropriate to their missions, while integrating a mix of service, hotel, and residential uses.

The neighborhood and environmental frameworks guide the development scenario's land use, transportation, open space and cultural connections, overall character, and energy, water, and waste systems. District-scale and building-scale strategies are incorporated to reduce energy and water use, create energy from renewable sources, improve stormwater management, and increase connectivity. The district-scale approach will achieve greater results and efficiencies than individual improvements site by site.

The development scenario incorporates multiple needed strategies, including rehabilitating, repurposing, infilling with new development, and redeveloping federal buildings to inform the overall development pattern. The scenario:

- › Maximizes the use of federal land and buildings;
- › Increases development by approximately five million sq. ft.;
- › Increases the mix of uses;
- › Improves walkability; and
- › Reduces the federal government's operating costs and contributes to the city's economy.

To revitalize the area, lightly rehabilitated buildings will be repurposed or redeveloped over time.

MULTIPLE SITE AND BUILDING STRATEGIES WILL LEAD TO REVITALIZATION

EXISTING



REHABILITATION



REPURPOSE



INFILL & REDEVELOPMENT



DEVELOPMENT SUMMARY

	<i>Gross Sq. Ft.</i>
Existing - Full and Light Rehab*	10.8 Million
Repurpose	+ 600,000-1 Million
Redevelopment	+ 3.0 Million
Infill	+ 2.2 Million
Potential Development Scenario*	
	= 14.7-15.1 Million

* Since lightly rehabbed buildings will be repurposed or developed, the potential total is not cumulative.

- Rehabilitation - Full
- Rehabilitation - Light

Full Rehabilitation - Buildings that will remain permanently will be fully rehabilitated by upgrading windows, building skin envelopes, and mechanical systems.

Light Rehabilitation - Buildings that may be repurposed or redeveloped will be lightly rehabilitated in the near-term by improving lighting and water fixtures to reduce energy and water use.

- Repurpose

Repurpose - Some existing buildings may be repurposed. Repurposing involves fully rehabilitating the building and changing the building's use. It may also involve adding height and increasing the building footprint and potentially changing the building's ownership.

- Redevelopment
- Infill

Infill - Infill development will occur on existing sites that are vacant or have small, under-utilized buildings.

Redevelopment - Some existing buildings or sites that are inefficient may be demolished and redeveloped.



The Development Scenario

- Redevelopment
- Infill
- Repurpose
- Rehabilitation - Full
- Private Buildings (In Study Area)
- Central Utility Plant
- Solar Canopy



The Development Scenario

The development scenario can be achieved over time as federal space needs change, as buildings are modernized, or as opportunities arise to leverage federal, local, and private funds. Collectively, the rehabilitation, repurpose, infill, and redevelopment recommendations will transform the study area into a high performance neighborhood and create better land use, transportation, environmental, and economic outcomes.

NEIGHBORHOOD FRAMEWORK

LAND USE

The area will maintain secure federal office space while increasing development density and providing the range of uses expected within a vibrant urban neighborhood. New development will accommodate cultural, educational, residential, retail, and hotel activity.

PUBLIC SPACE

The neighborhood will become a national cultural destination by extending the civic qualities of the National Mall. It will provide a distinguished setting for future national museums and memorials, places for public gatherings, and neighborhood activities.

TRANSPORTATION

New development will break-up oversized superblocks and re-establish the street grid. The area will have a complete and continuous network of sidewalks, bicycle lanes, streets, and transit services ensuring mobility to, from, and within the area for all modes of travel. Maryland Avenue will be established as an urban boulevard and an expanded intermodal station will become the nexus of regional rail, Metro, streetcar, and bus services.

ENVIRONMENTAL FRAMEWORK

DISTRICT ENERGY SYSTEM

Both public and private buildings will be served by a district energy system that relies on the existing central utility plant and future micro-grids. Buildings will be rehabilitated or redeveloped to increase energy efficiency. Renewable energy will be produced onsite and distributed throughout the area.

DISTRICT WATER SYSTEM

All stormwater will be captured, cleaned, and held in cisterns located beneath 10th Street until needed for the area's non-potable water uses such as toilets, mechanical systems, and for irrigation of the area's green streets and public spaces.

WASTE

Recycling and composting programs within each building will significantly divert waste from the landfill.

GREEN INFRASTRUCTURE

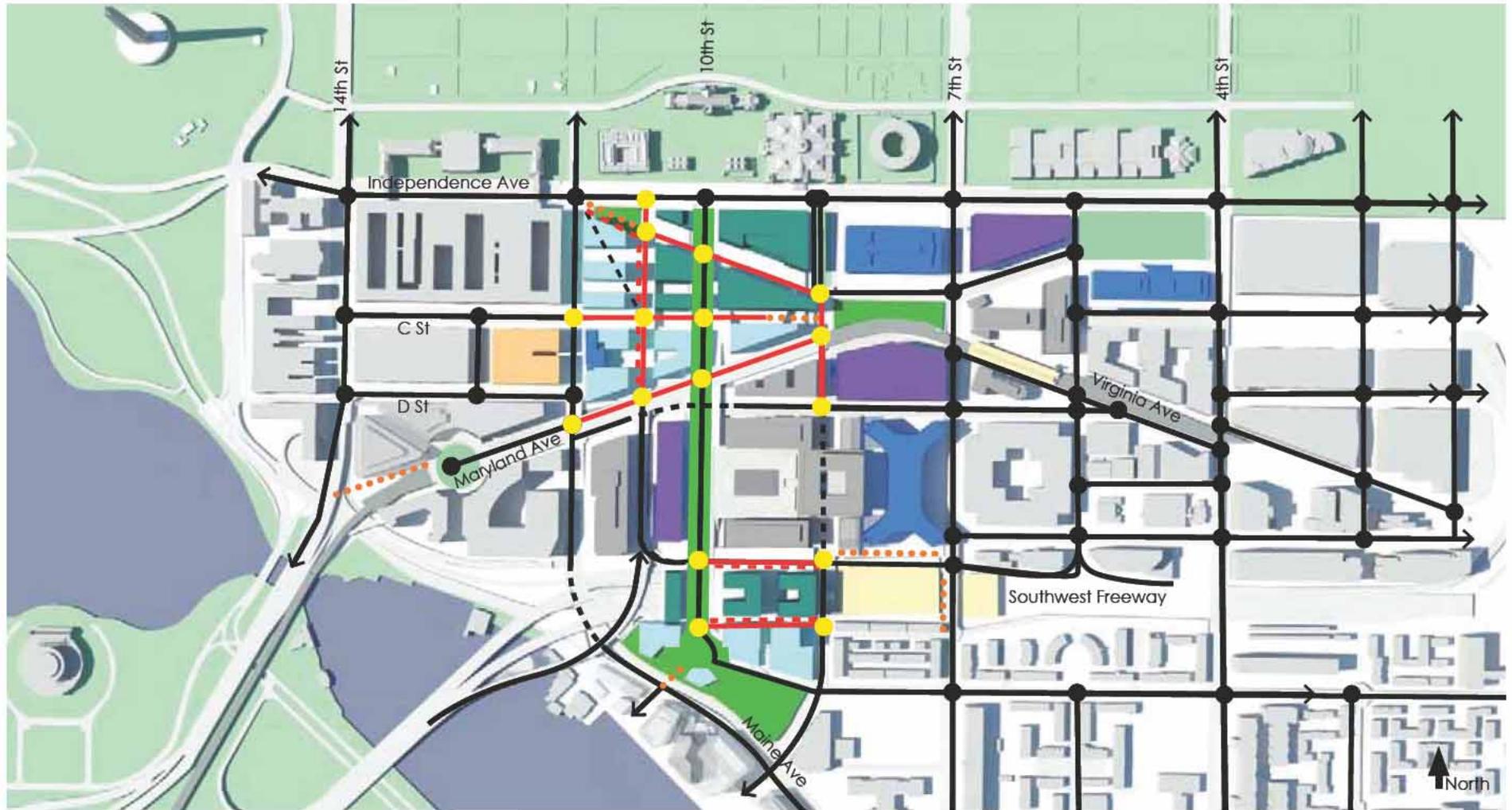
Green roofs, new parks, bioswales, and streetscapes will reduce the urban heat island effect, provide pedestrian comfort, and enrich community life. This system will provide connected habitat corridors to the Washington Channel and improve the neighborhood's overall visual character.

ECONOMIC VITALITY

Leveraging public and private investments will maximize benefits and provide a template for reuse of federal properties. These investments will ensure that federal operations and missions are maintained while offering private sector land and development opportunities.



Summary Plan



- | | | |
|-----------------------|----------------------------|-----------------------------------|
| Redevelop | Pedestrian Connection | Proposed Park |
| Infill | Proposed Street & Sidewalk | Existing Park |
| Repurpose | Proposed Tunnel | Private Buildings (in Study Area) |
| Full Rehabilitation | Existing Street & Sidewalk | |
| Central Utility Plant | Existing Tunnel | |
| Solar | Existing Intersection | |
| | Proposed Intersection | |

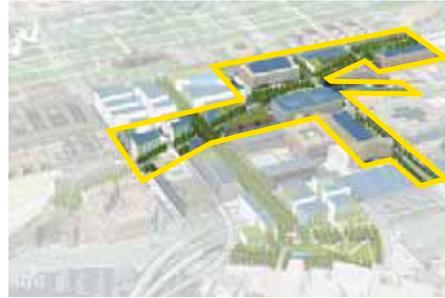
Focus Areas

The development scenario comprises four focus areas as a way to organize the plan's recommendations into building, site, infrastructure, street, and public space categories. Each focus area's recommendations identify opportunities to leverage investments, link critical and functional project components, and address unique and pragmatic near-and long-term phasing conditions. Individually the recommendations address important issues; collectively they are transformative in achieving the SW Ecodistrict vision.



INDEPENDENCE QUARTER

A mixed-use community anchored by a national museum and a new headquarters for the U.S. Department of Energy.



MARYLAND AVENUE AND 7TH STREET CORRIDORS

An urban boulevard centered on a signature park and an expanded L'Enfant Station intermodal center.



10TH STREET CORRIDOR AND BANNEKER PARK

An inviting civic corridor connecting the National Mall and Smithsonian Museums to the southwest waterfront, anchored by an improved Banneker Park, a nationally significant cultural destination.

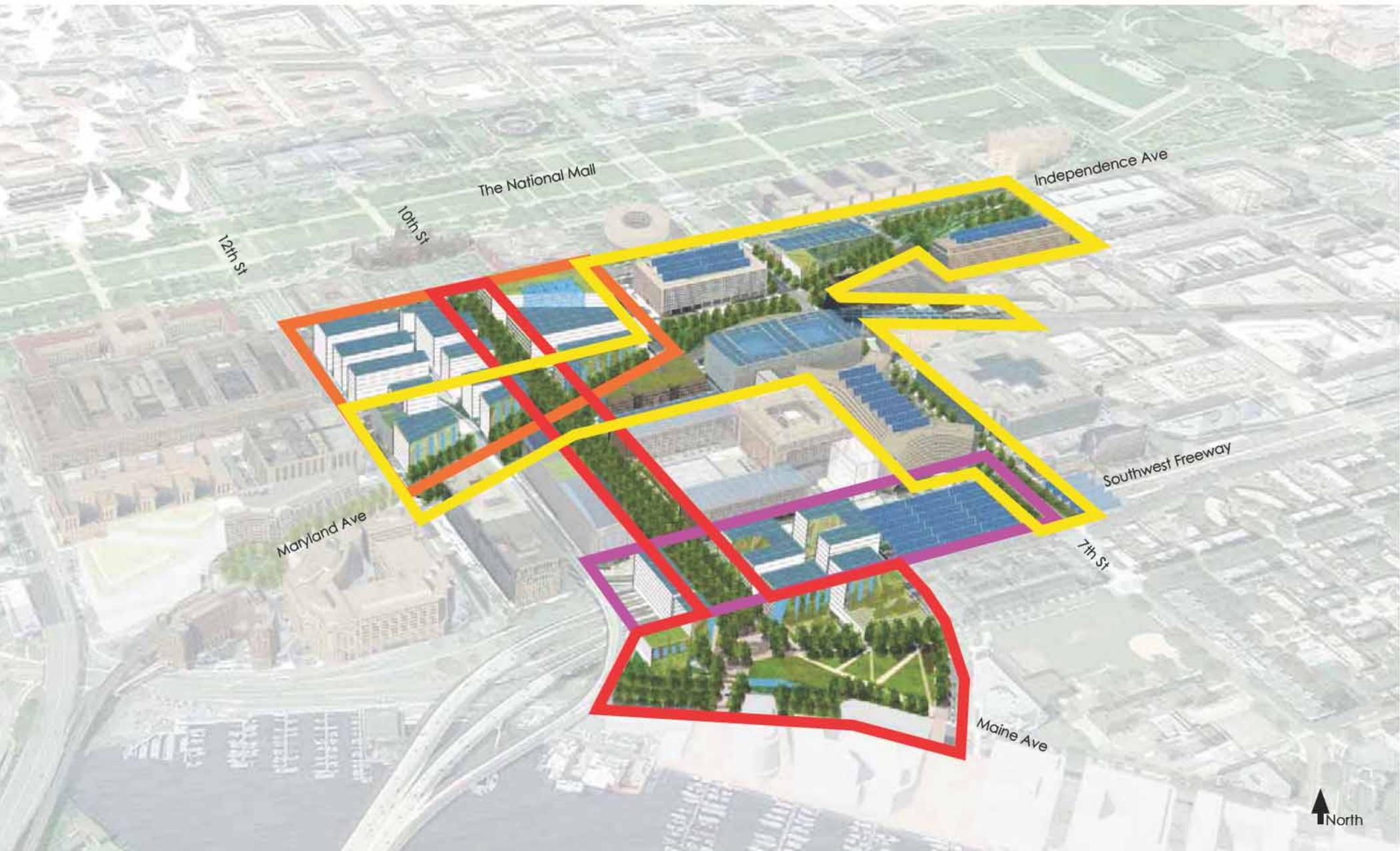


SOUTHWEST FREEWAY

A private mixed-use development atop the Southwest Freeway will support new connections between existing Southwest neighborhoods, the SW Ecodistrict, and the National Mall.



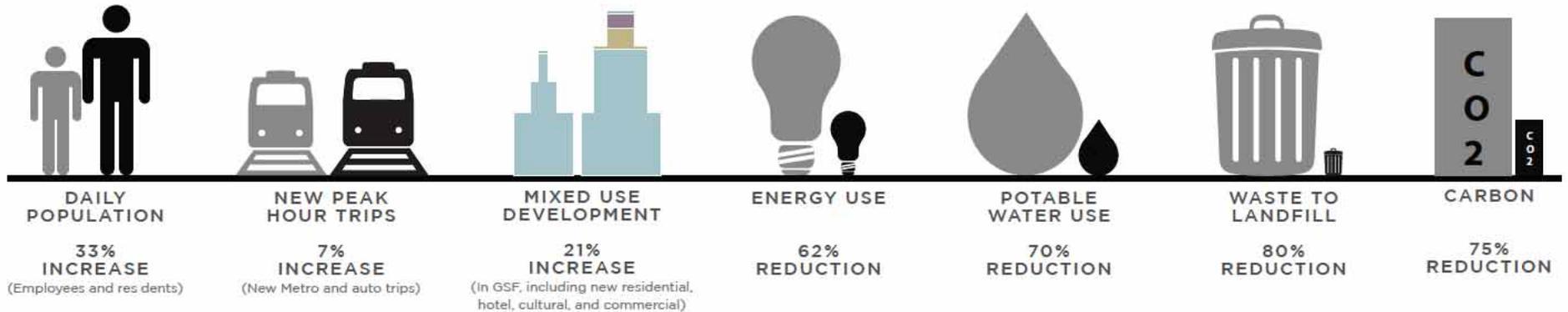
Focus Areas



Measuring Success

The development scenario illustrates how an integrated framework of sustainable neighborhood and environmental strategies can achieve the SW Ecodistrict goals. Success will be measured by an increase in neighborhood vitality coupled with a reduction in resource use per capita.

A COMPARISON OF THE STUDY AREA TODAY AND IN 2030



NEIGHBORHOOD DEVELOPMENT RESULTS

- › Retains, reconfigures, or improves efficiency of **7.9** million sq. ft. of federal office space that will accommodate up to **19,000** additional employees than currently work in the area.
- › Creates an additional **1.0** million sq. ft. of office space for either private or federal office purposes that will accommodate an additional **5,000-6,000** workers.
- › Creates **1.8** million sq. ft. of residential and hotel space for up to **1,200** residences and **600** hotel rooms that will accommodate **1,500** new residents and a total of **246,000** visitors per year.
- › Accommodates at least **100,000** sq. ft. of community-serving retail.
- › Establishes **4 TO 5** sites for up to **1.2** million sq. ft. of cultural development.
- › Creates **14.3** acres of new or improved parks and plazas and establishes up to **5** sites for commemorative works.
- › Reconnects the street grid and create **16** new intersections for easy accessibility.
- › **EXPANDS** the rail corridor and the L'Enfant Station to **INCREASE** commuter **TRANSIT CAPACITY**.
- › Establishes a **GRAND CONNECTION** between the National Mall and the southwest waterfront.

ENVIRONMENTAL RESULTS

- › Demonstrates that district-scale strategies yield greater results.
- › Reduces the area's greenhouse gas emissions by **51%**.
- › Allows for the capture and reuse of **ALL** the rainwater in the ecodistrict throughout the year.
- › Reduces potable water use by **70%**.
- › Increases the amount of waste diverted from the landfill **FROM 35% TO 80%**.
- › Transforms the federally-owned central utility plant into a **HIGHLY EFFICIENT** and **FINANCIALLY SUCCESSFUL** energy model.
- › Contributes to **CLEANER RIVERS** and **IMPROVED WATER QUALITY**.

ECONOMIC RESULTS

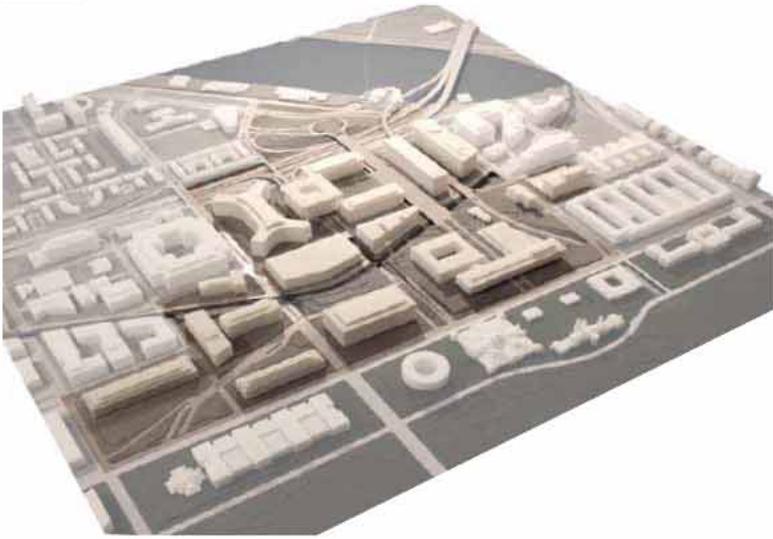
- › **REDUCES** federal operating and maintenance **EXPENSES**.
- › **REDUCES** federal lease **EXPENSES**.
- › **GENERATES NEW TAX REVENUE** for the District of Columbia.



The SW Ecodistrict in 2030



Development Scenario



(Top image)
Existing Conditions
Study Model (2012).

(Right image) Recommended
Development Scenario
Study Model (2030).

